ARGUS EstateMaster®

User Manual

ARGUS EstateMaster DM 7.20

November-2019

Table of Contents

Part

I

1   Introduction

ARGUS EstateMaster DM is a cash flow model designed to track your development cash flow once the project commences, right through to completion. It assists with the efficient management of any property development project, allowing the user to manage and track the project's costs and revenues, update forecasts with actuals and compare the current forecast with previously stored budgets.

The Program can be used to:

- Import ARGUS EstateMaster DF feasibilities as the original budget/forecast

- Customise account codes to allow data to be imported from accounting systems

- Overwrite forecast data with actuals and report on budget variances against the original and previous forecasts

- Track commitments, accruals, actuals to date and forecast to completion

- Update forecasts on Profit, NPV, IRR and other key performance indicators

- Manage the project via the dynamic Gantt chart.

- Track a project's cash flow and risk exposure.

1.1   Program Integrity

Every effort has been made to provide a quality product that is simple, flexible and detailed in its analysis.

The ARGUS EstateMaster DM program has been sealed to safeguard the integrity of the program and formulae. If the seal is broken the validity of the formulae and program calculations cannot be guaranteed any more. Therefore, we recommend that the authors be notified of any problems rather than the user attempting to rectify the problem by removing the protection facility.

To this end any modifications to the ARGUS EstateMaster DM program are prohibited without the express written approval of the authors EstateMaster Pty Ltd.

Also, we cannot guarantee that the program is or will remain error free for every possible input permutation. To retain the integrity of the programs we recommend you audit the models on a regular basis with manual reality checks on the output results.

Furthermore the program assumes certain tax assumptions such as rates of stamp duty. These may change in time and it is important for the user to keep abreast of such changes and know how they effect the model's assumptions.

1.2   System Requirements

To install and operate ARGUS EstateMaster DM efficiently, the following is recommended:

- A 64bit PC with a Quad Core CPU (Intel Core i5 / i7) and a clock speed of at least 2.8Ghz (or equivalent).

- Microsoft Windows 8.1 or later -or- Windows Server 2012 or later

- Microsoft .Net Framework 4.6 or higher.

- 8Gb RAM or higher.

- Internet connection (for downloading files and activating licences).

Note to Apple Mac Users: ARGUS EstateMaster DM can only run on Mac's via a Windows Virtualization tool such as VMWare or Parallels.

Part

II

2 Introduction to Development Analysis

2.1 Development Margin

Before the widespread use of personal computers the traditional approach to development analysis was to:

- Estimate the total development cost for a project in current dollars (non inflated) including interest on 100% borrowings;

- Estimate the sale prices (less selling costs) based on comparable sales or income capitalisation expressed in current dollars;

- Calculate the net profit by subtracting total development cost from revenue; and

- Calculate the development margin by dividing profit by total development cost:

Development Margin = $\dfrac{\text{Net Profit} * 100\%}{\text{Total Development Cost}}$

Through experience, a 15% to 30% development margin was considered adequate for a project to be viable, although this would vary according to the level of project, financial and market risk.

Example of Development Margin Method

	Units	$ Rate Per Unit	Total
Revenue			
Sale of units	50 units	500,000	27,500,000
Less: GST	7.5% of gross sales *		-2,050,000
Less: Selling costs	3.5% of gross sales		-962,500
Net Sale Proceeds			**24,487,500**
Costs			
Land purchase price	5,500 sqm	900	4,950,000
Other acquisition costs			262,750
Demolition			150,000
Construction costs	5,500 sqm	1,700	9,350,000
Professional fees			855,000
Government charges			913,000
Land holding costs			369,000
Finance			3,058,155
Fees and Charges			140,000
Total Project Costs			**20,047,905**
Profit			**4,439,595**
Margin			**22.14%**

2.2 Time Value of Money

The traditional development method of project appraisal however was recognised to be flawed when one or more of the following factors were involved:

- Inflation and above inflation escalations occurred with costs and sale values;

- Project periods extended beyond two or more years;

- Other medium term investments competed for funds; and

- Costs and sales were staged giving variable cash flow exposures.

The analytical drawback is due to the fact that the traditional approach does not account for the time value of money. Usually, a dollar today is more valuable than a dollar next year. Future cash flows should therefore be reduced (discounted) in value to reflect their current (present) value.

To demonstrate the time value of money, consider the case in which an individual receives a sum of $1,000 and invests it at a return of 10% per annum compounded in Government Bonds. The $1,000 will grow to $1,100 at the end of year 1 and $1,210 at the end of year 2 and so on. It is assumed that this 10% return represents the best use for the funds at a risk free rate. In this example, the investor should value $1,100 in a years time or $1,210 in two years time as equivalent to $1,000 now (ie. its present value). The reduction of future dollars to its equivalent value in money today is known as discounting. Discounting is the reciprocal of compounding and is expressed in the following formula:

$$PV = \frac{FV}{(1+i)^n}$$

Where:
PV = Present Value;
FV = Future Value (predicted amount);
i = Discount Rate per period of time; and
n = number of periods.

2.3 Discounted Cash Flow Analysis

Discounted Cash flow analysis takes into account the time value of money in a much more detailed way than the developer's profit margin by considering the timing of all costs and incomes.

The first requirement of cash flow analysis is to create a tabulation of money and time with cash flow items along one axis and time on the other axis. In other words the same cash items used in the traditional approach (except interest on finance), are tabulated against equal time periods (months, quarters or years) and the values of those cash items are recorded in the time period are forecasted. Interest is excluded because this is incorporated in the discount rate as demonstrated above.

The value of all cash items are totalled for each time period (with cost items being negative and revenue items being positive) resulting in a net cash flow range through time. This range of net cash flows is discounted to present value. The resultant net present value (NPV) measures the difference between the discounted revenues and the discounted costs. This is the first and perhaps the most important performance indicator. A positive NPV implies that the present value of incomes exceeds the present value of costs and the project is therefore feasible.

The other primary indicator is the internal rate of return (IRR). This is the discount rate at which the net present value equals zero. Possibly a better way to understand its meaning is to express it as the maximum interest rate that can be charged to a fully funded project before the project would show a net loss.

Example of Discounted Cash Flow

Year	0	1	2	3	4	Total
Revenue						
Sale of building units A				15,000,000		15,000,000
Sale of building units B					12,500,000	12,500,000
Less: Selling costs				-525,000	-437,500	-962,500
Less: GST				-1,125,000	-937,500	-2,062,500
Net Sale Proceeds				**13,350,000**	**11,125,000**	**24,475,000**
Costs						
Purchase price	4,950,000					4,950,000
Stamp duty	222,750					222,750
Other purchasing costs	40,000					40,000
Construction						
Demolition		150,000				150,000
Construction building A			5,100,000			5,100,000
Construction building B				4,250,000		4,250,000
Professional fees		13,500	459,000	382,500		855,000
Statutory contributions A			420,000			420,000
Statutory contributions B				350,000		350,000
Water contribution A			78,000			78,000
Water contribution B				65,000		65,000
Land holding costs		123,000	123,000	123,000		369,000
Finance fees and charges	140,000					140,000
Total Costs	**5,352,750**	**286,000**	**6,180,000**	**5,170,500**	**0**	**16,989,750**
Net Cash Flow (NCF)	**-5,352,750**	**-286,500**	**-6,180,000**	**8,179,000**	**11,125,000**	**7,485,250**
Discount Factor @ 20.0%	1.00	0.83	.0.69	0.58	0.48	
Discount NCF	**-5,352,750**	**-238,750**	**-4,291,667**	**4,733,507**	**5,365,066**	**215,406**
NPV @ Discount Rate of 20.0%						**215,206**
IRR						**20.98%**

2.4 Performance Indicators

Development Margin

Is used as a reflection of profitability and is the percentage return of net profit over total development cost calculated in the following way:

Development Margin = $\dfrac{\text{Net Profit} * 100\%}{\text{Total Development Cost}}$

Where:
Net Profit = Total Revenue less Total Development Cost; and
Total Development Cost includes all finance and interest charges, land holding and selling costs.

Residual Land Value Based on Target Developers Margin

Is the maximum price that can be paid for the land and still achieve the desired development profit margin (Target Margin).

Net Present Value

Is the sum of the present values of all project cash inflows and outflows over the life of the project. A positive NPV infers an Internal Rate of Return (IRR) greater than the discount rate. Interest on borrowings and interest received on re-investment of surplus funds and equity is ignored since this is incorporated in the discount rate. The formula is:

$$\textbf{NPV} = \sum_{n=t}^{n=0} \left[\frac{FV}{(1 + i)^{n}} \right]$$

Where:
PV = Present Value;
FV = Future Value (predicted amount);
i = Discount Rate per period of time; and
n = number of periods.

Internal Rate of Return (IRR)

Is the discount rate at which the sum of the discounted negative cash flows equals the discounted positive cash flows, i.e. the discount rate at which the NPV equals zero. Simplistically the IRR represents the ACTUAL RETURN on funds invested. Interest on borrowings is ignored since this is incorporated in the discount rate.

Residual Land Value Based on NPV

Is the value of land which makes the net present value of the project = Zero or the IRR = Target IRR or Discount Rate. It is the maximum price to be paid for the land (excluding transaction costs) that will make the project feasible.

2.5   Discount Rate

Discount Rate (or Target IRR) is simplistically the DESIRED RETURN on funds invested. For discounted cash flow analysis the discount rate is the rate at which future cash flows are discounted to present value. For a development to be feasible the discounted value of future cash flows (Net Present Value) must be greater than zero. A feasible project will have an internal rate of return (FORECAST RETURN) greater than the discount rate (DESIRED RETURN).

A simple and popular method for choosing a discount rate in discounted cash flow analysis is an "Opportunity Cost of Capital" rate, which is given, in the following formula:

Discount Rate = Inflation + Risk Free Rate of Return (Cost of Capital) + Risk Premium

The risk free rate of return or cost of capital reflects the opportunity cost in not proceeding with the development. It may be defined by the current 5-10 year Government Bond rate. Note this includes an expectation of long-term inflation. If a zero inflation model is adopted then a medium term market forecast of inflation should be subtracted from the Government Bond rate to calculate the real risk free rate of return.

Risk Premium

Risk Premium is the level of discounting over and above the risk free rate (or cost of capital), which reflects the level of risk in the project.

Weighted Average Cost of Capital

A more sophisticated method of calculating the discount rate is the WACC which is the weighted required rate of return on debt and equity funding. The formula is as follows:

$$\text{WACC} = \frac{D}{(D+E)} * R_D + \frac{E}{(D+E)} * R_E * (1-T_R)$$

Where:
D = Total Debt
E = Total Equity
R_D = Cost of Debt (risk free rate of return plus debt premium based on the credit rating of the company); and
R_E = Cost of Equity (required return on equity)
T_R = Corporate Tax Rate

A popular method of calculating the required return on equity is the capital asset pricing model (CAPM). The formula is:

$$R_E = R_F + ß * (R_M - R_F)$$

Where:
R_E = expected return on equity;
R_F = risk free rate of return (10 year Commonwealth Bond rate);
ß = sensitivity of an investment's return to the return on the hypothetical market portfolio of shares;
R_M = expected nominal return on the market portfolio (approximated by the yield on the market portfolio of common equity shares); and
$(R_M - R_F)$ = the market risk premium, or additional return demand by investors for holding risky assets.

2.6   Risk Assessment

Risk is usually dealt with in several ways:

- Incorporating a risk premium in the discount rate. This is based on the concept that developers and investors expect higher returns for more risky projects.

- Use of sensitivity testing whereby different low, medium and high values for risky variables are incorporated to test the effects on the performance indicators.

- Application of Scenario Analysis, which records the results from a combination of variations.

- Application of Probability Analysis to produce a probability distribution of outcomes.·   ·

The second method has an advantage over the first method since combinations of different values for different risky variables can provide a range of outcomes. However neither method provides a consideration of the probability of those outcomes. Monte Carlo method assigns probability distributions to the risky variables but because of its complexity and limitations this method is not often used in the property development industry.

Part III
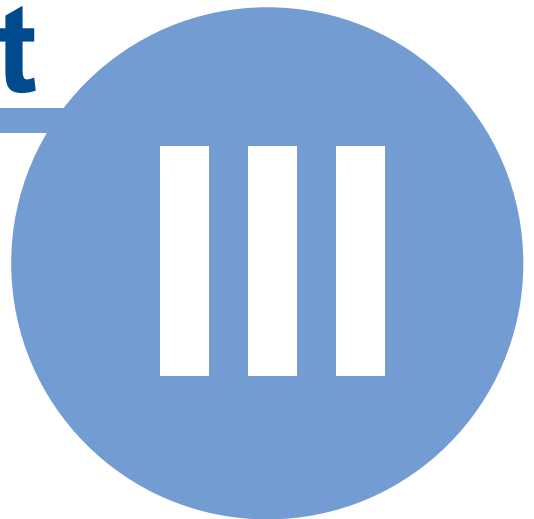
3 Starting the Application

3.1 The Application Launchpad

The entire ARGUS EstateMaster software suite now operates from a central launcher that is loaded from a single shortcut within Windows:

- Once loaded, you can select your installed applications, and it will display a list of files recently opened and saved by the user.

- There are also shortcuts to our extensive Sample File Library, Operations Manual and Training Courses Booking page on our website.

- For those applications not yet installed on the machine, there is information to learn more about them and even links to downloading a free trial .

- Live web content at the bottom also displays frequently updated update alerts, important news and other items of interest, such as the release of new training courses or tutorial videos.

Starting ARGUS EstateMaster

1. In Windows go to the [Start] ➔ [Programs] ➔ [EstateMaster] ➔ and click on 'EstateMaster'
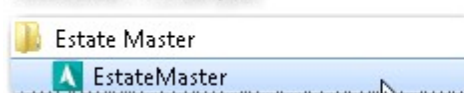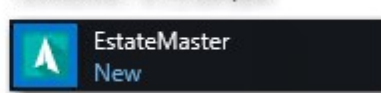
2. The ARGUS EstateMaster Application Launchpad will appear. If this is the first time you have come to this screen, it will provide you with a quick demonstration on how it works.
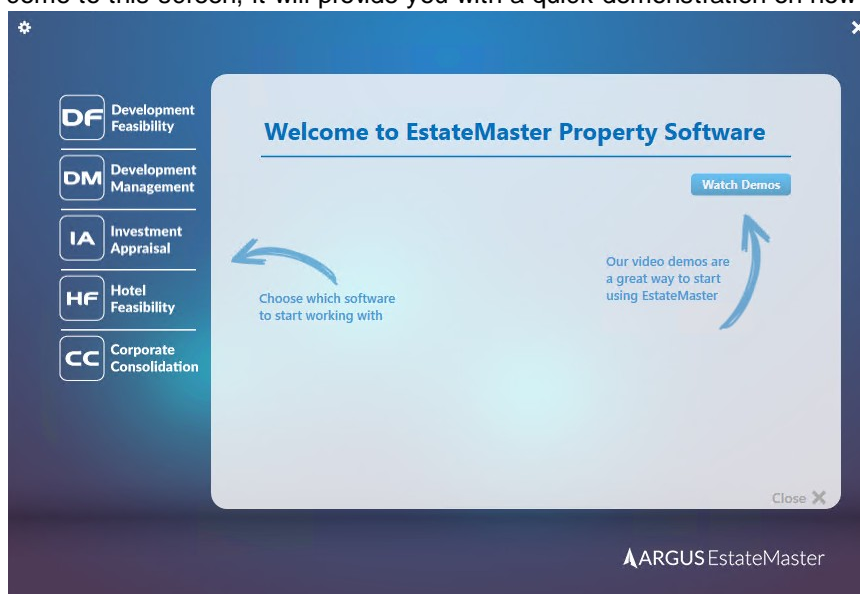
3. At the end of the demonstration, it will prompt you to replay the demo or go to the Settings (e.g. Regional Settings, Chart of Accounts, Database Management).
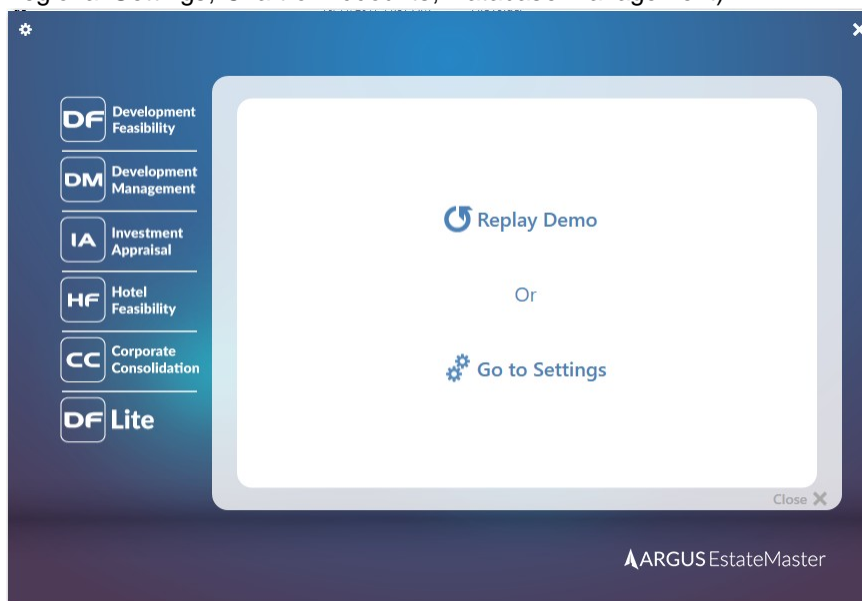
4. If you elect to do neither and press the [Close X] at the bottom right:

   a. The demo will not appear again for that user (it will appear for other users that start the Application Launchpad on that machine)

   b. A small pop-up reminder will appear to set the regional settings. This will stop appearing either once the regional settings are set, or the user presses [X] in the op-up
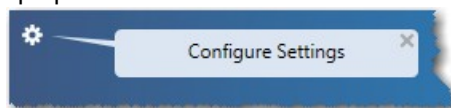
3.2   Regional Settings

The Regional Settings wizard is a helpful tool to control common settings across all products in the ARGUS EstateMaster suite, including currency, taxation, stamp duty / land transfer taxes, etc. Once set, any new ARGUS EstateMaster file started will adopt these settings, saving you time in configuring files for your region. It is only compatible for the following versions:

- DF/DF Lite/DM: ver 6.10 and above.
- IA: ver 3.33 and above.
- HF: ver 2.10 and above.

To set the Regional Settings:

1. Either click on the [Go to Settings] link at the end of the initial Application Launchpad demo, or click on the gear icon at the top-left of the Application Launchpad.

2. Using the 'Country' drop-down list, select the country/region where your projects will be *mainly* located in. If you work on projects in many countries/regions, just choose the most common one (you can edit these settings on a file-by-file basis later)
Note: The country setting automatically defaults to the 'Region and Language' Format setting in Windows
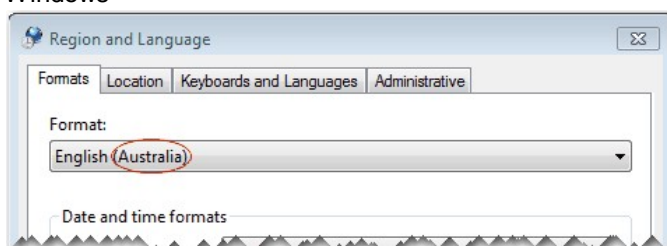
3. Default settings will be loaded for that country, and you can adjust/override them if required. At any point in time, you can reset any manual overrides back to their defaults by pressing the [Reset] button.

4. Once the settings have been defined, press [OK], and it will save them on the active machine.

5. From that point onwards, any *new* file started in any ARGUS EstateMaster application on that machine will adopt these settings.It will not apply these settings when:

   a. An existing file is 'Opened'

   b. A template is opened from the 'New File from Template' option (settings applied within the Template take precedence)

6. Once a new file is started, you are able to adjust any of these settings on a file-by-file basis, just by go to the application's Preferences and changing the related setting there.

Sharing Regional Settings with other Users

Since these settings are machine-specific, you may want to share these settings with other ARGUS EstateMaster users in your organisation. To do so:

1. Ensure you have set and saved the settings you desire. It is advised you start an ARGUS EstateMaster application to ensure the settings are behaving as desired.

2. Close the Application Launchpad.

3. Browse to the following directory on the machine: "*C:\Program Files\Estate Master*" (or "*C: \Program Files (x86)\Estate Master*" on a 64-bit OS)

4. Copy the file *RegionalSettings.ini*

5. Send it to other ARGUS EstateMaster users, with the instruction to place it in the same folder on their machine (overwrite any existing file if it exists)

3.3   Chart of Accounts

The Chart of Accounts utility in ARGUS EstateMaster is a helpful tool to manage a list of the transaction accounts from a company's General Ledger. Setting up the Chart of Accounts in ARGUS EstateMaster allows you to easily assign the corresponding cost/account code to the related project cost or revenue line item via an interactive pop-up dialog. This is essential if you wish to import actuals in ARGUS EstateMaster DM while tracking live projects, but can also be used to build proforma templates for development feasibilities in ARGUS EstateMaster DF.

It is only compatible for the following applications/versions:

- ARGUS EstateMaster DF: ver 6.40 and above.

- ARGUS EstateMaster DM: ver 6.40 and above.

Setting up the Master Chart of Accounts

The 'Master' Chart of Accounts is the one that is adopted by ARGUS EstateMaster DM for applying to individual cost and revenue line items within the application.

1. Either click on the [Go to Settings] link at the end of the initial Application Launchpad demo, or click on the gear ⚙ icon at the top-left of the Application Launchpad, then click on the [Chart of Accounts] tab.
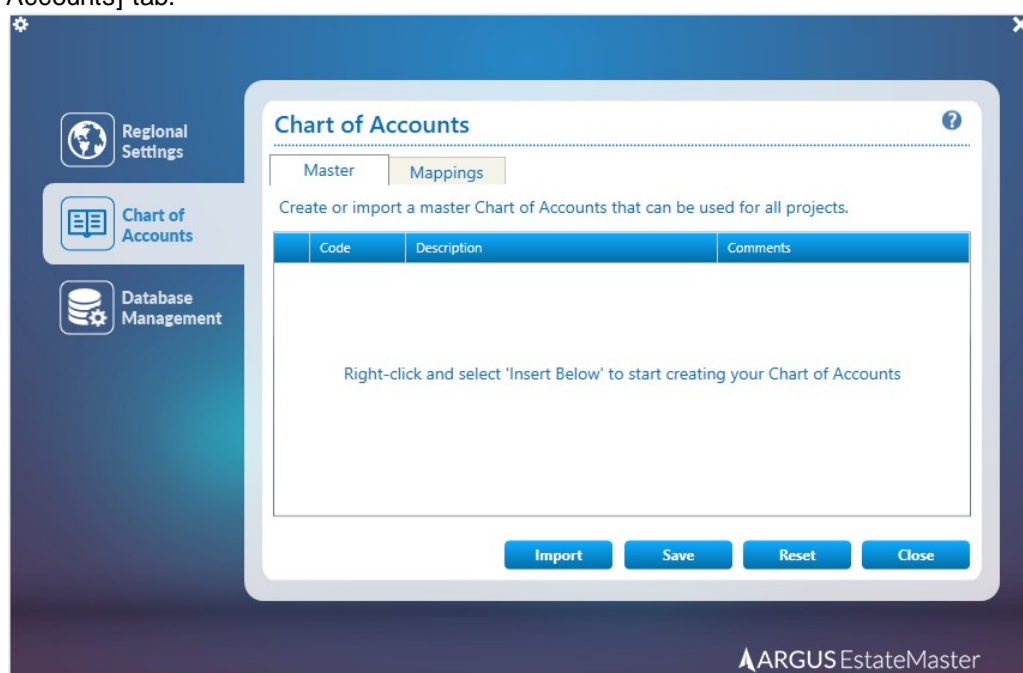
2. On the 'Master' tab, you can:

   a. Create a new Chart of Account list, by entering each account (Code, Description and option Comments), one by one. This is done by inserting new rows by the right-click context menu.

b. Import an existing Chart of Account list, from an Excel, CSV or TXT file.

3. Once completed:

   a. Press the [Save] button to save the settings to your machine.

   b. Select the 'Mappings' tab to create a mapping between the Master Chart of Accounts, and another set of Cost Codes (only applicable if using the ARGUS EstateMaster DM integration with Accounting Systems to import actuals)

More Info: For additional instructions for the above, click on the button at the top-right of the page to load the Help file.

Sharing the Master Chart of Accounts with other Users

Since the Chart of Accounts settings are machine-specific, you may want to share these settings with other ARGUS EstateMaster users in your organisation. To do so:

1. Browse to the directory where the ARGUS EstateMaster application is installed on the machine: (by default C:\Program Files\Estate Master)

2. Copy the following files:

   - **SQL_CoA.xml**: This contains some info about the Master Chart of Accounts (it's unique ID, date last modified, etc).

   - **SQL_CoADetail.xml**: This contains the individual Cost Codes that have been set up in the Master Chart of Accounts.

3. Send them to other ARGUS EstateMaster users, with the instruction to place them in the same folder on their machine (overwrite any existing file if it exists)

Using the Master Chart of Accounts within ARGUS EstateMaster DM

Once the Chart of Accounts settings have been configured on the active machine, they will now be usable within ARGUS EstateMaster DM to allocate individual costs codes to a specific account. Refer to the Cost Codes topic for more information.

3.3.1 Mappings

The Chart of Accounts Mapping feature allows you to map the Cost Codes from one set of Chart of Accounts (usually a more detailed set), to the 'Master' Chart of Accounts, allowing more flexibility when importing actuals from an external Account System into the ARGUS EstateMaster DM CashFlow.

This is useful in scenarios where the 'Master' Chart of Accounts that you wish to adopt within the ARGUS EstateMaster DM CashFlow is different to the source transaction data that is being imported, for example:

- When you are importing from multiple accounting systems (and therefore different sets of Chart of Accounts), but you need to cash flow them in ARGUS EstateMaster DM using a single, standardised, set of Chart of Accounts.

A scenario where a one set of Source Cost Codes are mapped to a different set of Master Code Codes. They may have a similar structure, but have different Codes and Descriptions.

- When you are importing transactions that are at the detailed Cost Code level, but they need to be rolled-up and cash flowed in ARGUS EstateMaster DM at a higher (summarised) Cost Code level.

A scenario where detailed Source Cost Codes need to be rolled up and mapped to a single Master Code Code

Once set up, a Mapping can then be adopted within the Accounting System Integration settings within your ARGUS EstateMaster DM files. This will then determine how transactions are rolled-up and mapped from the source accounting system,and eventually imported into the ARGUS EstateMaster DM Cash Flow.

Setting up a Mapping

1. Ensure that a 'Master' Chart of Accounts has been created. The Cost Codes entered here, are the ones that will need to be entered against each and every cost and revenue line item in the

ARGUS EstateMaster DM CashFlow .
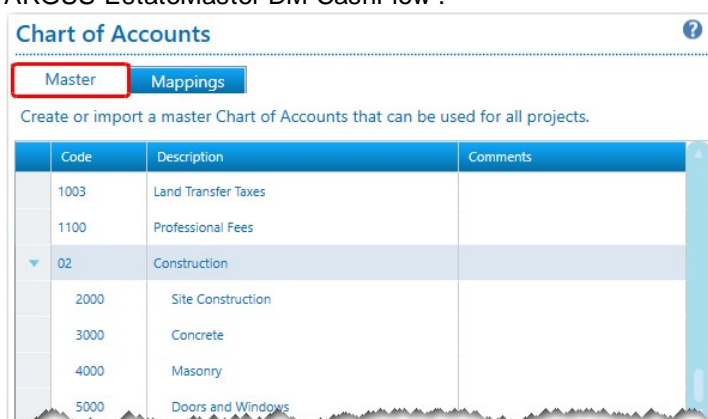
2. On the 'Mappings' tab, click on to start creating a new Mapping, where you will be prompted to give a unique Mapping Name. (You can create multiple Mappings).
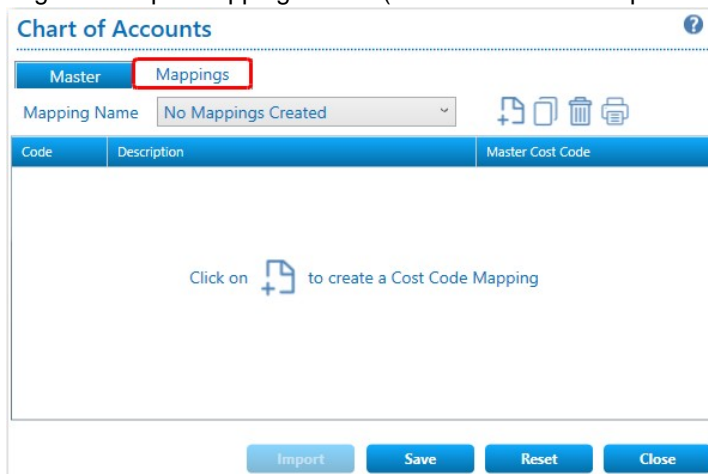
3. Start compiling the Cost Code list by either:

   a. Manually entering each Code and Description, one by one. This is done by inserting new rows using the right-click context menu.

   b. Import an existing Cost Code list, from an Excel, CSV or TXT file.

4. Once the Cost Code list has been created/imported, using the drop-downs in each row, map each and every one to a Master Cost Code (Note: A Master Cost Code can have many 'source' Cost Codes mapped to it, i.e. a 'many-to-one' mapping).
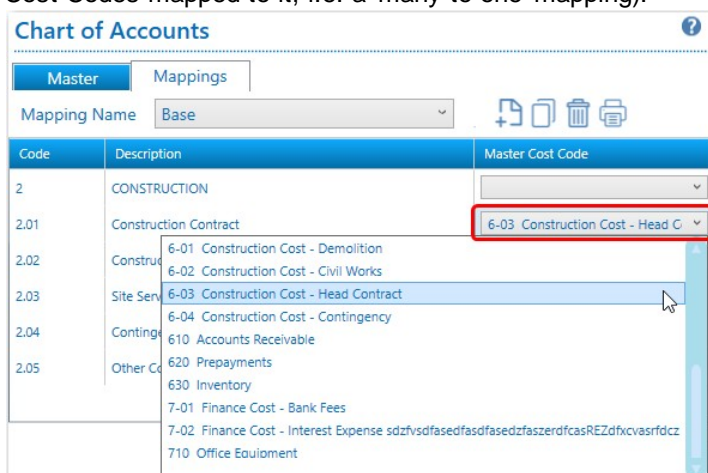
5. Once completed, press the [Save] button to save the settings to your machine.

6. Within ARGUS EstateMaster DM, select the Cost Code Mapping you wish to adopt when importing actuals from the Accounting System.

Sharing the Master Chart of Accounts and Mappings with other Users

Since the Chart of Accounts settings are machine-specific, you may want to share these settings with other ARGUS EstateMaster users in your organisation. To do so:

1. Browse to the directory where the ARGUS EstateMaster application is installed on the machine: (by default C:\Program Files\Estate Master)

2. Copy the following files:

   - **SQL_CoA.xml**: This contains some info about the Master Chart of Accounts (it's unique ID, date last modified, etc).

   - **SQL_CoADetail.xml**: This contains the individual Cost Codes that have been set up in the Master Chart of Accounts.

   - **SQL_COAMapping.xml**: This contains some info about the Mapping (it's unique ID, name, date last modified, etc).

   - **SQL_COAMappingDetail.xml**: This contains the individual Cost Codes, and to which Master Cost Code they are mapped to.

3. Send them to other ARGUS EstateMaster users, with the instruction to place them in the same folder on their machine (overwrite any existing file if it exists)

Using the Mappings within ARGUS EstateMaster DM

Once the Mapping settings have been configured on the active machine, they will now be available within the ARGUS EstateMaster DM Accounting System Integration to select and control how source transactions are mapped when imported into the ARGUS EstateMaster DM CashFlow.

3.4   Product Tabs

The tabs for each ARGUS EstateMaster product will display different information, depending on whether it is installed on the active machine or not. To customise the experience for each user, each time the Application Launchpad is started, it will always revert to the last tab selected by that user on that machine.

Software is Installed

When the software is installed on the active machine, the following will be displayed on the product tab:

- A list of 'Recent Files' opened or saved by the active user (a list is stored for each user on the machine). To open one of these files, either double-click on it, or select it to expand the file details and then click the [Open] button.

- A list of 'Sample Files' provided to demonstrate the use of the software in different scenarios. These are automatically sourced from our online Sample Files Library, so an internet connection is required for them to appear on the Application Launchpad and always be up-to-date with the latest samples.

- A [Browse] button to manually search for and open an ARGUS EstateMaster DM file .

- A [Run] button to start the ARGUS EstateMaster DM application with a blank new file.

- Links to view the Training Course online booking site and open the User Manual (PDF).
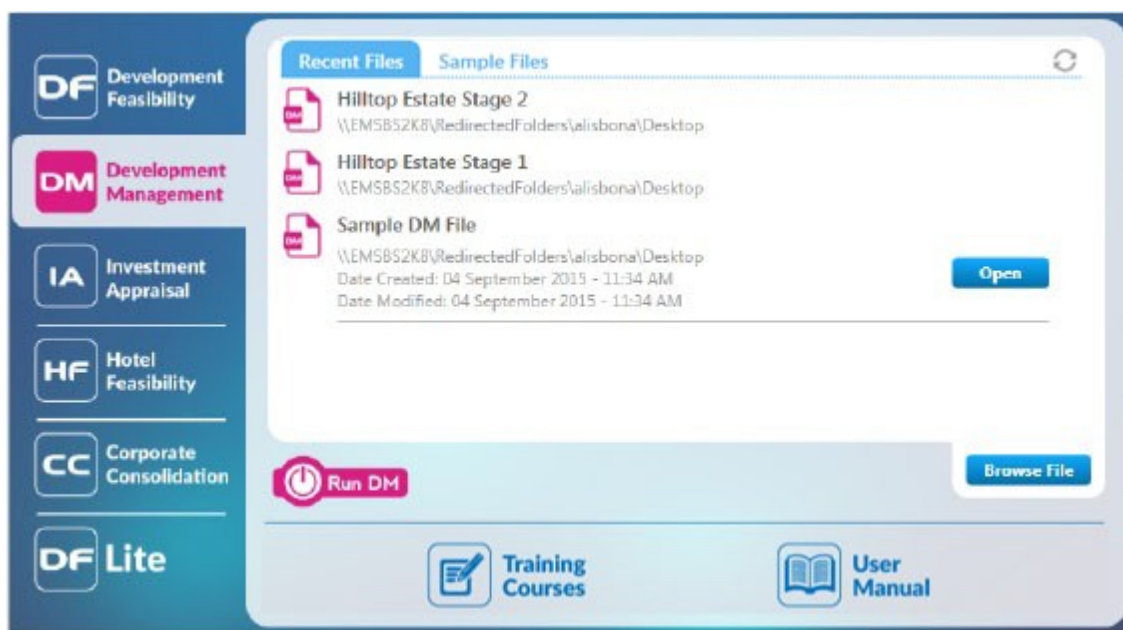
Recent Files List

Sample Files List

Software is not Installed

When the software is not installed on the active machine, the following will be displayed on the product tab:

- A brief summary of the product, with links to a demonstration video, software data sheet and contact details.

- A link to download a 14-day free trial of the software.

Part IV

4 Navigation

4.1 Quick Start

1. Run the ARGUS EstateMaster DM program from the ARGUS EstateMaster Application Launchpad.

2. Open an existing ARGUS EstateMaster DM data file [DM] (*.emdm) using the [File] ➔ [Open] command [Open], or start inputting data to create a new data file.

3. Enter preliminary data into 'Intro' sheet, such as Project Name, Address, etc. Please note that many of the fields on this sheet are mandatory, and you will not be able to save a file if they haven't been entered.

4. Set Preferences by running the 'Preferences' function [Preferences] from the Ribbon Menu (or by pressing [F12]).

5. Navigate around the program by selecting the relevant worksheet tabs.

   Intro / Setup / CashFlow / Stage CF / Summary / Stage Summary / Charts / Financials / Sensitivity / Probability / Profiles / Taxes & Duties /

6. Enter data into input cells with a font colour of **blue** or **purple**. Fixed cells (non input) have a **black** font colour. The worksheets are locked, so the program will only allow you to enter data into the relevant input cells.

7. Check for any data input issues, such as input cells with red backgrounds [50] or error warnings [Error Input]. This indicates that the wrong type of data has been entered (e.g. text in a number field) or the value is not allowed (e.g. a negative value in a positive-only field). Run on the Validate function [Validate] on the Ribbon Menu to check for other issues, such as Circular References.

Input Global Budget Information

- In the 'Setup' and 'Cash Flow' sheets.

- Enter data into input cells with a font colour of blue, purple or green.

- Fixed cells (non input) have a black font colour. Because the worksheets are protected and locked, the model will only allow you to enter into the relevant input cells.

- When starting a fresh model the original budget information can be manually input into the model or imported from a compatible ARGUS EstateMaster DF model using the import feasibility function.

- These inputs are dynamic and should be updated by the user if the program assumptions change during the project.

- Check that your assumptions are correct and targets are met and if necessary return to the 'Setup' and 'Cash Flow' sheets to add or adjust your assumptions.

Set Original Budget

- It is recommended to set the original budget at the beginning of the project once it has been entered into the model. The performance of the project will be reported against the Original Budget on a frequent basis.

- To set the Original Budget use the 'Set as Original Budget' option under 'Management Tools' in the Ribbon Menu. Future updating of the Original Budget can be disabled and locked in the Preferences.

Input Actual Costs in the Cash Flow Sheet

- The actual costs of the project can be entered directly into the cash flow to accurately maintain a history of the project.

- The user can also import data from their accounts system to update the cash flow with actuals.

- The model will automatically reforecast costs and revenues based on the actual costs entered.

Roll Forward and Produce Management Reports

- Once the actual data has been entered into the cash flow the model can be rolled forward one time period and may set the current forecast as the previous forecast. Any variations to the current forecast will now be represented as a variation to the previous forecast (if stored).

- When you are satisfied that the information has been entered correctly you may select the Printing Options. This will allow you to print management reports to detail the history of the project and any variations to forecasts.

- Save your changes using the [File] ➔ [Save/Save As] command 🔲 Save 🔲 Save As on the Ribbon Menu.

Conduct a Risk Analysis

- When data input is complete, you may run the Sensitivity Analysis or Probability Analysis by clicking on the ▦ button on the relevant worksheets.

4.2   Opening and Closing Files

Opening a New ARGUS EstateMaster DM Data File

1. Click [Run] in the ARGUS EstateMaster DM tab of the Application Launchpad.

2. Use the [New] command 🗋 New to load a new blank workbook window.

3. Click on the [New File from Template] button in the 'Templates' menu (if any Templates have been created).
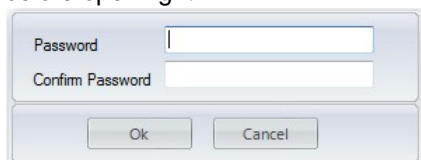
Note: You can open up to 4 new workbook windows in the ARGUS EstateMaster DM application.

Opening an Existing ARGUS EstateMaster DM Data File

1. Open an existing ARGUS EstateMaster DM data file (*.emdm) either by:

    a) Double-click a file in the 'Recent Files' list or click [Browse] to find another file, in the ARGUS EstateMaster DM tab of the Application Launchpad.

    b) Using the [Open] command 📂 Open to browse to and open the file.

c) Browsing Windows Explorer and double-clicking on a data file to open it.

2. If the file was previously saved with a password, then it will prompt you to enter the password before opening it.

3. If the file is open by another user, a message will be displayed indicating which user on which machine has locked the file.
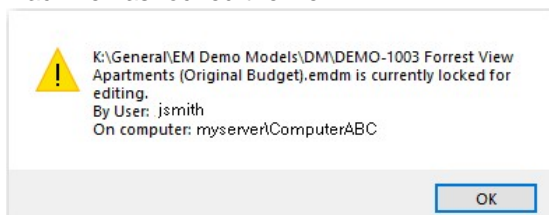
<u>Note:</u> You can open up to 4 new workbook windows in the ARGUS EstateMaster DM application.

Opening Previous Versions (6.6 and above)
As part of software upgrades, the base ARGUS EstateMaster DM template may sometimes incorporate the following changes: • Rows inserted or deleted. • Columns inserted or deleted. • Input fields moved (moved on the same worksheet tab, or a different one). • Input fields 'split' into multiple input fields. • Worksheets inserted, renamed or deleted. These changes to the template may impact on the integrity of any custom formulae that the you have entered into input fields or custom worksheets (inserted or externally linked) in previous version data files. To minimise the impact of such upgrades, during the file 'Open' process, the ARGUS EstateMaster DM application will attempt to update your custom formulae to reflect such changes. If for some reason, the application is unable to automatically update your custom formulae, a warning such as this may appear, prompting you to manually update the file after it has opened.
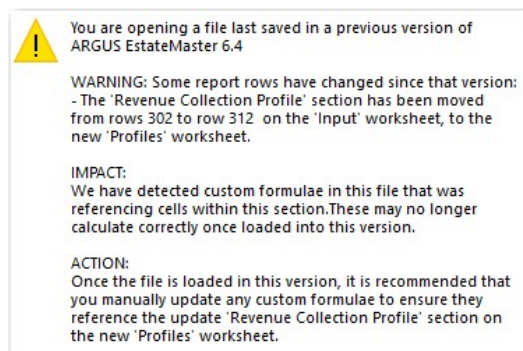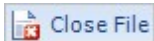
Saving and Closing an ARGUS EstateMaster DM Data File

1. After using the program, save the file if required by one of many different buttons on the Toolbar.

2. Please note that some of the fields on the 'Intro' and 'Setup' sheets are mandatory, and you will not be able to save a file if they haven't been entered.

3. If you have elected to save files with a password in the application settings, then it will prompt you to enter the password and confirm it before saving.

4. Close the currently active DM file by using the [Close File] command ![Close File]

![New, Save As, Open, Print, Save, Close File toolbar]

Exiting from ARGUS EstateMaster DM

1. When finished, close the application either by:

   a) clicking on [X] in the top right corner of the application window,

   b) double clicking the ARGUS EstateMaster DM icon in the top left corner or

   c) selecting [Exit] from the Application Menu.

Saving to File vs Exporting to Database
In addition to saving a DM datafile (*.EMDM), the user can also save (export) the DM data to the Enterprise Database. This database must be set up by an IT Administrator before attempting to Export/Import DM data.

The Save function only saves the DM data to a standalone file (useful for sharing data amongst other users), however using the Import/Export functions, the user can also export all their DM data to the central database for archiving, retrieval and advanced reporting using the ARGUS EstateMaster CC software.

Import from Database
Import an existing Estate Master DF model from the Enterprise Database

Export to Database
Export the current existing Estate Master DF model to the Enterprise Database |

4.3   Importing Data from Versions 3 and 4.

After installing the new .Net-based version of the software, it is recommended that any job files that were created in previous Excel-based versions of the software be transferred to the new version.

Using the Enterprise Database Import function

1. If you have used the Enterprise Database to store you previous ARGUS EstateMaster DM cash flows, then use the Import function to import data to your new ARGUS EstateMaster DM template file.

2. If you are not a Enterprise Database user, you can use the 'Import From Version 3/4' function.

Using the Automatic Import from Version 3/4 Feature

![Import Version 3/4 File menu showing Print, Help, Exit options and Import Version 3/4 File - Import data from a Version 3 or 4 (Excel-based) file; About Estate Master - View the software version and licencing details]
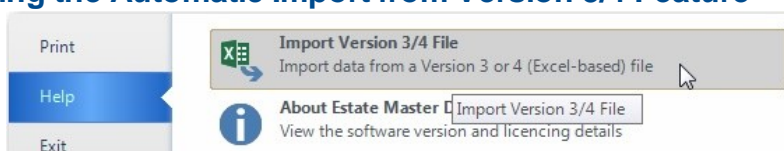
1. Open the latest version of ARGUS EstateMaster DM go to the Application Menu.

2. Go to 'Help' and select 'Import Version 3/4 File'.

3. The program will then prompt you to select the working file created in the previous version and it will import the relevant data from it into the new version.

4. Follow the prompts to complete the process and take note of any warnings or messages.

5. If a message appears claiming that the file is not compatible for importing, you must manually import data (below).

Manually Importing Data

1. Open the new version and any job file that was created in previous Excel-based versions of the software.

2. While having both files opened (new version and old version) you can manually copy inputs from the old version and paste them into the new version. It is recommended to set the input preferences and resizing of the model before transferring the data across.

3. Remember that you may need to transfer data from the following sheets: Setup, Cash Flow (manual equity injections, principal repayments, rate interest variations) and any user-inserted worksheets.

4. Once all the data for one file is transferred, save it under a new file name and rename the old file to avoid confusion (eg. Project - OLD.xls).

5. Complete this process for all existing working files. Once it is satisfied that all data has been successfully transferred, it is recommended that you delete/archive any old files.

4.4 Navigation

The ARGUS EstateMaster DM program is subdivided into a series of worksheets. To navigate around the ARGUS EstateMaster DM program, click on the relevant worksheet tabs (below or above workbook area).

Intro	Introduction page. Enter project name and other details.
Setup	Data input sheet for global budget parameters on escalation, GST/VAT, finance, etc
Cash Flow	Primary data input sheet. This is where costs and revenue forecasts and actuals are entered and monitored. This sheet can transform into a Gantt Chart.
Stage CF	Provides the user with a stage-by-stage break-up of all the costs and revenues and the ability to allocate 'global' costs across the stages.
Summary	The development financial summary containing the financial performance indicators for the Current, Previous, Project and Original Forecasts.
Stage Summary	'Provides the user with a stage-by-stage break-up of all the costs, revenues and KPIs at a summary level.
Charts	Project cash flow charts for the various forecasts.
Financials	Profit and Loss and Balance Sheet reporting.

Sensitivity	The tables and charts from the Sensitivity Analysis.
Probability	The Probability Analysis inputs and distribution profiles of the Development Margin and IRR.
Profiles	The tables for the development cost drawdown (s-curve) profiles and revenue collection profiles
Taxes & Duties	The adjustable stamp duty and lax tax calculation tables.

Quick Go To

To assist with navigating to specific input and reporting areas of the ARGUS EstateMaster DM program, a Quick Go To navigation tool is provided via the F5 keyboard shortcut.

The Quick Go To dialog will allow you to:

- Go to one of the defined input or reporting areas that exist in the active tab, just by double-clicking an item in the list, or selecting it and pressing [OK]

- Go to a defined range name in the application, by entering its name in the 'Range Name Reference' field, and press [OK]. This is helpful if you wish to navigate to a range (visible ones only) that is being referenced in a formula.
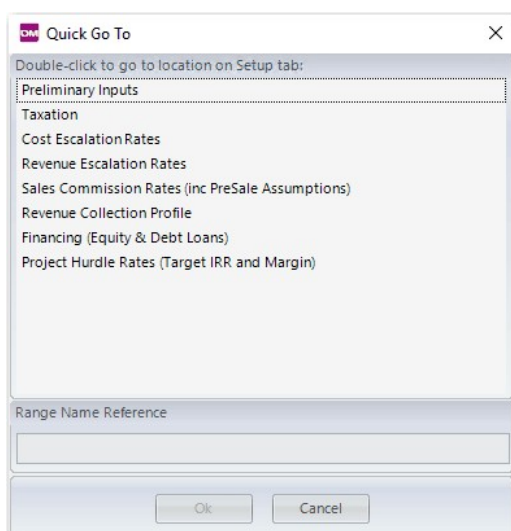
Navigating to Related Input Assumptions from Reports

When reviewing some reports in ARGUS EstateMaster DM, you may want to quickly revert to the input assumptions related to an output or set of outputs on the report. To do so, simply click on the ↵ arrow next to the related report output, and you will be taken to the specific worksheet tab and input section / input field.
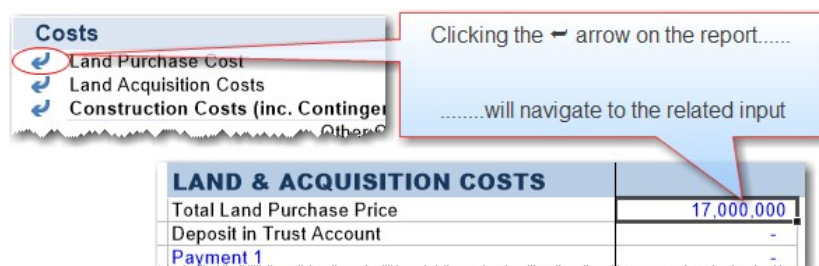
4.5   Keyboard Shortcuts

The following are some keyboard shortcuts to assist in navigation, data entry and working with cells and worksheets.

Files

Ctrl + N	Start a new file
Ctrl + O	Open an existing data file
Ctrl + S	Save the current model to a data file
Ctrl + W	Close the application
Ctrl + P	Load the printing menu

Navigation

Page Down / Page Up	Move one screen down / one screen up in a worksheet
Tab / Shift+Tab	Move one cell to the right / to the left in a worksheet
Ctrl+Arrow Keys	Move to the edge of next data region (cells that contains data)
Home	Move to the beginning of a row in a worksheet
Ctrl+Home	Move to the beginning of a worksheet
End	Move to the end of a row in a worksheet
Ctrl+End	Move to the last cell with content on a worksheet
Ctrl+f	Display the Find and Replace dialog box
F5	Display the 'Go To' dialog box to navigate to defined range names

Working with Cells

Shift+Space	Select the entire row
Ctrl+Space	Select the entire column
Shift+Arrow Keys	Extend the selection by one cell
Ctrl+Shift+Arrow Key	Extend the selection to the last cell with content in row or column
Shift+Page Down / Shift+Page Up	Extend the selection down one screen /up one screen
Shift+Home	Extend the selection to the beginning of the row
Ctrl+Shift+Home	Extend the selection to the beginning of the worksheet
Ctrl+Shift+End	Extend the selection to the last used cell on the worksheet (lower-right corner)

Insert and Edit Data

Ctrl+z	Undo last action (on the active worksheet)
Ctrl+y	Redo last action (on the active worksheet)
Ctrl-c	Copy contents of selected cells
Ctrl+x	Cut contents of selected cells (custom worksheets only)
Ctrl-v	• On standard worksheets: Paste 'Values' from clipboard into selected cell • On custom worksheets: Paste 'Formulae and Formatting' from clipboard into selected cell
F2	Edit the active cell with cursor at end of the line
Alt+Enter	Start a new line in the same cell
Enter	Complete a cell entry and move down in the selection
Shift+Enter	Complete a cell entry and move up in the selection
Tab / Shift+Tab	Complete a cell entry and move to the right / to the left in the selection
Ctrl+d	Fill complete cell down (copy above cell)
Ctrl+r	Fill complete cell to the right (copy cell from the left)

Formatting (Custom Worksheets only)

Ctrl+b	Apply or remove bold formatting
Ctrl+i	Apply or remove italic formatting
Ctrl+u	Apply or remove an underline

Other

F1	Load the ARGUS EstateMaster DM Help File
F12	Load the ARGUS EstateMaster DM Preferences Form

4.6   Menus and Toolbars

There are 4 main menus and toolbars in the ARGUS EstateMaster DM application for the user:

1. The Ribbon Menu
2. The Quick Access Toolbar
3. The Application Menu
4. Sheet Context Menus
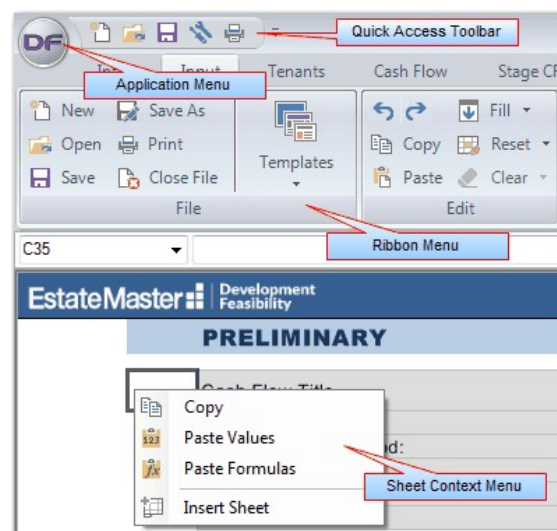
4.6.1   Ribbon Menu

The Ribbon Menu is located at the top of the application window and provides the user with the functions available in the program, and in particular, the functions related to specific sheets.
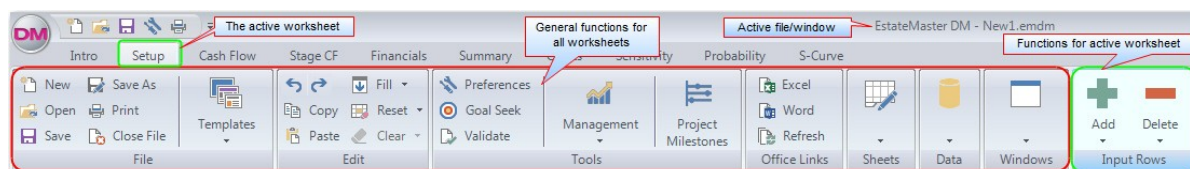
The Ribbon Menu has 2 definable parts:

1. Functions that apply to all worksheets:

   - These are common functions that can be used on all worksheet and are replicated on all worksheet tabs.

   - If any of these functions are greyed-out (disabled), then they are not applicable to the active worksheet.

2. Functions that apply to the currently selected worksheet:

   - These appear when a different tab/worksheet is selected.

   - They are identified by an aqua coloured menu button.

File Menu

New	Opens a ARGUS EstateMaster DM blank workbook in a new window..
Open	Prompts the user to opens an existing ARGUS EstateMaster DM data file (*.emdm) in a new window.
Save	Saves the current ARGUS EstateMaster DM model to a data file. 'Saving' a file is different to 'exporting' it to the ARGUS EstateMaster Enterprise Database.
Save As	Saves the current ARGUS EstateMaster DM model to a data file with a new file name.
Print	Loads the ARGUS EstateMaster DM Print Menu to allow the user to select what reports to print.
Close File	Closes the current ARGUS EstateMaster DM model window.
Templates	Create, use and edit ARGUS EstateMaster DM template files.

Edit Menu

Undo	Undo the last action.
Redo	Redo the last action.
Copy	Copy the select range to the clipboard.
Paste	Pastes the contents of the clipboard into the selected range. When the active sheet is standard sheet, then only values are pasted.
Fill	There are 3 options in this menu:

1. Fill Down: Copies the top cell of a selected range downwards.
2. Fill Right: Copies the left cell of a selected range rightwards.
3. Fill Series: Fills a series in a selected range based on a particular sequence of data.

Reset	This will clear all the inputs in the standard worksheets to the default. It will not remove user-inserted worksheets.
	In addition, the user can also reset any of the Budgets/Forecasts that have been set in the model.
Clear *	There are 3 options in this menu:

1. Clear All: Clears cell contents and formatting from the select range of cells.
2. Clear Formats: Clears cell formatting only from the select range of cells.
3. Clear Contents: Clears cell contents only from the select range of cells.

* These options are only available in user-inserted custom w orksheets.

Tools Menu

Preferences	Opens the form for the user to select their data Preferences. These should be set before any data is entered but can be changed at any time.
Goal Seek	This is an analysis feature that finds the value for a selected cell that would produce a given result from a calculation. Refer to 'Goal Seek' section for more information.
Validate	Runs the Data Validation process to check for data integrity issues (e.g. such as Circular References) caused by user's inputs.

Management	These are the main tools for managing the project cash flows such as rolling forward/back a time period, setting forecasts and updating the cash flow with accounting data.
Project Milestones	An interactive Microsoft Project-style Gantt Chart to control the timings of your costs and revenues across all Development (DF and DM) CashFlows in a Project.

Office Links Menu

Excel	Loads the dialog where you can create and edit links to external Excel files.
Word	Loads the dialog where you can create and edit links to external Word files.
Refresh	Updates the values for all linked Excel and Word files.

Sheets Menu

Add	Add a custom worksheet to the workbook.
Rename	Rename the currently selected custom worksheet.
Delete	Delete the currently selected custom worksheet.
Move	Rearrange the order of the custom worksheets.
Hide/Unhide	Change the visibility of the custom worksheets.
Tab Colour	Change the tab colour of the custom worksheets from the default.
Protect / Unprotect	Protect or unprotect the selected worksheet. When protecting, you will be prompted to enter in a password. If this is left blank, the the worksheet will still be protected, but with no password.)

Data Menu

Import Feasibility from DF	Create an Original Budget by importing a feasibility cash flow from an ARGUS EstateMaster DF (*.emdf) file.
Import from Database	Import ARGUS EstateMaster DM input data from the ARGUS EstateMaster Enterprise Database.
Export to Database	Export ARGUS EstateMaster DM input data to the ARGUS EstateMaster Enterprise Database. This is different to 'saving' an ARGUS EstateMaster DM datafile (*.emdm)
Export to Excel	Export the entire file to Excel, either as a standalone file or appended to an existing file.

Windows Menu

Zoom	Allows the user to set the zoom of the worksheets with the following options:

- **Default Zoom (Active Sheet)**: Resets the active sheet to the default zoom. The 'default zoom' is determined by the monitor size and resolution settings of the PC/Server running the application.
- **Default Zoom (All Sheets)**: Resets all worksheets to their default zoom.
- **Custom Zoom**: Allows the user to set their own zoom for the active worksheet. These settings are saved to the PC/Server that the ARGUS EstateMaster DM is installed on and will apply to all users running the application from that PC/Server.

Cascade / Tile / Minimize	Allows the user to change the layout of the windows.
File Listing	Displays a list of ARGUS EstateMaster DM files that are currently open and the user can switch to.

Customising the Ribbon Menu

- **To minimise the Ribbon**: Click on the arrow icon and select [Minimize the Ribbon], or double click on any of the menu tabs.
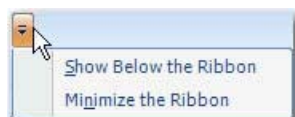
Once the Ribbon is minimised, it will only pop up when one of the tabs is selected, then hide again when deselected.

4.6.2 Quick Access Toolbar

The Quick Access Toolbar is located in the top-left corner of the application window and provides the user with shortcuts to the various functions available in the program.

By default, there are 5 functions that can be operated from this toolbar, however any button on the Ribbon menu can be added to it.

Customising the Quick Access Toolbar

- **To remove an item from the Toolbar**: Right click the icon and select [Remove from Quick Access Toolbar]

- **To add an item to the Toolbar**: Right click the icon in the Ribbon and select [Add to Quick Access Toolbar]

- **To move the Toolbar below or above the Ribbon**: Click on the arrow icon and select [Show Below/Above the Ribbon]

4.6.3 Application Menu

The Application Menu is located in the top-left corner of the application window (indicated by the ARGUS EstateMaster DM icon) and provides the user with access to the various File functions available in the program, as well as the application settings and the Help features.

Settings
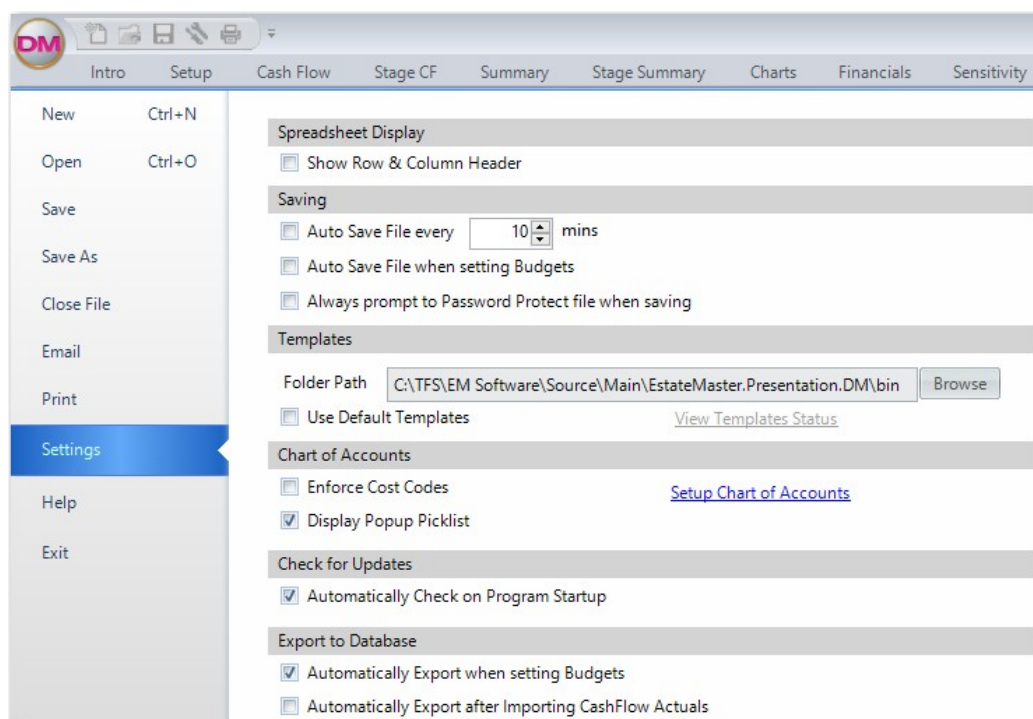
Spreadsheet Display	Hide or show the row and column headers on the standard worksheets. For custom worksheets, you can use the context menu to toggle the row and column headers on each one.
Saving	**Auto Save**
	Set the software to automatically save the active file every X minutes (minimum 5mins).
	• If there are multiple ARGUS EstateMaster DM files open in the application, the auto-save only applies to the file that is currently active.
	• If the user is performing a time-consuming task in the application (which coincides with a scheduled auto-save), the auto-save in that instance may be skipped.
	The application can also be set to automatically save the file when setting a Budget (Original, Project or Previous)
	Save with Password
	Select this option to always prompt the user to password protect data files when saving
Templates	**Folder Path**

Set the location where the application templates should be stored. By default when the application is run for the first time, this folder path will be set as *<directory where ARGUS EstateMaster DM is installed>*/Templates.

To change the location, click the 'Browse' button and select a new folder when prompted. Once it is changed, any templates that were stored in the original folder will need to be manually re-saved as templates in the new folder.

Use Default Templates

This indicates whether a template set as a 'default' is to be used when the application is started or when a new file is started.

Chart of Accounts

Enforce Cost Codes

This ensures that when a Cost Codes is edited for a line item item, it matches one that has been set up in the Chart of Accounts. This validation will occur when the user:

1. Manually edits a Cost Code in the input field.

   a. If the Cost Code being entered doesn't match, a warning message will appear and the user will have to fix the code or cancel the edit (ESC key).

2. Pastes a Cost Code into the input field from the clipboard.

   a. If one or more Cost Codes being pasted don't match, a warning message will appear and paste will be 'undone' (reverting to the original inputs)

Note: If the Chart of Accounts have not been configured yet, then this preference will be ignored and a 'Setup Chart of Accounts' link will appear, allowing the user to navigate the Chart of Accounts tab in the the Application Launchpad

Display Popup Picklist

This determines whether the 'Select Cost Codes' popup picklist automatically appears every time a 'Code' or 'Description' input field is selected.

Disabling it will not change the behaviour of 'Code' or 'Description' fields when they are manually updated by the user (e.g. if you manually type in a Code that exists in the Chart of Accounts list, the 'Description' input field will be automatically populated , and vice versa).

Check for Updates

Set the software to automatically check for updates over the internet every time it is started or not.

Export to Database

- **When Setting Budgets:** When setting a budget (Original, Project or Previous), set the software to automatically Export the data into the Enterprise Database (which requires the file to be saved first).

- **After Importing Actuals:** When importing actuals into the CashFlow using one of the in-built import methods, set the software to automatically Export the data into the Enterprise Database (which requires the file to be saved first).

   Note: If either of these options are selected, during the export process the Project Name/Number associated with the file will be validated to ensure that the same Project exists in the database. If there is any

inconsistency (i.e. the Project Name/Number on the file doesn't match that of a Project in the database), the user will be prompted to either append the file to another Project, or to create a new Project in the database. The option to 'Cancel' the export process will also be disabled.
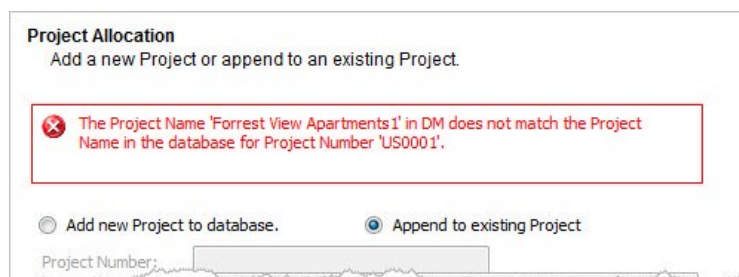
Help
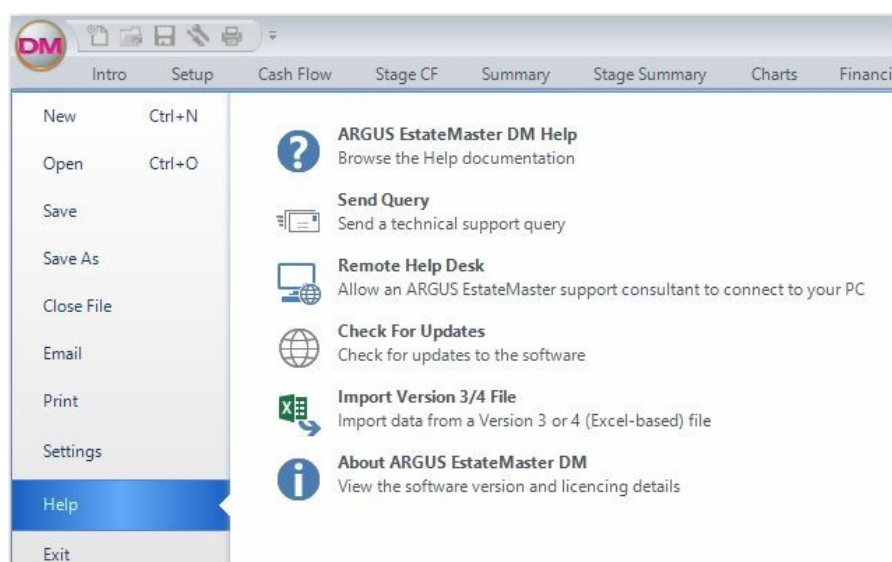
ARGUS EstateMaster DM Help	Opens the ARGUS EstateMaster DM Help program.
Send Query	Send a technical support query via email/internet
Remote Help Desk	Allow an ARGUS EstateMaster Support Officer to remotely connect to your PC/Server for troubleshooting and assistance. You must contact an ARGUS EstateMaster Support Officer before attempting any connection (Powered by TeamViewer).
Check for Updates	Check the latest version of the software online (requires internet connection).
Import Version 3/4 File	Import data from a version 3.xx or 4.xx file (Excel-based versions)
About ARGUS EstateMaster DM	Allows the user to view the current licence details and re-register an existing licence. It also lists what 'Integration Modules' are enabled for the current licence.

4.6.4 Sheet Context Menus

Context Menus pop up when clicking an item on the worksheet area, offering a list of options which vary depending on the item selected. These menus are invoked with a right-click of a mouse.

Standard Sheets

The context menu on the Standard sheets is invoked by right-clicking a cell, row or column.

Copy	Copies the currently selected range of cells to the clipboard.
Paste Values	Pastes the content of the clipboard (values only, not formulas or formatting) in the currently selected range.
Paste Formulas	Pastes the content of the clipboard (formulas only, no formatting) in the currently selected range.
Insert Comment	Prompts the user to enter a comment in the active cell. It is only enabled when certain cells are selected. Refer to Inputting Data for more information about Cell Comments.
Trace Precedents	Traces cells/ranges that provide data to the formula (precedents) of the active cell. It is only enabled if the active cell contains a formula. Refer to Formula Auditing for more information about Tracing Precedents.
Trace Errors	Traces the potential source of an error in a formula. It is only enabled if the active cell contains a formula which equates to an error. Refer to Formula Auditing for more information about Tracing Errors.

User Inserted Sheets

The context menu on the User Inserted sheets is invoked by right-clicking a cell, row or column.
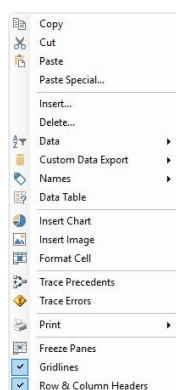
Copy	Copies the currently selected range of cells to the clipboard.
Cut	Cuts the currently selected range of cells to the clipboard.
Paste	Pastes the content of the clipboard in the currently selected range. When the active sheet is a standard sheet, then only values are pasted.
Paste Special	Allows the user to select what content from the clipboard (values, formatting, comments, etc) to paste in the currently selected range.
Insert ...	Inserts a column or row next to the currently selected range.
Delete ...	Deletes the currently selected column or row.
Data	**Sort Ascending/Descending:** Sorts the selected cells vertically. If there are multiple columns selected in the range, the user will be prompted to select which column to sort by.
	Apply Auto-Filter: Applies an auto-filter to the selected range. If an Auto-Filter already exists on the active sheet, then a 'Remove Filter' option will be available.
	Group/Ungroup: Group selected data by rows and columns using 'outlines'.
	Clear Outline: Clears all the outlines (groupings) on the active worksheet.
Custom Data Export	**Define:** Define a range of cells to be exported to the [Enterprise Database](#)
	Edit: Edit or delete existing Custom Data Export range names on the user-inserted sheet.
Names	**Define:** Define a local range name for the currently selected cells.
	Edit: Edit or delete existing range names on the user-inserted sheet.
Data Table	Insert a one-variable or two-variable data table that evaluates changing variables in a single formula. It is used for developing simple 'what-if' scenarios. It is set up similar to how Data Tables are configured in Microsoft Excel ([online tutorial](#))
	<u>Note</u>: When a Data Table is inserted, it will calculate in 'Semi Automatic' mode to ensure that all other background calculations are not adversely impacted. This means that a Data Table will not automatically calculate if a dependent variable changes; any time you require the results in the Data Table to be updated/refresh, you will need to press the F9 button.
Insert Chart	Insert a chart on the worksheet.
Insert Image	Insert an image (*.jpg, *.jpeg or *.bmp) on the worksheet.
Format Cell	Change the format of the currently selected range, including number format, font, borders, colour, conditional formats, etc.
Trace Precedents	Traces cells/ranges that provide data to the formula (precedents) of the active cell. It is only enabled if the active cell contains a formula. Refer to [Formula Auditing](#) for more information about Tracing Precedents.

Trace Errors		Traces the potential source of an error in a formula. It is only enabled if the active cell contains a formula which equates to an error. Refer to Formula Auditing for more information about Tracing Errors.
Print	**Set Print Area:**	Define what part of the worksheet to print by setting the currently selected range as the 'Print
	Page Setup:	Change the settings for how the page is to be printed, such as orientation, zoom, margins, headers, footers, etc.
	Print:	Print the active user-inserted sheet.
Freeze / Unfreeze Panes		Freeze panes at the selected row, column or cell, or unfreeze (clear) panes on the active sheet.
Gridlines		Toggle the gridlines on the active sheet.
Row & Column Headers		Toggle the row and column headers on the active sheet.

Charts
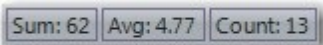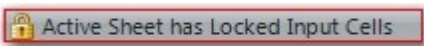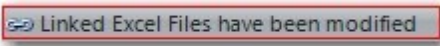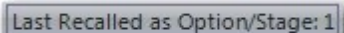
If you are right-clicking on any Chart, either or a Standard or custom sheet, you will be given the following options:
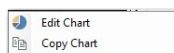
Edit Chart Copy Chart	**Edit Chart**	(Charts on custom sheets only) To edit the chart settings, including the source data, chart type, format, etc, either double click the chart or right-click on it and select 'Edit Chart' to load the Chart Explorer dialog.
	Copy Chart	Copies the selected chart to the clipboard as an image, so it can be pasted in other documents.

4.7   Status Bar

The Status Bar is located at the bottom of the application. It has the following definable parts:

1. **Statistics:** This part of the status bar provides a Sum, Average and Count of the currently selected cells (excludes text formatted cells). These update instantly.

    Sum: 62 Avg: 4.77 Count: 13

2. **Locked Cells Warning:** This part of the status bar provides a warning if any input cells on the currently active worksheet are locked via the 'Protection' Preferences. By clicking this button, it will load the Preferences so the user can see which input ranges have been locked.

    Active Sheet has Locked Input Cells

3. **Linked Excel Files Warning:** This part of the status bar provides a warning if an external Excel file that has 'incoming' links has been modified since the last 'refresh'. By clicking this button, it will refresh all the links.

    Linked Excel Files have been modified

4. **Options/Stages Status:** This part of the status bar alerts the user what the last Option/Stage was either recalled or stored as.

    Last Recalled as Option/Stage: 1

4.8 Dashboard

The dashboard, located on the right-side of the application in a collapsible panel, provides a summary of the key performance indicators of the Cash Flow, including Net Profit, Development Margin, NPV and IRR.

The results will automatically update when opening files, or switching between windows. Any other time, they can be updated by clicking on the left [Refresh] button.

Thresholds

Some of the KPIs have thresholds, where the result will be displayed in:

- red font if it is **below** the threshold,

- green font if it is **above** the threshold.

KPI	Threshold
Net Profit	0
Project NPV	0
NPV of Future Cash flows	0
Project IRR	Target IRR (Discount Rate)

4.9 Goal Seek

Goal Seek is sometimes called what-if analysis. When you know the desired result of a single formula but not the input value the formula needs to determine the result, you can use the Goal Seek feature available by clicking [⊙ Goal Seek] on the Ribbon Menu menu.

When goal seeking, the program varies the value in one specific cell until a formula that's dependent on that cell returns the result you want.

- **Set Cell:** The cell that contains the formula that you want to settle/resolve. That cell must always contain a formula or a function, not a value.

- **To Value:** The value you want the formula (in the Set Cell) to change to.

- **By Changing Cell:** The part of the formula that you wish to change. That cell must contain a value only, not a formula or function.

4.10 Resizing the Model

The ARGUS EstateMaster DM model can be resized in two areas:

1. Adding more time periods (45 to 480)

2. Adding more cost and revenue rows.

Resize Time Periods

Resizing the time periods is controlled via the the Preferences.

1. Go the Ribbon Menu and click on [Preferences] or just press F12.

2. Go to the 'Cash Flow Periods' tab.

3. Expand or reduce the number of time periods. Only add what you need as it will impact on the size of the file.

4. Click on OK and it will make the appropriate changes to the file.

Resize Cost/Revenue Rows

Resizing the input rows is controlled via the the Ribbon Menu when the Cash Flow sheet is selected.

Inserting Rows:

1. Select the row where you would like to add rows above.

2. Click on the Input Rows 'Add' button.

3. The program will then prompt how many rows you would like to insert - up to 50 at a time.

4. Click OK to the number, and the model will then resize.

Deleting Rows:

1. Highlight the rows that you would like to delete.

2. Click on the Input Rows 'Delete' button.

3. Click OK, and the model will then delete the selected rows.

4. If these rows have any budget/forecast data in them, either Original, Project, Previous or Current Forecast, it will not delete these rows.

4.11 Data Validation

A function has been provided that can run a validation check against the input data, checking for the following types issues:

1. **Circular References**, possibly caused by user-inserted formulas (Note: This test requires MS Excel to be installed on the machine).

The validation process will run across all standard ARGUS EstateMaster DM worksheets, as well user custom worksheets inserted by the user.

Running the Validation

By pressing the Run on the [Validate] button on the Ribbon Menu, the validation process is executed. If any issues are detected, the following Data Validator form will be displayed.

Issue	Sheet	Range	Cell Formula	Cell Value	Extra Info
Circular Reference	Stage Summary	E45	='Stage CF'!E2770	N/A	Timed Out (Took >
Circular Reference	Input	AE106	=IF(AND(TYPE(K106)=2,L106=0,COUNTIF(MilestoneItems_RowID,IF(X106,Y106,K1	3	
Circular Reference	Input	L106	=Projectend	3	
Circular Reference	CashFlow	G325	=G322-G324	-60606.0606060606	
Circular Reference	CashFlow	G322	=G182-G321	-60606.0606060606	
Circular Reference	CashFlow	G321	=G320+G308+G293+G291+G279+G267+G255+G238+G216+G198+G184+G30	60606.0606060606	
Circular Reference	CashFlow	G320	=-Calc!AB543	-6060.60606060606	

Revalidate   Close

Issue	Describes the type of issue detected (e.g. circular reference, etc)
Sheet / Range	The worksheet and the cell/range address that the issue has been found on.
Cell Formula	The formula in the related cell.
Cell Value	The calculated value in the related cell.

State	Describes the current state of that sheet/range (e.g. is it visible or hidden)
Extra Information	Additional information about the issue, such as:

- If the related cell/range is **hidden**, either by being located in a hidden column, row or worksheet, or hidden from view by a frozen pane (and therefore cannot be navigated to)

- If the related cell formula is **referencing an external Excel file** (i.e. using the Excel Links feature), it will display the path to that file.

- If there were any **errors** encountered while checking for Circular References, such as a Timeout or other issues related to Excel.

Circular Reference DetectionTimeout

When the validation process attempts to detect any circular reference issues, it may take a while to trace the formulas on a worksheet to identify where the circular reference occurs. By default, if it knows there is a circular reference on a worksheet, but cannot find the cell where it is located in, it will timeout after 60 seconds.
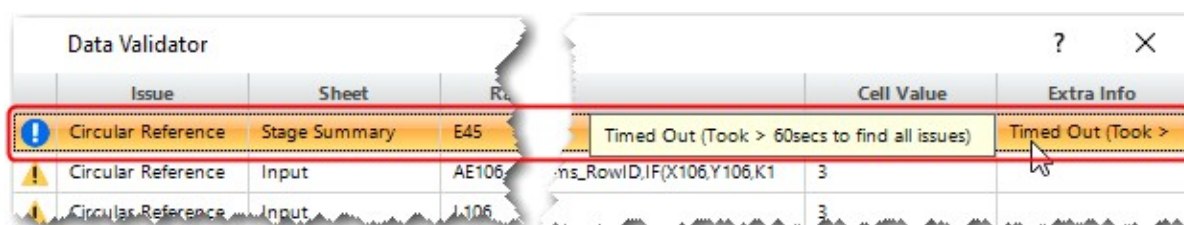
This timeout setting can be manually changed by editing the value for the `CircularReferenceTimeout` configuration (measured in seconds) found in the **EstateMasterDM.exe.config** file, located in the folder where the ARGUS EstateMaster DM application is installed.

Fixing Issues

To attempt to fix issues in the list, double-click a row and it will navigate you to to the related sheet/range. Attempt to fix each issue while the list is displayed, and then then press [Revalidate] button to run the checks again. If all issues have been rectified, the list will be cleared.

There are certain limitations where you cannot navigate to a cell/range:

- If it is hidden (i.e. located in a hidden column, row or worksheet, or hidden from view by a frozen pane)

- If it is located in an external Excel file.

Finding the Source of Circular Reference Issues

The results in the Data Validator list are an indication of where issues are located within the file. However, in relation to Circular Reference issues, each Range indicated in the list *may* not necessarily be the **cause** of the issue, but just be within the 'loop' of a circular reference. It is therefore recommended that you navigate to each Range in the list related to Circular References, and assess whether the formula in that range could possibly cause the issue.

The following are examples of Ranges that will most likely not be the cause of the circular reference, and therefore can be skipped:

- If the Range is a standard (and therefore locked) ARGUS EstateMaster DM calculation cell.

- If the location of the Range is in a hidden row or column that has not been intentionally hidden by the user via a software setting (e.g. via Cash Flow View Options).

The following are examples of Ranges that have a higher probability of being the cause of the circular reference (because they contain formulas created by the user), and therefore should be closely examined:

- If the Range is standard input field (i.e, blue, purple or green font inputs) that contains a formula entered by the user.

- If the Range is a formula cell located on a custom worksheet.

Any easy way to determine if a Range is the cause of a circular reference, is to simply replace the formula in the cell with a value, and click the [Revalidate] button; if that was the cause of the issue, then no issues will be reported. However if circular reference issues still persist, you will need to repeat the process until no further issues are found. You will then need to determine whether you wish to create a modified formula that avoids a circular reference, or just keep a 'value' in the cell.

4.12 Formula Auditing

The following tools are available in ARGUS EstateMaster DM to help you audit formulas, be it the default ones in the application, or custom ones that the user creates:

- **Trace Precedents:** This function displays the relationships between a formula and the cells that provide data to it (i.e. its precedents). It is a useful tool for checking formulas for accuracy or finding the source of an error.

- **Trace Errors:** This function displays the source(s) of an error in the formula.

The above tools are available in the Sheet Context Menus when you right-click a cell, and are enabled if that cell contains a formula and/or error.
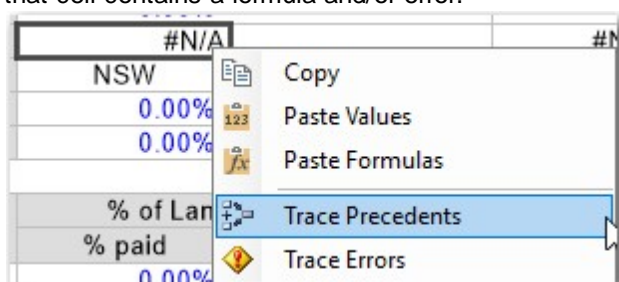
4.12.1 Trace Precedents

When any cell containing formula is selected (default application formula, or user-inserted custom formula), a 'Trace Precedents' option will appear in the right-click Context Menu.
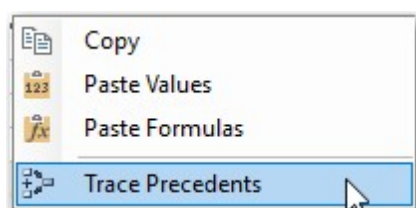
By selecting 'Trace Precedents', the following form will be displayed:

Sheet	Range	Cell Formula	Cell Value	Extra Info
Summary	$K$124	=SUMIF($E$122:$I$122,K$122,$E124:$I124)	77247511.3777	
Summary	$J$124	=SUMIF($E$122:$I$122,J$122,$E124:$I124)	0	
Input	Import_1452	0	0	
Summary	$K$129	=IF(K130=0,"N.A.",-IF(Import_59=1,K$130/$AA$26*term,-((-K$130/$AA$26+1)^term-1)))	0.0001110745148581	
Input	EnableFinancials	FALSE	False	*Row Hidden*
Financials	$D$155	=IF(C154=0,0,C156/C154)	0	*Pane Hidden*

Sheet   The worksheet where the precedent cell/range is located.

Range   The precedent cell address, or range name.

- If the formula being traced contains a multi-cell Named Range (i.e. a defined name for a group of cells), then every individual cell within that Named Range will be listed separately, and the Named Range it belongs to will be indicated in the 'Extra Info' column.

Cell Formula   The formula in the precedent cell/range.

- If the cell has a hard-coded value, and not a formula, then the value of that cell will be displayed.

Cell Value   The calculated/inputted value in the precedent cell/range.

Extra Info   Additional information about the precedent, such as:

- If the related cell/range is **hidden**, either by being located in a hidden column, row or worksheet, or hidden from view by a frozen pane (and therefore cannot be navigated to)

- If the related cell/range is **part of a multi-cell Named Range**, it will display that Named Range.

- If the related cell formula is **referencing an external Excel file** (i.e. using the [Excel Links](#) feature), it will display the path to that file.

Navigating to a Precedent

To navigate to a precedent cell/range, just double-click it in the list provided in the form, and the related cell/range will be activated in the background.

There are certain limitations where you cannot navigate to a cell/range:

- If it is hidden (i.e. located in a hidden column, row or worksheet, or hidden from view by a frozen pane).

- If it is located in an external Excel file.

4.12.2 Trace Errors

When any cell containing an erroneous formula is selected (default application formula, or user-inserted custom formula), a 'Trace Errors' option will appear in the right-click Context Menu.
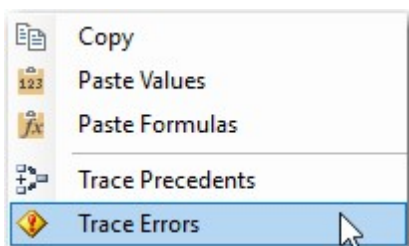
By selecting 'Trace Errors', it will trace the precedents of the selected formula and attempt to find the source of the error. If it cannot find any errors with the direct precedents, it will then search through the next level of precedents, and so on, until it finds the possible source.

If it successfully finds the source of the errors, the following form will be then displayed:

Sheet	The worksheet where the erroneous cell/range is located.
Range	The erroneous cell/range address, or range name.
Cell Formula	The formula in the erroneous cell/range.
Cell Value	The calculated/inputted value in the erroneous cell/range (if it is a single-cell range)
Extra Info	Additional information about the erroneous cell/range, such as:

> - If the related cell/range is **hidden**, either by being located in a hidden column, row or worksheet, or hidden from view by a frozen pane (and therefore cannot be navigated to)
>
> - If the related cell formula is **referencing an external Excel file** (i.e. using the Excel Links feature), it will display the path to that file.

Unable to find the Error

If it cannot find the possible source of the error within 100 levels of precedents (an acceptable level before application performance may be affected), it will stop attempting to trace the error and show this message in the form.

		Extra Info
The Maximum Recursion Limit has been reached. Please try a different cell		The Maximum Recursion Limit has bee
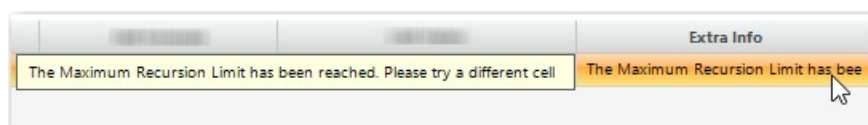
If this occurs, it is recommended to try tracing the error on different erroneous formulas cells on different worksheets, in particular ones where data entry is conducted.

Navigating to an Error

To navigate to a error cell/range, just double-click it in the list provided in the form, and the related cell/range will be activated in the background.

There are certain limitations where you cannot navigate to a cell/range:

- If it is hidden (i.e. located in a hidden column, row or worksheet, or hidden from view by a frozen pane)

- If it is located in an external Excel file.

Fixing Errors

To attempt to fix an error, navigate to each erroneous cell/range displayed in the list and modify it's formula until it no longer generates an error (e.g. #DIV/0!, #REF!, #VALUE!, etc). Once those issues have been resolved, go back to the original cell that was selected and check if it is still calculating an error:

- If it doesn't, then the formula(s) that were modified were the only cause of the error.

- If it does, then there could be other cells along the precedent chain that may be contributing to the error. Therefore, just run the 'Trace Error' on the same cell again, and review/fix the new results it will display. Repeat the process until the original cell no longer is displaying an error.

4.13   Emailing Files

The program has inbuilt emailing functionality to allow you to email files without having to save them and then attach them manually to an email message. No other email software (such as Outlook, Lotus Notes, etc) is required, only an internet connection and valid SMTP (Simple Mail Transfer Protocol) settings.

The email function is found in the Application Menu.

Close File
Email
Print
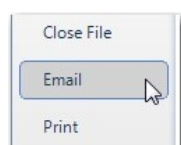
When 'Email' is clicked, it may first prompt you to save your file (if there have been any changes to your file since the last save). Once the file is saved, it will load a form where the user can enter the following information (* denotes mandatory fields):

- **TO*** email address(s): You can enter multiple email address in this field, separated by a '**;**' semi-colon (e.g john@email.com; pete@email.com)

- **FROM*** email address. Only one email address can be entered here. This is also the email address that the recipient can reply to.

- **SUBJECT*** of the email.

- **MESSAGE** text for the body of the email.

You will notice that the data file is already attached to the email message.

Before any files can be emailed through this feature, the SMTP settings must be configured. This is done by clicking on the 'Settings' button and entering in the following information:

- **SMTP Server**: Your SMTP server name (e.g. smtp.yourISP.com)

- **Port**: The TCP (Transmission Control Protocol) port that the SMTP server uses. This is usually port 25.

- **Encrypted Connection**: Select this if your SMTP server name uses a SSL (Secure Sockets Layer) connection.

- **Use Default Credentials**: Specifies whether the default user credentials should be used to access the SMTP mail server. If it is not selected, then the you must enter in a username and password.

- **Username**: The user name to use for authentication to the SMTP mail server.

- **Password**: The password to use for authentication to the SMTP mail server.

Please note:

- These settings are application and machine specific, therefore you will need to configure them for each ARGUS EstateMaster application installed on a PC/Server, and each PC/Server that has the software installed.

- If you do not know your SMTP settings, please consult your IT Administrators or your Internet Service Provider.

Once these settings have been configured, the software is ready to email files. When the 'Send' button is clicked, it will validate the email address(es) and the SMTP settings you have entered.

- If the email was successfully sent, a message will appear to inform you.

- If there was any error in trying to send the file, a message like this may appear: If you receive an error, please consult your IT Administrator to verify that the SMTP settings have been entered correctly or to use an alternative SMTP server.

4.14   Exporting to Excel

Since ARGUS EstateMaster DM is built on a spreadsheet user interface, you can export the entire file to Excel, allowing you use that file and its data in any way you require. To export the file, go to the Ribbon Menu and click on [Data] ➜ [Export to Excel] and you will be given the option to either:

- o Export it as a New Excel File, or

- o Append it to an Existing Excel File

Export Options
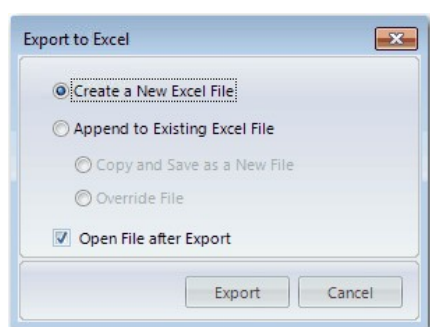
Create a New Excel File

When an ARGUS EstateMaster DM file is exported to a new Excel file:

- You will be promoted to save the file in Excel 2007+ compatible format (*xlsx or *.xlsm).

- The file is exported as values only and contain no formulas (except on custom add-on worksheets, where custom formulas are kept intact), so changing inputs in an exported file will not impact on the results.

Append to Existing Excel File

When an ARGUS EstateMaster DM file is appended to an existing Excel file:

- You will be given the option to copy the existing Excel file and save it is a new one (useful when working with templates), or override the file being selected.

- You will be promoted to select which Excel 2007+ compatible file (*xlsx or *.xlsm) to append the ARGUS EstateMaster DM worksheets to.

- The ARGUS EstateMaster DM worksheets are exported as values only and contain no formulas (including on custom add-on worksheets)

- Some features that are not completely supported by this spreadsheet interface used by ARGUS EstateMaster DM may be stripped from the selected Excel file after appending to it, and saving it. These features include, but not limited to, items such as:

  - o Form/ActiveX Controls

  - o Pivot Tables & Charts

  - o Cell Comments

  - o Cell Gradients

  - o Excel 2007-style Tables and Structured References

  - o OLE objects (Camera, Embedded Documents, etc)

- o Shape fill effects and shadows

- o Worksheet Protection Access Options

Command Line Automation

ARGUS EstateMaster DM supports exporting to Excel via the Windows command line, using the **ExportFile** command.

The command utilises the following switches and parameters:

Switch and Parameter	Required	Description	Example
/F: *DataFile*	✔	• The path to the ARGUS EstateMaster DM data file (emdm) to export. • <u>Note</u>: If the path contains spaces, it should be enclosed in double quotes.	/F: "C:\MyData\SampleFile.emdf"
/P: *Password*		• The password required to open the data file (if applicable) • <u>Note</u>: If the password contains spaces, it should be enclosed in double quotes.	/P "password1"
/E: *ExcelFile*		• The path of the output Excel file (*.xlsx) • If this switch is not used, the Excel file will be given the same file name and saved to the same directory as the selected data file.	/E: "C:\Users\Guest\Desktop\SampleFile.xlsx"

/M:		• Determines whether a newer version of the Project Milestone should be retrieved from the EstateMaster Database (if available) when the data file is open. It is only applicable if:
		  o <u>Project Milestones</u> have been used in the selected data file, and
		  o ARGUS EstateMaster DM is currently connected to the Enterprise Database.
		• If this switch is not used, it will use the Project Milestone Profile that was last saved with the data file.
			/M:

<u>Example</u>

- Exporting the current set of data for a file with no password:

```
C:\Program Files\Estate Master\DM7\EstateMasterDM.exe ExportFile /F: "C:
\MyData\SampleFile.emdm" /E: "C:\Users\Guest\Desktop\SampleFile.xlsx"
```

- Exporting the current set of data for a file a password:
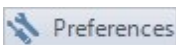
```
C:\Program Files\Estate Master\DM7\EstateMasterDM.exe ExportFile /F: "C:
\MyData\SampleFile.emdm" /E: "C:\Users\Guest\Desktop\SampleFile.xlsx" /P
"password1"
```

Part

V
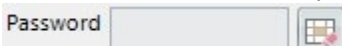
5   Preferences

The program allows flexibility by the way of user preferences. These are operated by:

1. Clicking on [Preferences] [Preferences] on the Ribbon Menu or Quick Access Toolbar,

2. Pressing the [F12] key.
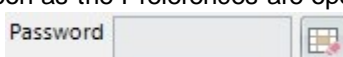
Locking Preferences

Each preference can be individually set and locked with password protection, allowing the user to standardise settings and minimise the risk of incorrectly changing them.

To Lock a Preference
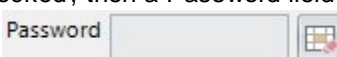
1. Set the preference and then click on the [ ] button located to the right of it.

2. It will the be shown as 'locked' [ ] and the selected preference will then be disabled.

3. A Password field will be displayed at the bottom on the Preferences form.

   Password [   ] [ ]

4. The user must enter in a password before they can click 'OK' and save their changes.

To unlock a Preference

1. As soon as the Preferences are open, a Password field will be displayed at the bottom on the form. Password [   ] [ ]

2. The user must enter in a password before they can unlock any Preference.

3. Go to the preference and then click on the [ ] button located to the right of it.

4. It will the be shown as 'unlocked' [ ] and the selected preference can then be changed by the user.

To Reset the Password

Once a password has been used to lock the Preferences, the same password will remain with that file and will be used for any future locking/unlocking until it is reset by the user. To reset the password:

1. As soon as the Preferences are open, if any Preferences were 'locked', then a Password field with a 'Reset' button will be displayed at the bottom on the form Password [   ] [ ]

2. Enter in the current password and click on the [ ] button.

3. The current password on the Preferences will then be cleared, and a new password must be then set.

Printing an Assumptions Report

To check what preferences and settings have been defined in the model, an Assumptions Report is available to be printed from the Print Menu

5.1 General

5.1.1 Regional Settings

Currency	Set the currency format. This is important if the ARGUS EstateMaster CC software is used to consolidate cash flows that are based on different currencies.

Taxation Format	Set the taxation format to be used in the model:

- **GST (Goods and Services):** A consumption (as opposed to income) tax levied on the purchases of goods and services. GST can be applied to all costs and revenues in the program

- **VAT (Value Added Tax):** Similar to GST, however there is no option to adopt the Margin Scheme when this option is applied.

- **Sales Tax:** This is a tax applied to end sales only. Not tax is applied to costs in the program when this option is selected.

If 'Nil Tax' is selected, then the tax inputs are hidden.

Stamp Duty	Stamp duty is automated based upon the location you select, and whether it is calculated on the land price including or excluding tax. The rates used to calculate duties can be changed in the 'Taxes & Duties' sheet.

Input Number Formats	Select the number of decimal places for the input cells.

5.1.2 Cash Flow Periods

Cash Flow Rest Period	Nominate the rest periods for the cash flow. This option will determine how the Start and Span dates are to be entered and how the cash flow will be displayed.

Important Notes:

- If the model has been rolled forward past period 0 (zero), it is assumed that the project has started, and this preference will therefore be locked to maintain the integrity of any historical data. If the rest periods must be changed, then the model must be rolled back to period 0 before that change can occur.

- Changing the rest period after you have started a model will not affect any existing values for Start and Span dates for individual cost and revenue items. For example, say you change 'Monthly' rests to 'Quarterly' rests - a cost item that started Month 4 and spanned 3 months will now start Quarter 4 and span 3 quarters, so it will need to be manually updated by the user to start Quarter 1 and span 1 quarter.

Resize Time Periods	Increase or decrease the number of timer periods in the model to suit user preference (45 to 480).
Financial Year End Month	Select what month is to represent the end of Financial Year. This is used for the setting of Escalation Tables and for Financial reporting.

5.1.3 Spreadsheet Display

Input Sheets and Report Sheets to Display   Select the worksheets which are to be displayed. Deselect to hide worksheets that you are not working on or do not intend to display making navigation around the workbook a little easier. Hiding sheets does not impede in the operation of the program

Input Field Width   Select the preferred field width setting for the 'Cost Code' and 'Stage' inputs. The field width can either be:

- Default size

- Large size (200% of default size)

5.1.4   Disclaimer

Disclaimer on Title Page

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Donec quam felis, ultricies nec, pellentesque eu, pretium quis, sem. Nulla consequat massa quis enim. Donec pede justo, fringilla vel, aliquet nec, vulputate eget, arcu.In enim justo, rhoncus ut, imperdiet a, venenatis vitae, justo. Nullam dictum felis eu pede mollis pretium. Integer tincidunt. Cras dapibus. Vivamus elementum semper nisi. Aenean vulputate eleifend tellus. Aenean leo ligula, porttitor eu, consequat vitae, eleifend ac, enim. Aliquam lorem ante, dapibus in, viverra quis, feugiat a, tellus.Phasellus viverra nulla ut metus varius laoreet. Quisque rutrum. Aenean imperdiet. Etiam ultricies nisi vel augue. Curabitur ullamcorper ultricies nisi. Nam eget dui. Etiam rhoncus. Maecenas tempus, tellus eget condimentum rhoncus, sem quam semper libero, sit amet adipiscing sem neque sed ipsum. Nam quam nunc, blandit vel, luctus pulvinar, hendrerit id, lorem. Maecenas nec odio et ante tincidunt tempus. Donec vitae sapien ut libero venenatis faucibus. Nullam quis ante. Etiam sit amet orci eget eros faucibus tincidunt. Duis leo. Sed fringilla mauris sit amet nibh. Donec sodales sagittis magna. Sed consequat, leo eget bibendum sodales, augue velit cursus nunc,

Max 2500 characters

Disclaimer on Title Page   Enter the text, if applicable, for any disclaimer to be displayed on the Title page. The maximum characters allowed are 2,500.

5.1.5   Logos
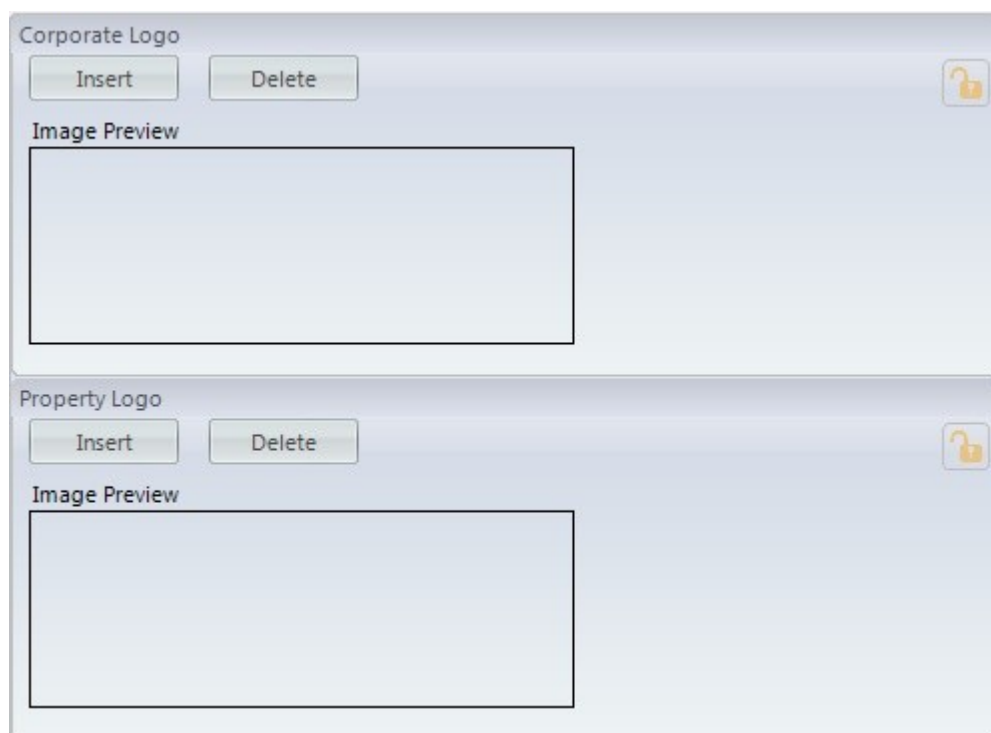
| **Corporate Logo** and **Property Photo** | Insert your own corporate logo on the report sheets and Title Page and insert a photo/image of the subject property/project on the Intro tab and Title Page |

- Only jpeg and bmp files can be inserted.

- There are no file/image size restrictions.

- The program will automatically downscale the image if it is too large to fit in the allocated area.

- If the image is smaller than the allocated, it will not be upscaled to avoid distortion.

5.1.6 Protection

Insert/Delete Input Rows			
☑ Allow user to Insert or Delete cost and revenue input rows			🔓

Input Cell Protection			

Lock	Description	Sheet	
☐	Project Introduction	Intro	
☐	Preliminary Inputs	Input	
☐	Tax (GST/VAT) Settings	Input	
☐	Cost Escalation Table	Input	
☐	Sales and Rental Revenue Escalation Table	Input	
☐	Sales Commission and Interest on Deposits	Input	
☐	Financing (Equity and Debt)	Input	
☐	Project Hurdle Rates	Input	
☐	Consolidated Holding Discount Rate	Consolidate	
☐	Codes	Input-Tenants	
☐	Stages	Input-Tenants	
☐	Headings and Descriptions	Input-Tenants	
☐	Percentage Inputs	Input	

Insert/Delete Input Rows	Enable the user to insert/delete rows on the Cash Flow sheet.
Input Cell Protection	This allows you to Lock various input cells throughout the program. Once this is done, the input cell will change to a 'black' font and a warning will appear on the status bar to indicate the active sheet has locked input cells.
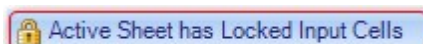
**Warning on Status Bar - clicking this
warning will load the Preferences**

This is helpful if you wish to standardise the inputs and create a template.

5.2 Calculations

5.2.1 Escalation

Cost and Sales Escalation Method		
Monthly Compounded Escalation ▼		🔓
Based on	Cashflow Period Years ▼	

Escalation Method	Select how the escalation on Costs and Revenue (exc Rent Review Escalation) in the model operates.
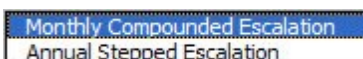
Escalation can either be applied on a:

- *Period* **Compounded Escalation** basis

  For example, if 5% is entered in for a particular year in the escalation table, this then equates to approx 0.41% per month (if using monthly rest periods), and each cost/revenue occurring in each month for that year, is escalated by 0.41% compounded.

- **Annual Stepped Escalation** basis (e.g. 5% per month if using monthly rest periods).

  For example, if 5% is entered in for a particular year in the escalation table, then each cost/revenue occurring in each period for that year, is escalated by 5%.

The Escalation tables on the Input can also be set up in one of two ways:

Cashflow Period Years
Financial Years

- **Cash Flow Period Years:** This option is where the model assumes that the annual escalation rates are defined by the Project Start Date month, and starts on that date.

  For example, if Date of First Period (Project Start) is Jan-2007, then Escalation Table starts from Jan-2007.

- **Based on Financial Years:** This option is where the model assumes that the annual escalation rates are defined by the Financial Year End month, and commences from the start of the Financial Year that the project is starting in.

  For example, if Date of First Period (Project Start) is Jan-2007 and Financial Year End is June, then Escalation Table starts from Jul-2006.

5.2.2   Project Costs

Development Management Fee

Based On: % of Project Costs (exc Land, Finance & Tax)

Dept. Natural Resources Fees

Based on: % of Construction Costs (exc Tax)

Miscellaneous Costs

Based on: % of Gross Sale Revenue

Landscaping

Based on: % of Net Sale Revenue (exc Selling Costs)

Sales Commissions

Based on: % of Gross Sale Values (including Tax)

☑ Report Pre-Sale Commissions as a Project Cost

Development Management Fee	The Development Management Fee can be expressed as a percentage of:

- **Gross Sales Revenue:** Includes items included in the Sales input section and Capitalised Sales from the Rental Income section. Is inclusive of any GST/VAT/Sales Tax if applicable.

- **Net Sale Revenue:** Gross Sales less Selling Costs

- **Project Costs including Land**

- **Project Costs excluding Land**

Project Costs exclude: Selling Costs (except PreSale Commissions reported as a Project Cost), Leasing Costs, Finance Costs (inc Interest and Fees) and GST/VAT if applicable.

Miscellaneous Costs	If entering any cost in the 'Miscellaneous' sections as a percentage, the percentage basis can be different for each Miscellaneous Cost section:

- **Construction Costs (exc Tax):** Construction costs including contingency, but excluding GST/VAT if applicable.

- **Gross Sale Revenue:** Gross Sales Revenue includes items included in the Sales input section and Capitalised Sales from the Rental Income section. They are inclusive of any GST/VAT/Sales Tax if applicable, but exclusive of any GST that is being withheld by the purchaser (only relevant if the 'GST' Taxation Format is selected in the Preferences)

- **Net Sale Revenue (exc Selling Costs):** Gross Sales Revenue *less* Selling Costs.
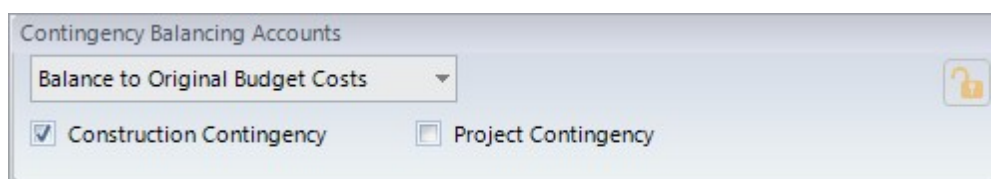
Sales Commissions	Sales Commissions can be expressed as a percentage of:

- **Gross Sales (inclusive of Tax)**: Sales Proceeds including GST/VAT/Sales Tax

- **Net Sales (exclusive of Tax)**: Sales Proceeds excluding GST/VAT/Sales Tax

Reporting Pre-Sale Commissions as Project Cost
Tick the checkbox if you wish to report all Pre-Sale Commissions (those incurred at time of Exchange) as a Project Costs (as opposed to a negative Revenue). This will impact how the Development Margin is reported, and where other cost items are a % of Project Costs.

5.2.3 Contingencies

Contingency Balancing Accounts	By default, the Construction and Project Contingencies operate like any other project cost in the application and are not automatically drawn upon as required. If there are any cost overruns in the project,

you therefore have two options on using the budgeted funds in these Contingencies:

1. Do a [Budget Transfer](): This feature allows you to manually transfer an amount from one input section/row (e.g. one of the Contingencies) to another section/row on the 'Cash Flow' sheet (i.e. a cost that has exceeded its budget).

2. Use this preference to set either or both Contingencies as a 'Balancing Account'. This feature allows you to set a fixed budget amount for Construction and/or Project Costs, and then have the Contingencies act as a 'Balancing' Account that will automatically reduce when such costs increase.

   The fixed budget amounts can either be based on the:

   - **Original Budget** Construction and/or Project Costs, or

   - **Project Budget** Construction and/or Project Costs.

   Once the selected Budget has been selected, the checkbox option for each Contingency will be enabled. When you select one to use as a Balancing Account, the following will occur:

   - The Contingency Fixed Amount input is set to the same value as the 'Current Forecast amount.

   - The Contingency % Percentage input is set to zero and greyed out (and therefore ignored).

   - Any cost increases will cause the related contingency to reduce by the same amount.

   - If cost increases exceed the budgeted contingency, the contingency account will go into negative and be highlighted red. A warning will also be displayed to the user when saving the file.

   Important Note: If both Construction and Project Contingency is selected as a Balancing Account, then any increases in Construction Costs will first be drawn from Construction Contingency account, until it reaches zero, with the remaining increases being then drawn from Project Contingency account.

   If this preference is left to the default 'No Balancing' option, then when the Original Budget or Project Budget is set, you will be prompted at that point to set both contingencies as Balancing Accounts against that Budget.

Contingnecy Balancing Account

Would you like to set Construction and Project Contingencies to a fixed amount, and automatically balance them to Original Budget Costs moving forward?

5.2.4 Revenue Collection Profile

Sales Revenue Collection Profile
Based on specific Months in Cash Flow
☐ Continue Collecting Post Settlement

Release from Escrow
Linked to Construction Start
☑ Limited to Cumulative Construction Costs

Sales Revenue Collection Profile

This option allows you to decide how the instalment milestones for the Sales Revenue Collection Profile are defined. They can either be base on:

- **Specific Time Periods in Cash Flow**: Where you can define a time period (e.g Month 6, Month, 12, etc) or a Milestone ID (e.g. M1, M2, etc) to indicate when revenue is collected.

Profile Code	1
Specific Months in Cash Flow	
M2	5.00%
M3	5.00%
6	10.00%
8	10.00%
10	10.00%
0	

- **Periods after Date of Exchange**: A certain number of months after the Date of Exchange for each sale item.

Profile Code	1
Months after Date of Exchange	
2	5.00%
4	5.00%
6	10.00%
8	10.00%
10	10.00%
0	

If Sales Revenue Collection Profiles are not required, there is an option to 'disable' it.

Based on specific Months in Cash Flow
Based on Months after Date of Exchange
Disable

Continue Collecting Post Settlement

By default, revenue collection using this function occurs between Pre-Sale Exchange and Settlement Dates for each sales revenue item, as defined in the Sales and Capitalised Sales input sections. Therefore any instalment milestone that extends beyond a Settlement Date for a sales revenue item, will be ignored, and the remaining balance will be collected at that Settlement Date.

If you wish to continue collecting revenue beyond the defined Settlement Dates for all sales revenue items, then enable this option.

☑ Continue Collecting Post Settlement

When this is enabled:

- The instalment % inputs for each Sales Revenue Collection Profile must total to 100%. If they don't, a warning will appear, because the cash flow will be excluding the balance (which would have normally been collected automatically at the defined Settlement Dates).

- The Handovers in the Stock Summary will still display that the sales 'settled' at the defined Settlement Dates.

Release from Escrow

This stipulates when to release sales revenue that is collected via the 'Revenue Collection Profile' instalments, which can either be:

- **On Receipt of Instalment**: Revenue is collected in the cash flow at the defined instalment milestones, as long as those milestones are:

  o After the Pre-Sale Exchange Date for a Sales item.

  o Before the Settlement Date for a Sales item (if the 'Continue Collecting Post Settlement' option is disabled)

- **Linked to Construction Start**: Revenue collection is potentially delayed based on the number of time periods (e.g Months) after Construction Start (i.e. the earliest construction cost). When this option is selected, a new set of inputs appear at the bottom of the Sales Revenue Collection Profile input table.

Limited to Cumulative Construction Costs

If the 'Linked to Construction Start' option is selected, by default, revenue is released as per the revenue instalments, but no earlier than the number of periods form the Construction Start.

Alternatively, if you wish to stipulate that the release from escrow is limited to the *cumulative* construction costs, then enable this option.

5.2.5 Hurdle Rates

Discount Rates Annual to Rest Period Conversion

per annum Nominal

IRR and NPV Calculation

includes financing costs but excludes interest and corp tax.

Development Margin Calculations

on total development costs (inc selling costs).

Gross or Net Profit Performance

Based on Net Development Profit (After Profit Share)

Discount Rate Conversion

This enables you to select the method of conversion from the annual discount rate (that is entered by the user) to the periodic discount rate (monthly, quarterly or half yearly depending upon the rest period you selected). The difference is given in the following formulae:

Nominal Conversion	D/T
Effective Conversion	$[(D + 1)^{1/T}]-1$

Where:
D = is the annual discount rate.
T = The number of rest periods per annum (i.e Monthly = 12, Quarterly = 4, Half Yearly = 2)

Note:

- It is imperative that a universal usage for the conversion of the discount rate be adopted for all evaluations.

- The first formula simply divides the annual discount rate by 12 while the second formula is the effective conversion and takes into account the compounding on a monthly, quarterly, half yearly basis depending on the cash flow being modelled.

- The choice between these two methods of conversion only affects the NPV and IRR calculation - not the development margin.

IRR and NPV Calculation

Nominate if Finance Costs, Interest Charges or Corporate Tax are to be included in the calculation of the Project IRR and NPV.

excludes all financing costs, interest and corp tax.

includes financing costs but excludes interest and corp tax.

includes all financing costs and interest but excludes corp tax.

includes all financing costs, interest and corp tax.

includes corporate tax but excludes financing costs and interest.

- **Financing Costs** = Cost defined in the 'Financing Costs' section and Fees (e.g Application, Line and Standby) associated for each loan.

- **Interest** = Interest charged on equity or the loan facilities.

- **Corp Tax** = Corporate Tax on project profit that is applied on the Financials sheet (as opposed to GST/VAT/Sales Tax)

The options that **include interest** are generally not recommended as discounting an after interest cash flow is a form of double-counting interest cost.

Development Margin Calculation

Nominate what forms the basis of calculating the Development Margin.

> on total development costs (inc selling and leasing costs).
> on total development costs (inc selling costs).
> on total development costs (net of selling and leasing costs).
> on total revenue (net of GST).
> on total sales proceeds (net of selling costs and GST).

The following defines the exact components of the Summary Report that are used in the calculation of each option:

- **Development Costs (inc Selling and Leasing Costs)** = 'Total Costs' *plus* 'Selling Costs' and 'Purchasers Costs'

- **Development Costs (inc Selling Costs)** = 'Total Costs' (exc GST/VAT reclaims on any Leasing Costs) *plus* 'Selling Costs' and 'Purchasers Costs'

- **Development Costs (net of Selling and Leasing Costs)** = 'Total Costs' (exc GST/VAT reclaims on any 'Selling and Leasing Costs')

- **Total Revenue net of GST/VAT/Sales Tax** = 'Total Sales Revenue' *plus* 'Rental Income' *plus* 'Interest Received' *plus* 'Other Income' *less* 'GST/VAT/Sales Tax Paid'

- **Total Sales Proceeds (net of Selling Costs and GST/VAT/Sales Tax)** = 'Net Sales Proceeds' *less* 'GST/VAT/Sales Tax Paid' on Sales only (not Rental or Other Income)

Gross or Net Profit Performance

Determines how any Profit Share that is paid to other parties (Land Owner or Lenders) are treated in the calculation of various performance indicators. This is only relevant if the profit share to land owner and/or profit share to mezzanine lender.

> Based on Gross Development Profit (Before Profit Share)
> Based on Net Development Profit (After Profit Share)

This will impact the calculations for Development Margin, NPV, IRR, Sensitivity and Probability Analysis.

5.2.6 Stage Cash Flow

Global Cost Allocation Method This enables you to select how the Global Costs are apportioned to a Stage's cashflow.

- **As per Global Costs Cash Flow:** The global costs are apportioned to the Stage as-is, based on the time period they are to be spent/received.

- **Upfront at start of Stage:** The global costs allocated to that Stage as a lump sum amount at the commencement of the Stage (i.e. the time period in the 'Net Cash Flow Pre Allocation' line for the Stage where the first activity occurs)

- **Spread evenly over Stage:** The global costs allocated to that Stage are spread evenly over the Stage duration (i.e. the duration of the 'Net Cash Flow Pre Allocation' for the Stage)

- **Upfront at start of Stage Construction phase:** The global costs allocated to that Stage as a lump sum amount at the commencement of the Construction phase for that Stage (i.e. the time period in the 'Construction Costs (exc Contingency)' line for the Stage where the first activity occurs)

- **Spread evenly over Stage Construction phase:** The global costs allocated to that Stage are spread evenly over the Construction phase for that Stage (i.e. the duration of the 'Construction Costs (exc Contingency)' for the Stage)

Stage IRR/NPV Calculation   Nominate at what point the IRR and NPV calculations for each Stage are to be calculated from:

- Calculate from Start of Project

- Calculate from Start of Stage NCF (After Allocation)

5.3   Taxation

5.3.1   Tax Type

Tax Rate Type

GST (Goods and Services Tax) Single Rate ▼	🔒

Tax Liability Calculation Type

AUTO - General Tax Rule ▼	🔒

Tax Rate Type   Indicate whether the GST/VAT scheme is based on a single or multiple tax rate structure.

GST (Goods and Services Tax) Single Rate
GST (Goods and Services Tax) Multiple Rates
NIL

- If **Single Rate** is selected, then the user will have the option to enter 1 tax rate in the Input sheet, and then nominate a 'Y' (Yes), or 'N' (No) for each cost and revenue item, if that tax rate is to be applied to it or not

- If **Multiple Rate** is selected, then the user will have the option to enter up to 3 different tax rates in the Input sheet, and then nominate a 'A or Y' (first rate), 'B' (second rate), 'C' (third rate) or 'N' (No) for each cost and revenue item, if that tax rate is to be applied to it or not

Tax Liability Calculation Type   Choose whether the model calculates the GST/VAT liability automatically or via a manual input by the user.

- **AUTO - General Tax Rule:** The program automatically calculates the GST/VAT liabilities and credits depending on what the user entered into the GST/VAT cell for each cost and revenue line item.

- **Margin Scheme with Valuation (GST Model Only):** The user is prompted to enter the margin value for the calculation of GST liability. The program will then automatically calculate the GST liabilities and credits depending on what the user entered into the GST cell for each cost and revenue line item.

- **Margin Scheme with % Cost Completed 1-7-2000:** Based on the user's inputs in the cost sections, the model will determine by default the % of costs that have been incurred before 1-7-2000. It then applies the Margin Scheme with Valuation calculation to determine input credits and liabilities.

- **Manual Input of Liability:** The program automatically calculates the GST/VAT credits depending on what the user entered into the GST/VAT cell for each cost line item, but the user must manually input the lump sum liability with start and span dates.

5.3.2   Cost and Revenue Inputs

Cost and Revenue Input Method   Select how costs and revenues are to be entered in the model.

- If **Exclusive of Tax** is selected, then the model will assume that amounts entered in the inputs **exclude** tax and if a GST/VAT rate is applied to that item then it will automatically add the tax amount to the item in the cash flow and reclaim tax credits or pay tax liabilities appropriately.

If 'Net of Tax' is selected for cost inputs, then an 'Add Tax' option is available for each cost line item.

Base Rate / Unit	Add GST	Total Current Costs (exc GST)	Total Current Costs (inc GST)
100,000	Y	100,000	110,000

Once the user enters in the net cost (e.g. 100,000) and nominates to Add Tax ('Y'), the total cost will then be 110,000 (assuming the tax rate is 10%)
The user can also enter 'N' if no tax is to be added.

- If **Inclusive of Tax** is selected, then the model will assume that amounts entered in the inputs **include** tax and if a GST/VAT rate is applied to that item then it will reclaim tax credits or pay tax liabilities appropriately.

If 'Inclusive of Tax' is selected for cost inputs, then an 'Tax Included' option is available for each cost line item.

Base Rate / Unit	GST Included	Total Current Costs (exc GST)	Total Current Costs (inc GST)
110,000	Y	100,000	110,000

Once the user enters in the gross cost (e.g. 110,000) and nominates that Tax is Included ('Y'), the net cost will then be 100,000 (assuming the tax rate is 10%)
The user can enter 'N' if no tax is included in the base.

5.3.3   Liabilities and Reclaims

Developer's Tax Payment and Reclaim Frequency

Liability Payment	Paid in the Same Month
Land Purchase Input Credits	Reclaim All After Final Land Settlement
Other Costs Input Credits	Reclaimed in the Same Month

Tax Payment and Reclaim Frequency

These options allow the user to nominate the delay between expenditure of costs and the reimbursement of the GST/VAT credits and the delay between receipt of revenues and the payment of the GST/VAT liabilities for the Developer and Land Owner (in a Joint Venture model).

Paid in the Same Month
Paid ONE Month Later
Paid TWO Months Later
Paid every 2 months from January
Paid every 2 months from February
Paid Quarterly from January
Paid Quarterly from February
Paid Quarterly from March

Tax Liability Frequency

In addition to different timings (i.e monthly, quarterly, etc), the tax credit reclaims have two other distinct options:

- **Offset Against Liability at Sale:** No credits are reclaimed until sales occur.

- **Calculated but not Reclaimed:** The tax paid on costs is shown on the Summary report as a separate line item, but is not effectively reclaimed by the developer.

A separate option is also available to determine the GST/VAT reclaim frequency for the land cost.

```
Reclaim All After First Land Payment
Reclaim All After Final Land Settlement
Reclaim Proportionally with Land Payments
```

5.4   Financial Reporting

5.4.1   Financial Reporting

```
Financial Reporting
   ☑ Enable Reporting and Corporate Tax Calculation (Financial Sheet)    🔓
```
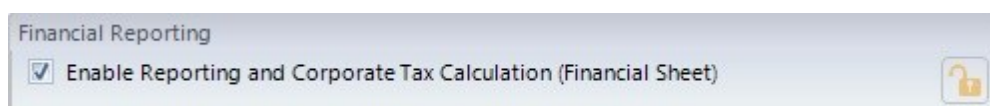
Financial Reporting

To enable Profit & Loss Statements, Balance Sheet and Corporate Tax reporting click the 'Enable Reporting and Corporate Tax Calculation' option.

5.4.2   Revenue Treatment

```
Revenue Recognition
   Type:          % Completed          ▼    ☑ Include Land                🔓
   % Sold Method: Based on % of Revenue Sold                ▼
```
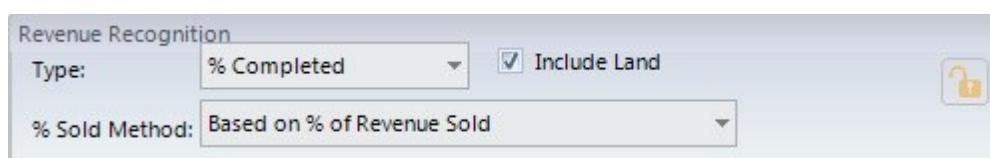
Revenue Recognition

Type
There are 2 calculation options for the Recognition of Revenue:

```
% Completed
On Completion
```

- **On Completion:** As settlements occur revenue is recognised in the Profit and Loss Statement in proportion to the % settled.

- **% Completed:** Revenue is recognised on a weighted percentage of construction completed and percentage sold. Effectively you are recognising revenue for the proportion of the building which is complete for which you have sold. E.g. If the property is 50% sold and 50% built, the revenue recognised in the P&L is 25% (50% x 50% = 25%)

Include Land
This option is used to either include or exclude Land from the Works in Progress calculations. If the 'On Completion' revenue recognition

method is selected, this option is set to always include the Land, and the option to change it is disabled.

<u>% Sold Method</u>
There are 2 options for the method for calculating the % Sold in the Profit Realisation Analysis.
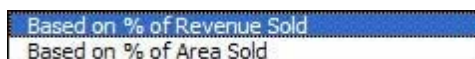
- % of Revenue Sold (by value)

- % of Area Sold

5.4.3   Cost Treatment

Work in Progress, Expensed or Operating Cost

For each of the cost and revenue sections you have the option to:

- **Expensed:** Directly expense the cost at the date it is incurred in the 'Cost of Sales' section of the Profit and Loss statement, impacting how the Project Margin is calculated.

- **WIP:** Add it to the Work in Progress. This defers the recognition of the cost in the Profit and Loss statement until such time that the defined threshold levels are reached. Until the thresholds are reached, these costs appear as a 'Current Asset' in the Balance Sheet called 'Work in Progress'.

- **Operating:** Define the cost as an Operating Cost. These are expensed to the Profit and Loss statement in the 'Operating Expenses' section. The difference between an Operating expense and a Cost of Sales expense (as defined above) is that an Operating expense is not included in the Project Margin calculation. It is however included in the overall Profit and Loss calculation.

Selecting an item as an Operating Cost will impact on where it is shown in the P&L. Operation Costs in the P&L are displayed below the Margin line.

Items in Work in Progress will be expensed in accordance with selections in the Revenue Recognition settings.

5.4.4 Tax Treatment

| Tax Benefit | | Tax Payment |

Tax Benefit

There are 2 calculation options for the treatment of a tax benefit.

| Realise tax benefit at time of loss |
| Roll forward loss until profit is realised |

- **Realise Tax Benefit at time of loss:** If the project is making a loss, a tax benefit is calculated at the time of that loss.

- **Roll forward loss until profit is realised:** If the project is making a loss, it is rolled forward until such time that the project makes a profit, and the loss is then offset against such profit to calculate the tax liability.

Tax Payment

There are 4 calculation options for the payment timing of tax liabilities.

| Paid Monthly |
| Paid Quarterly |
| Paid Bi-Annually |
| Paid Annually |

If an Paid Quarterly, Bi-Annually or Annually, is selected, then an additional option to select which month that payments start on will be enabled.

5.4.5 Equity Treatment

Project Equity Treatment

The are 2 options on how to treat project equity in the Balance Sheet:

| Shareholders Equity (Project Capital) |
| Long Term Liabilities (Intercompany Loans) |

- **Shareholders Equity (Project Capital):** Developer's equity contributions appear as 'Project Capital' in the 'Shareholders Equity' section of the Balance Sheet.

- **Long Term Liabilities (Intercompany Loan):** If using this option, the Developer's equity contributions are treated as an Intercompany Loan and appear in the Balance Sheet under the 'Long Term Liabilities' section. If this option is selected, the user will also need to input in the Balance Sheet the paid up Share Capital of the company.

5.5 Budget Management

5.5.1 Updating Budgets

Original & Project Budget Override	Elect to allow or disallow the Original and/or Project Budgets to be overridden after it has been set. Overriding includes:

- Setting a budget, or
- Clearing a budget.

Cash Flow Override	This will allow you to choose whether you want to allow the editing of parts of the the cash flow, including:

- **Historical Data**, which includes the ability to edit cash flow columns left to the 'current period' (yellow column) and use the 'Roll Back' feature to move back to a historical period and make amendments.

- **Current Month Data**, which includes the ability to edit the 'current period' (yellow column). If this option is unticked/disabled, data can still be imported into the 'current period' cash flow column when using the 'Import CashFlow Actuals' function, however data in that column can not then be manually adjusted.

Rollover of Previous Forecast	Select when the rollover of the previous forecast is to occur automatically - Monthly, Quarterly or Yearly. The model will also ask from which time period you would like to roll over the forecast from.
	If the automatic feature is not preferred, the user can select the 'Manual Rollover' check box, and the Previous Forecast can be set at any time by the user 'Set as Previous Forecast' function in the 'Management Tools'.
Manual Budgets	The user can hide the Manual Budgets from either the 'Cash Flow' or 'Summary' reports, and also prevent users from editing them.

5.5.2 Reporting

Summary Variance Display

This will allow you to choose whether you want the variances to the stored budgets in the 'Summary' sheet to be reported as a percentage (%) and/or value ($).

- **Show variance as Percentage**: Will display budget variances as a percentage.

  o Note: For KPI's that are represented as a % (e.g. IRR, Margin, WACC, etc), then this percentage variance will indicate the +/- change as a proportion of the budget being compared to (e.g. if the Original Budget IRR was 20%, and then Current Forecast is 30%, then the Percentage Variance would be 50%, not 10%)

- **Show variance as Amount**: Will display budget variances as an amount.

  o Note: For KPI's that are represented as a % (e.g. IRR, Margin, WACC, etc), then this amount variance will indicate the +/- change in the actual KPI (e.g. if the Original Budget IRR was 20%, and then Current Forecast is 30%, then the Amount Variance would be 10%, not 50%)

- **Show variance as both Percentage and Amount**: Will display both types of budget variances.

Current Apr-2020	Variation to Previous		Variation to Project		Variation to Original	
AUD						
91,045,350	8,276,850	10.00%	9,505,350	11.66%	13,275,452	17.07%
85,847,850	7,804,350	10.00%	8,695,350	11.27%	11,995,013	16.24%
5,197,500	472,500	10.00%	810,000	18.46%	1,280,439	32.69%

Cost to Date Calculation Select whether the current time period is to be included in the 'Cost to Date' calculations in the cash flow summary on the 'Cash Flow' sheet.

Warning Display Select which warnings you would like to appear in the cash flow sheet (in the form of red highlighted cells), such as:

- When there are variations between the Cash Flow and Input Assumptions (caused by manually overriding the cash flow table).

- When Total Commitments exceed the Current Budget.

- When Total Commitments exceed the Forecast to Complete.

Note:

- If a cost/revenue line item's Current Budget is a positive amount (default behaviour), then any Commitments for that line item should also be entered as a positive amount.

- If a Current Budget is a negative amount (e.g. a Refund/Rebate line), then any Commitments for that line item should also be entered as a negative amount.

- Therefore a Commitment is deemed to be exceeding the 'Current Budget' or 'Forecast to Complete' when:

  o A positive Commitment > a positive 'Current Budget' / 'Forecast to Complete'

  o A negative Commitment < a negative 'Current Budget' / 'Forecast to Complete'

Warn on Save

There is also the option to warn the user of these issues when saving a file or exporting to the Enterprise Database, thus prompting them to address the issues.

5.6 Financing

5.6.1 Global Settings

Financing Level	This options allows the user to toggle between two finance layouts:

- **Simple**: Use Equity and Senior Loan only. When clicked it resets and hides the other Loans 1 to 10 from the input and output sheets.

- **Advanced**: Use the spin-button to set the number of funding facilities (maximum 11).

Interest Rate Conversion	This is to do with the method for converting all the in the model interest rates from their annual rate to the selected rest period (months, quarters, half years or years) for all interest payable and receivable.

Nominal Conversion	D/T
Effective Conversion	$[(D + 1)^{1/T}]-1$

Where:
D = is the annual interest rate.
T = The number of rest periods per annum (i.e Monthly = 12, Quarterly = 4, Half Yearly = 2)

Note:

- It is imperative that a universal usage for the conversion of the interest rate be adopted for all evaluations.

- The first formula simply divides the annual interest rate by 12 while the second formula is the effective conversion and takes into account the compounding on a monthly, quarterly, half yearly basis depending on the cash flow being modelled.

Total Debt Loan Ratio Calculation Method

Indicate the denominator for the loan ratio calculation for the total debt overdraft. This is only used to show the Loan Ratio on the Reports.

RETURNS ON FUNDS INVESTED	Total Debt
Loan to Value Ratio	3.72%
Loan Ratio	95.57%
	of Land Purchase Price

Summary Total Debt Loan Ratio

Loan Ratios Display

This options allows you to set how the Loan Ratios are displayed on the following reports:

- **Cash Flow Report:** Set the Loan Ratio to be calculated on either cumulative loan drawdowns, or on the current loan balance (which may include capitalised interest and fees)

- **Summary Report:** Set the Loan Ratio to be calculated on total funds invested, either including or excluding capitalised interest and fees.

Loan 4 - Lender Name				
Drawdown	(1,000,000)	-	-	-
Loan Interest Rate (%/ann)	5.00%	5.00%	5.00%	5.00%
Interest Charged	-	(4,167)	(4,184)	(4,201)
Application and Line Fees	-	-	-	-
Interest Paid by Equity	-	-	-	-
Loan Repayment				
Interest and Fees	-	-	-	-
Principal	-	-	-	-
Loan Balance	(1,000,000)	(1,004,167)	(1,008,351)	(1,012,552)
% of Land Purchase Price.	90.91%	90.91%	90.91%	90.91%
Loan 4 Cash Flow	(1,000,000)	-	-	-

Cash Flow Loan Ratio

RETURNS ON FUNDS INVESTED	Loan 4
	Lender Name
Funds Invested (Cash Outlay)	8,415,007
% of Total Funds Invested	100.00%
Payback Date	Jun-12
Month of Payback	Month 41
IRR on Funds Invested	5.00%
Equity to Debt Ratio	N.A.
Loan to Value Ratio	3.72%
Loan Ratio	95.57%
	of Land Purchase Price.

Summary Loan Ratio

Profit Share Payment

If there are any profit share payments to the Land Owner or Lenders, then this options allows you to select when the profit share is paid out:

- **Paid in full at project end**: The model waits till the end of the project before any profit share payments are distributed.

- **Paid Progressively:** As soon as the project makes a profit (are debts are repaid), then any profit share payments will be distributed progressively. This option will only work if the option for 'Equity Repayment' is set to 'repay when available' as well, otherwise it will default to paying it at the end of the project.

> Paid in full at project end.
> Paid progressively as project makes a profit.

Manual Overrides

By default, the Injection/Drawdown and Repayment lines in the Financing section of the Cash Flow worksheet are locked and are calculated based on all inputs and preferences set in the model, and the financing logic. However, if there is a need to alter the Injection/Drawdown and Repayment lines to reflect a more specific scenario that the model cannot account for, enabling this preference allows these lines to be unlocked.

Note:

- The model will not automatically recalculate Equity or Loan Injection/Drawdown and Repayments if a manual override is made.

- If the Injection/Drawdown and Repayment lines are UNLOCKED and a manual override is made, it is recommended to check any imbalances in the 'Check Balance' line. Any numbers in this row indicate that there is an bonus/shortfall for that period. For example, if the default formula for a Loan Drawdown calculated -5,000,000, and this was manually overridden to -4,000,000, then there would be a drawdown shortfall and -1,000,000 will be displayed in the 'Check Balance' line. This then requires manual adjustment of the other Loan Drawdowns to take up that shortfall until the 'Check Balance' returns to zero.

5.6.2 Hard Costs

Hard Costs	Select which project costs are classified as 'Hard Costs' for the purpose of loan ratios or facility limits that are based on 'Total Hard Costs' (as below).
	If the tax component (GST/VAT) of the selected hard costs are to be excluded from amount, then make sure the last check box is ticked.

5.6.3 Equity

Facility Limit	Nominate the limit of funds injected into the cash flow. This amount excludes interest and fees. The limit can either be based on a:

- Fixed amount.

- Ratio of project costs or revenues (unless otherwise stated, these are inclusive of any tax).

Equity Injection Method	Indicate how the Equity is injected into the project:

- Fully upfront at project commencement.

- Progressively injected when required.

Interest Payment Method	Indicate how the interest charged on the funds is paid:

- **Accrued not Capitalised (Simple Interest):** Where interest is only calculated on the equity drawn down and not on any interest.

- **Capitalised (Compound Interest):** Where interest is calculated on the loan balance that includes any capitalised interest.

Equity Ratio Calculation Method

Indicate the denominator for the ratio calculation for equity cash flow. This is only used to show the Loan Ratio on the Reports.

Equity Repayment Method

Nominate when the equity is repaid back to the project:

- **At Project End:** Where any excess funds are deposited into the surplus cash account until such period.

- **When Available (retain cash for future costs):** Where equity is repaid progressively as it is realised. The cash flow may retain funds in the surplus cash account if it identifies future costs that may need to be funded.

- **When Available (do not retain cash for future costs):** Where equity is repaid progressively as it is realised. Any future costs that may need to be funded are ignored and no cash is retained to fund these.

Any manual equity repayment adjustments in the cash flow table will override the preferences.

Outstanding Debts at Project End

You can elect to have equity pay any outstanding debts at the end of the project, rather than leave them unpaid.

5.6.4 Loans 1 to 10

Loan Type

Nominate whether the Loan is a Debt or Equity facility.

- By Selecting 'Debt', the loan will impact all Debt-related performance indicators (e.g Peak Debt Exposure, etc)

- By Selecting 'Equity', the loan will impact all Equity-related performance indicators (e.g Equity IRR, etc)

Facility Limit Calculation Method

Nominate the limit of funds injected into the cash flow. This amount excludes interest and fees. The limit can either be based on a:

- Fixed amount.

- Ratio of project costs or revenues (unless otherwise stated, these are inclusive of any tax).

Loan Drawdown Method

Indicate how the loans are drawn down into the project:

- **Upfront:** Funds are drawn down in total at project commencement (or Commencement Month if used).

- **Progressively:** Funds are drawn down as and when when required.

- **Progressively, limited to cumulative facility limit:** This option is only available if a facility limit is based on a % ratio of project costs or revenues. It will draw down funds in line with the cumulative facility limit (eg if a % of Construction Costs is chosen as the facility limit, then funds will only be drawn down during the period that construction costs are incurred).

Payment Methods

Interest: Indicate how the interest charged on the funds is paid:

- **Paid for by equity:** Where interest is paid by equity as soon as it is charged, either from the surplus cash account (if funds are available) or from additional equity injections (once the surplus cash account has been exhausted).

- **Accrued not Capitalised (Simple Interest):** Where interest is only calculated on the drawn downs and not on any interest.

- **Capitalised (Compound Interest):** Where interest is calculated on the loan balance that includes any capitalised interest.

- **Principal and Interest:** With this type of loan, the repayments are made up of the periodic interest on the outstanding balance plus an amount which will reduce the principal. If this option is selected:

  o The Loan Drawdown Method automatically reverts to 'Upfront'.

  o The user must set a manual 'Maturity Period', which is used to determine the term for the loan.

Facility Limit	Fixed Amount
Drawn down in total at loan commencement.	1,000,000

Month Commencement	Auto	
Maturity Month	Manual	35

Using the Principal and Interest Option

Line Fees: Indicate how Line Fees are paid:

- **In Arrears**: Paid during the period that interest is due.

- **In Advance**: Paid during the period that the loan balance is in deficit (i.e. in advance).

Loan Ratio Calculation Method	Indicate the denominators for the loan ratio calculation for each loan. This is only used to show the Loan Ratio on the Reports.
Refinancing at Maturity or **Principal and Interest Repayments**	This option may display one of two labels:

- **Refinancing at Maturity:** This option is only applicable if you have chosen a manual Maturity Month for that loan. Nominate which other source of funding is to refinance the loan at the nominated Maturity Month.

- **Principal and Interest Repayments:** If a Principal and Interest loan is selected, then this option will prompt the user to define which loan facility is to fund the periodic repayments for the subject facility.

5.6.5   Senior Loan

Loan Type	Nominate whether the Loan is a Debt or Equity facility

- By Selecting 'Debt', the loan will impact all Debt-related performance indicators (e.g Peak Debt Exposure, etc)

- By Selecting 'Equity', the loan will impact all Equity-related performance indicators (e.g Equity IRR, etc)

Facility Limit Calculation Method	Nominate the limit of funds injected into the cash flow. This amount excludes interest and fees.

- **No Limit - Use as an Overdraft Facility**: This is a line of credit facility and there is no limit on the borrowed amount. No facility limit is required and the input is disabled.

- **Set Fixed Limit - Use Equity as the Overdraft Facility**: A facility limit can be set on the Senior Loan as a fixed amount, and then any additional funding is sourced from Equity.

Payment Methods	**Interest**: Indicate how the interest charged on the funds is paid:

- **Paid for by equity:** Where interest is paid by equity as soon as it is charged, either from the surplus cash account (if funds are available) or from additional equity injections.

- **Accrued not Capitalised (Simple Interest):** Where interest is only calculated on the drawn downs and not on any interest.

- **Capitalised (Compound Interest):** Where interest is calculated on the loan balance that includes any capitalised interest.

The interest rate can be manually varied for different periods in the cash flow tables.

Line Fees: Indicate how Line Fees are paid:

- **In Arrears**: Paid during the period that interest is due.

- **In Advance**: Paid during the period that the loan balance is in deficit (i.e. in advance).

Loan Ratio Calculation Method

Indicate the denominators for the loan ratio calculation for each loan. This is only used to show the Loan Ratio on the Reports.

Part VI

6   Custom Worksheets

The ARGUS EstateMaster DM program is based on a spreadsheet interface and allows you to insert additional blank worksheet into the model.

Adding custom sheets is conducted via the 'Sheets' section in the Ribbon Menu.
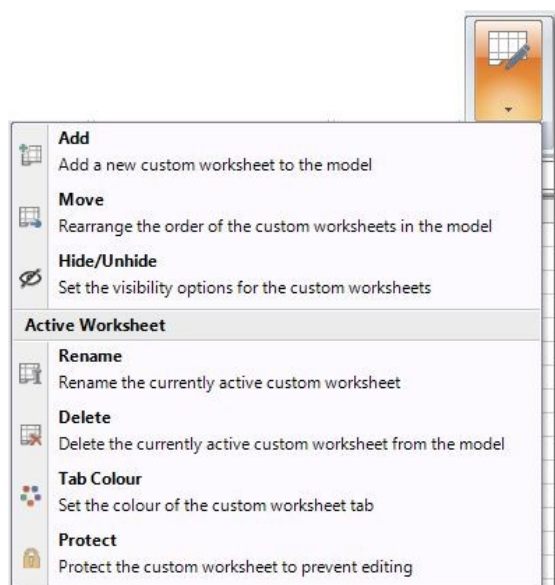
When you click on 'Add', there will be 2 options for adding a custom worksheet into the model:

1. **Importing a sheet(s) from another Excel file**: This will prompt you to browse to an Excel file and select one or more worksheets in that file to import.

    Important Notes:

    - If you attempt to import a worksheet that has formula links to another worksheet, you will be required to import the other worksheet to avoid any links being broken, otherwise you will not be able to import the worksheet.

    - If you attempt to import a protected worksheet that has password on it, you will be prompted to enter in the password before the worksheet can be imported. Once the worksheet is successfully imported, it will be protected again and can be unprotected using the sheet context menu.

    - Any 'Global' range names (those that are global to a workbook) that exist on the worksheet to be imported will be removed. Only 'local' range names (those that are local to a worksheet) will be imported with the worksheet. If you have a range name on the worksheet and you want it to be imported into ARGUS EstateMaster DM, you will need to ensure they 'local'. Refer to this Microsoft Article about using Global and Local range names: http://support.microsoft.com/kb/274504

    - Any 'Local' range names (that exist on the worksheet to be imported) that refer to an external Excel workbook will be removed.

    - Any 'Local' range names (that exist on the worksheet to be imported) that have the same name as a standard ARGUS EstateMaster DM Global Name will be renamed with "_RENAMED" appended to the end of the name. This means that any formulae that was referencing this name will be automatically adjusted.

2. **Adding a blank worksheet**: This will add a blank unprotected worksheet to the model.
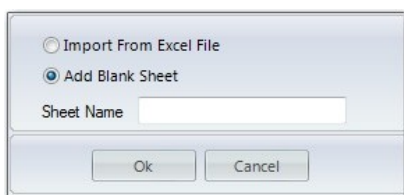
Please Note:

- Custom sheets are file specific.

- Custom worksheets will be saved to the data file (*.emdm), however they will not be stored in the Enterprise Database when Exporting.

Working with Existing Custom Sheets (Rename, Delete, etc)

Once a sheet is added, you can do the following to it via the Ribbon Menu:

- **Rename**: Click on 'Rename', and a prompt will appear asking you to give the active sheet a different name.

- **Delete**: Click on 'Delete', and it will ask you to confirm the deletion of the active sheet.

- **Move:** Click on 'Move', and a list of all the custom sheets in the model will appear where you can rearrange their order.
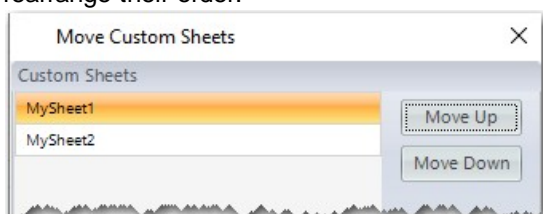
- **Hide/Unhide:** Click on 'Hide/Unhide' and a list of all the custom sheets in the model will appear where you can change the visibility setting.

  ⊘ indicates that the sheet is hidden

  ⊘ indicates that the sheet is visible
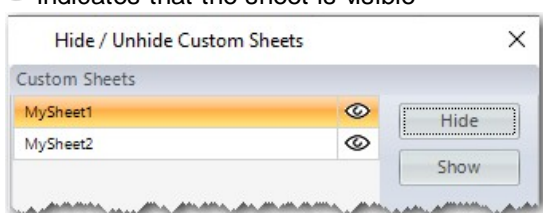
- **Change the Tab Colour:** Click on 'Tab Colour', and a colour picker will appear to allow you to customise the sheet's tab colour.

- **Protect / Unprotect:** Click on 'Protect' or 'Unprotect' (will differ, based on the current protection status of the sheet) to either protect the sheet with a password, or unprotect it.

Custom Sheets Formatting Menu

In addition to the context menu available for custom sheets, there is also a Ribbon Menu item that appears when a custom sheet is activated to assist with cell formatting.

It contains the following functions:

- Setting the font to Bold, Italics and Underlined.

- Left, centre or right aligning text.

- Changing the number format to Comma (#,###.00) or Percentage Style (#.00%).

- Setting the Fill colour of the cell.*

- Setting the Font colour.*

- Increasing or decreasing font size.

- Merge and Centre across cells and text wrapping.

- Format Painter (copies formatting of current selection and pastes it onto the next selected cell(s))

- Clearing cell formatting.

* When setting colours to fill or font, the previously selected colour will be displayed when hovering over the menu item.

For a complete menu of all formatting available for custom sheets, click on the button at the bottom right of the menu.

6.1 Names

This feature allows you to create a named range or a named constant/formula to use them in other formulas. By using 'Names', you can make your formulas much easier to understand and maintain, and more importantly, make them dynamic.

Defining a Range Name

1. On the custom sheet, select the cell(s) you want to define with a Name

2. Right-click and select 'Names > Define'

3. A form will appear with two fields:

   a. **Refers to:** This defaults to the cell address that is currently selected and that the Name is being applied to. This can be updated to a different cell address if required, or alternatively edited to be formula (e.g. to build dynamic range names) or hardcoded with value.

   b. **Range Name**: This is the actual Name applied to it. It must have no spaces in the text and not already exist.

4. Once completed, click [OK]. This will apply it as a 'Local' Name in the active worksheet.
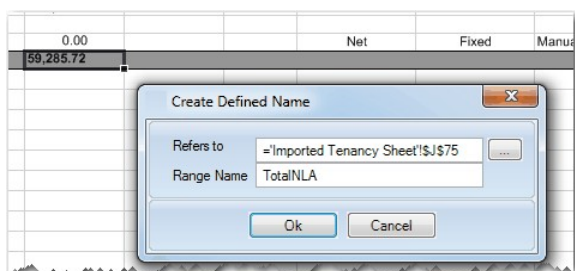
Editing a Range Name

1. On the custom sheet, right-click and select 'Names > Edit'

2. A form will appear listing all the Names located on the active worksheet.

3. You can select an individual Name and either:

   a. Click [Delete] to remove it from the worksheet. Any formulae referencing it will then become invalid and will need to be updated.

   b. Edit the 'Refers to' details to change where the Name is pointing to or its formula/value.
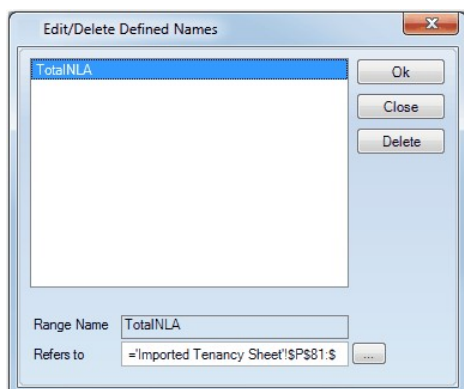
Using Names

The Names that are created by this function are 'Local'; meaning that it is available by default only on the sheet where it is defined, whereas 'Global' Names are available to the whole workbook. This means that when using your custom Names in user-inserted formulae:

- If the formula is on the *same* worksheet where the Name is located, you can just type in the name in the formula (e.g. =TotalNLA)

- If the formula is on a *different* worksheet where the Name is located, you must include the sheet name (within single quotes if the sheet name has spaces) with an exclamation point (!) before the Name (e.g. ='Imported Tenancy Sheet'!TotalNLA)

Please Note: Unlike Excel, where it automatically resolves a cell address to a Name (if it has one) when you are editing a formula, ARGUS EstateMaster DM will not behave like this. You will need to manually type in the Name, whether it be a custom or standard one, in a formula to use it.

6.2 Exporting Data to the Enterprise Database

When exporting to the Enterprise Database, by default, only data on standard worksheets is exported. If there is any data on your custom worksheets that you want exported to the Enterprise Database for consolidated analysis, you can use this feature to define a data range that you wish to include in the export process.

Types of Data that can be Exported

Single-Cell Data
These are single-cell outputs which can either be a Date, Number, Percentage (must contain a '%' sign) or Text.

Multi-Cell Data (Tables)
These are multi-cell outputs that are configured in a table layout. There is no restriction on the type of data that can be inserted in these tables, however there are certain rules that must be followed:

- Table orientation must be 'vertical' (column headers at the top, and data entered top to bottom)

- The first row in the Table must always be a single-row header and have no merged cells or empty cells.

- There must be at least 2 rows in the table; 1 Header row and at least 1 row of data.

- If a row has data in at least 1 column (including a '0' value), it will be exported to the database. Only rows that have no data for ALL columns will be skipped.

  o Note: If there are formulas in the table, you may need to change them so that they return empty text rather than zero, if you wish to skip those rows when they are not used.

Creating a Custom Database Export Range

1. On the custom sheet, select the data you want to export to the Enterprise Database.

2. Right-click and select 'Custom Data Export > Define'

3. A form will appear with four fields:

   a. **Export to:** Select 'Database' option

   b. **Description:** A unique description for the data you want to export. You cannot use the same 'Description' more than once in a file.

   c. **Data Type:** The format of the data selected:

      i. If you have selected a single cell range, then you will have the option to select 'Date', 'Number', 'Percentage' or 'Text' from the drop-down.

      ii. If you have selected a table range, then this drop-down will automatically set to 'Table'.

   d. **Refers to:** This is the range address that is currently selected, but can be updated if required just by selecting a different range in the custom worksheet behind the form.

4. Once completed, click [OK]. This will flag the data so it is is included in the database export process.

Validation Checks on File Save

Upon attempting to save a file, all custom export ranges will be validated to ensure there are no issues.

- **Data Type (Single-Cell Data):** If it finds that there is a conflict with the Data Type selected by the user and the actual data type of the cell, a warning will appear.

- **Header Rows (Table Data):** If it finds that the first row of the table contains empty/merged cells, a warning will appear.

- **Header Rows (Table Data):** If it finds that the table does not meet the minimum size requirements of 2 rows, a warning will appear.

Editing a Custom Database Export Range

1. On the custom sheet, right-click and select 'Custom Data Export > Edit'

2. A form will appear listing all the Custom Data Export ranges (exporting to both Database and Word) on the active worksheet only.

3. If you select one that is used for exporting to the Database, you can either:

   a. Click [Delete] to remove it from the worksheet and stop the data from being exported to the database (any existing data in the database will not be affected)

   b. Edit the 'Description', 'Data Type' or 'Refers to' details.

      i. Note: The 'Data Type' can only be changed form one single-cell data type to another single-cell data type. If you wish to change a table range to a single-cell range, or vice versa, you must delete the original name first and then recreate the new range with the different data type.

Exporting the Data

The data on the custom sheet that has been defined using the above steps, will only be exported to the Enterprise Database when the ARGUS EstateMaster DM file itself is being exported.

Validation Checks on File Export

Upon attempting to export a file to the database, all custom export ranges will be validated to ensure there are no issues.

- **Same Description, different Data Type:** If data has already been exported to the database that has the same 'Description' but different 'Data Type', a warning will appear and the export process will terminate.
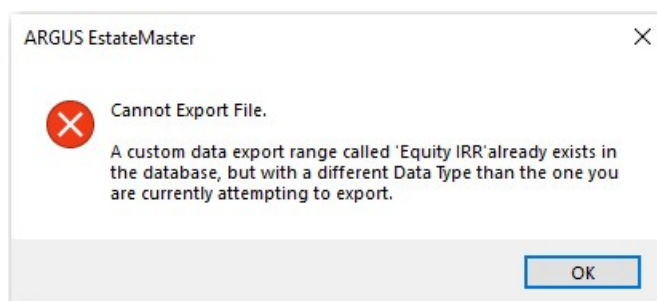
- **Different Table Headers (Table Data):** If a Table has already been exported to the database that has the same 'Description', but different columns (i.e. a column has been deleted/added/renamed since the last export), a warning will appear with the option to proceed or not.
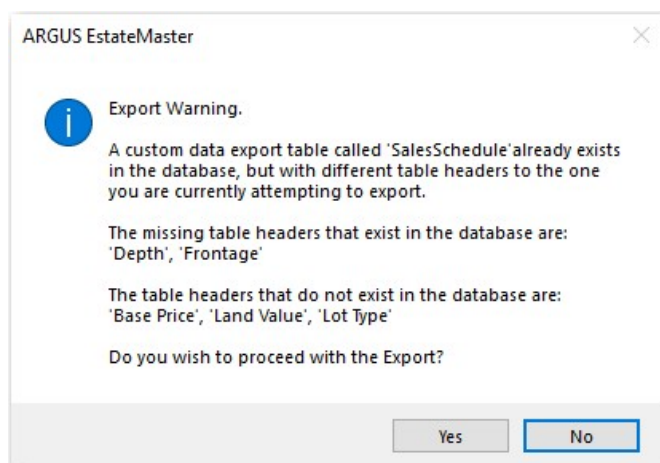
Accessing Exported Data

When the file is exported to the Enterprise Database, any Custom Database Export Ranges that have been defined on custom worksheets will automatically be exported as well, updating the following tables and fields in the Enterprise Database:

Table	Field	Description
CustomDataExportRange	RangeName	A unique range name given to the cell
	RangeDescription	The description entered by the user
	DataType	The data type entered by the user
CustomDataExportRangeValue *Applies to Single-cell Data Only*	CustomDataExportRangeID	The ID of the CustomDataExportRange record that this child record belongs to
	RangeValue	The cell value
	CashFlow ID	The ID of the Cash Flow record that this child record belongs to
	SheetName	The name of the custom sheet that the value existed on
CustomDataExportRangeTable *Applies to Table Data Only*	CustomDataExportRangeID	The ID of the CustomDataExportRange record that this child record belongs to
	CashFlow ID	The ID of the Cash Flow record that this child record belongs to
	SheetName	The name of the custom sheet that the Table existed on
	ColumnName	The names of each column in the Table
CustomDataExportRangeTableData *Applies to Table Data Only*	CustomDataExportRangeTableID	The ID of the CustomDataExportRangeTable record that this child record belongs to. A different ID is given to each different column in a Table.
	Row Number	The actual row number of the table that the data exists in. Rows that are ignored during the export process are skipped.

| CellValue | The data that exists in that row for the specified column (i.e. CustomDataExportRangeTableID) |

6.3   Exporting Data to a Word Document

When using the Office Links feature to link ARGUS EstateMaster DM data to a Word Document, by default, only the standard outputs in the Word Bookmarks Directory can be exported to a Word Document. If there is any data on your custom worksheets that you want exported to a linked Word Document, you can use this feature to a define a range of cells that you wish to include in the export process.

Creating a Custom Word Export Range
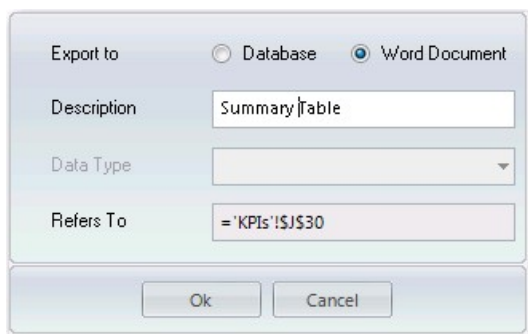
1. On the custom sheet, select the cell or range of cells you want to export to a linked Word Document.

2. Right-click and select 'Custom Data Export > Define'
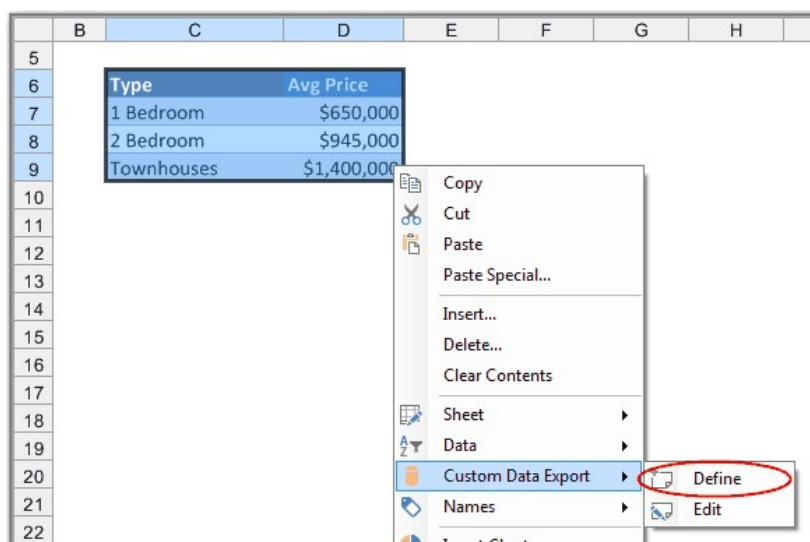
3. A form will appear with four fields:

    a. **Export to:** Select 'Word Document' option

    b. **Description:** A unique description for the data you want to export. You cannot use the same 'Description' more than once in a file.

    c. **Data Type:** This is not required when 'Word Document' option is selected.

    d. **Refers to:** This defaults to the cell/range address that is currently selected but can be updated to a different cell/range address if required.

    Please Note: Single-cell data will data will be exported as a 'text value' into the linked Word Document, while multi-cell data will be exported as an image.

4. Once completed, click [OK]. This will flag the cell so its value is included in the export process.

Editing a Custom Word Export Range

1. On the custom sheet, right-click and select 'Custom Data Export > Edit'

2. A form will appear listing all the Custom Data Export cells on the active worksheet.

3. If you select one that is used for exporting to a linked Word Document, you can either:

   a. Click [Delete] to remove it from the worksheet and stop the data from being exported to the database (any existing data in the database will not be affected)

   b. Edit the 'Description' or 'Refers to' details.

Exporting the Data

The data on the custom sheet that has been defined using the above steps, will only be exported to a Word Document that has been linked to the ARGUS EstateMaster DM file using the 'Office Links' feature.

Part VII

7   Application Templates

Templates are a 'sample' ARGUS EstateMaster DM file that already have some inputs/preferences in place, which can be later adapted by the user (that is added/completed, removed or changed). Once a template is created, the user can save, edit and manage the result as an ordinary ARGUS EstateMaster DM file in a centralised location for other users to access. ARGUS EstateMaster DM templates enable the ability to bypass the initial setup and configuration time necessary to create standardised ARGUS EstateMaster DM files for various uses and objectives. For example, templates can be created for different 'types' of projects (i.e. residential, commercial, retail, etc), where each may have a different format or base assumptions.

7.1   Selecting a Template Folder

The first step that should be completed before creating any templates, is defining where they should be stored on your local machine or network. This is set in the 'Template Folder Path' application setting.

By default when the application is run for the first time, this folder path will be set as *<directory where ARGUS EstateMaster DM is installed>/***Templates**. This may be sufficient for single standalone users, however for multi-user environments it is highly recommended that it be changed to a network location that all necessary users have access to.

To change the location:

1. Click the 'Browse' button.

2. Select a new folder when prompted, and press 'OK' to confirm.

3. A message will appear alerting the user that the change has occurred and any templates that were stored in the original folder will need to be manually re-saved as templates in the new

folder.
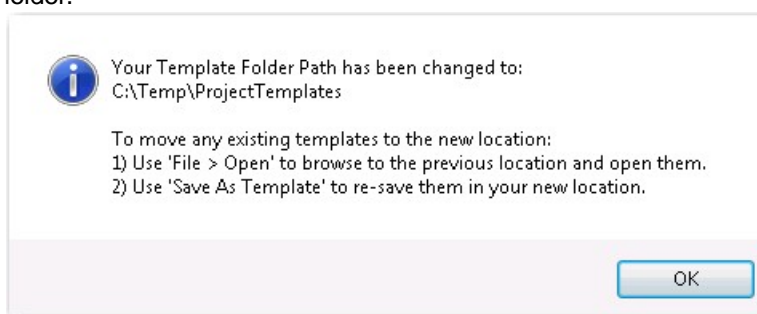
7.2   Creating a Template

A Template is just a normal ARGUS EstateMaster DM file that is stored in a centralised location that can be shared and used for starting new projects. To create a template:

1. Start ARGUS EstateMaster DM - a template can be created from scratch, or you can open an existing file to create a template from it.

2. Make the necessary adjustments to the file to start building up your template, this can include, but not limited to:

    a. Setting preferences (taxation format, currency, calculation options, etc)

    b. Entering inputs (base escalation rates, discount rates, chart of accounts, etc)

    c. Inserting custom worksheets (custom calculations and/or reports)

3. Once you have completed setting up your template, in the Ribbon menu, click on File > Templates > Save as Template
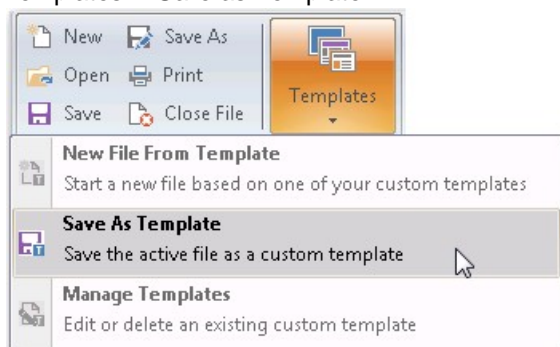
4. A dialog will appear, prompting you to name the template and indicate if the template should be set as a 'default' for all new files.
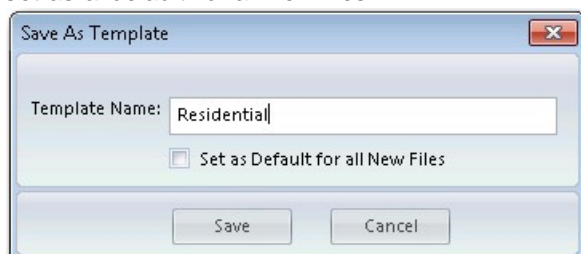
5. Once you click 'Save', the file will be saved in the designated Template Folder and you will be asked whether you wish to start a new file based on that template.
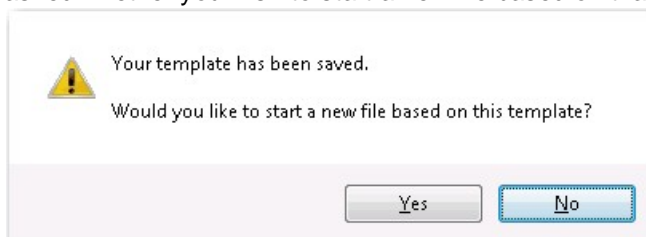
    a. If 'Yes', the current template file will close, and a new file will be started, based on the newly created template.

    b. If 'No', the current template file will close.

7.3 Using a Template

There are 2 ways of using a template to start a new file:

1. Using the 'New File from Template' function, or

2. Setting a Template as a 'default' so it is used every time the application is started or File-New is clicked.

Manually Starting a New File from Template

1. In the Ribbon menu, click on File > Templates > New File from Template (Note: If this button is disabled, it means there are no templates saved in the Template Folder).
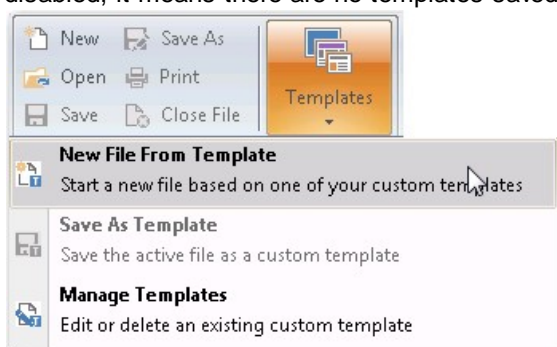
2. In the dialog that appears, it will display:

    a. The list of templates that have been created in the designated Template Folder

    b. When they were created and last modified, and by whom

    c. Which template (if any) is marked as the 'default'

    d. The status of the templates (they physically exist in the Template Folder)

Select the template you wish to use, and click 'Open'.
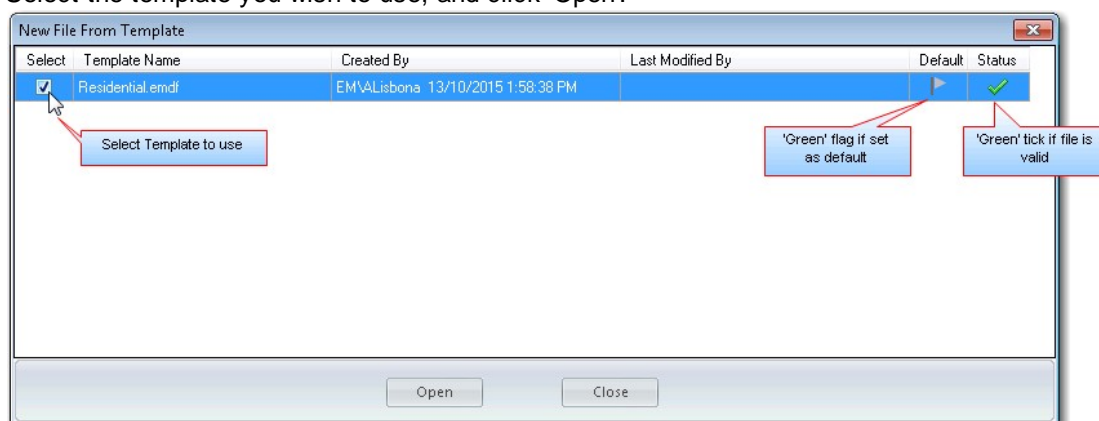
3. A new file will then be started, based on the selected template.

Setting and Using Default Templates

Being able to use Default Templates is a two-step process:

1. Setting a specific template as a 'Default' either when you are creating a new template, or editing an existing template in the 'Manage Templates' form.

2. Enabling the 'Use Default Templates' setting in the application settings.

Once these step are completed, the template that is designated as the 'default' will be used when:

1. Each time the ARGUS EstateMaster DM application is started.

2. Each time File > New is pressed in the Ribbon menu

7.4   Managing Templates

The Manage Templates function allows the user to make certain changes to their application templates, such as:

- Toggling which template is set as the 'default'

- Deleting templates permanently

- Edit a template file

- 'Repairing' and invalid template (e.g. a template that has moved from the Template Folder or has been deleted)

To load the Manage Templates function, in the Ribbon menu, click on File > Templates > Manage Templates (Note: If this button is disabled, it means there are no templates saved in the Template Folder).
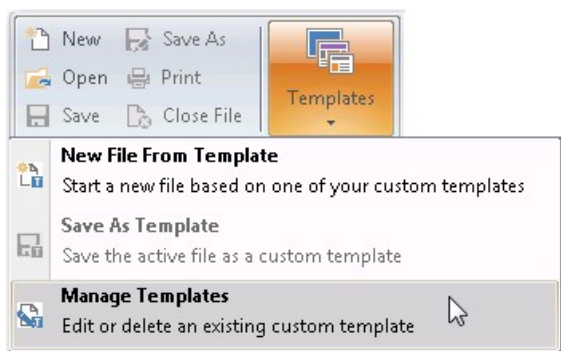
The following dialog will then appear:
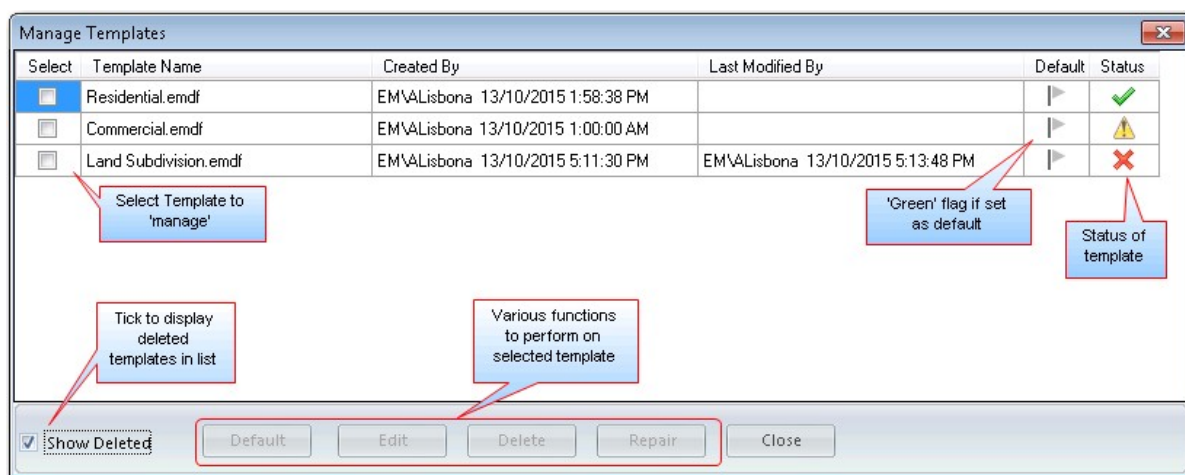
7.4.1   Setting a Default Template

To set a template as a default:

1. Select the desired template from the 'Manage Templates' form - it must be a valid template with a green tick in the 'Status'
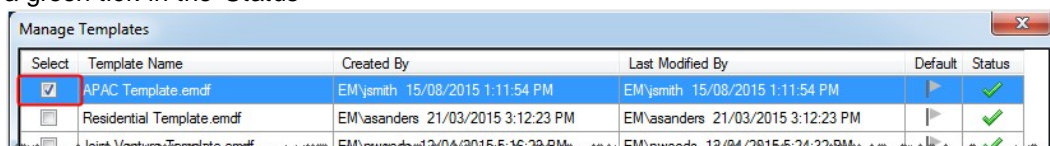
2. Click on the [Default] button. A message will appear.
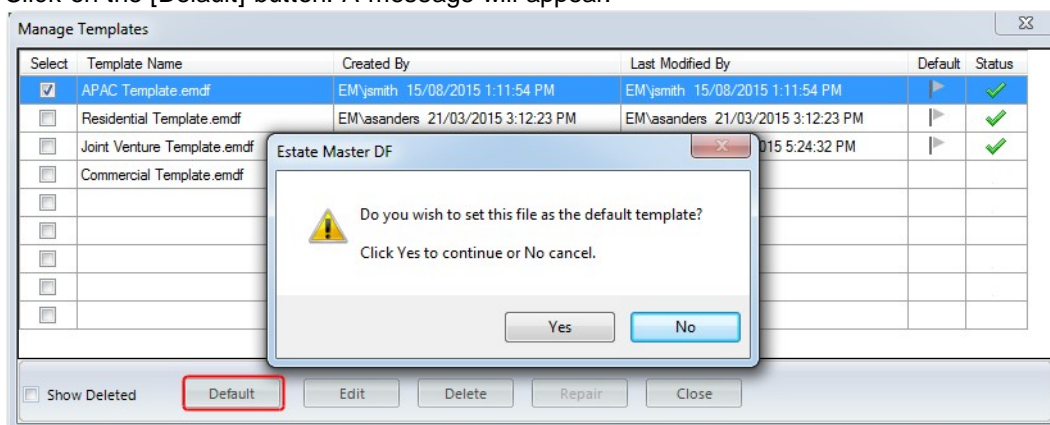
3. If you click 'Yes', it will check to see if any other template is set as the default and remove it from that, before setting your selected template as the default, and changing the 'Status' to a green tick.
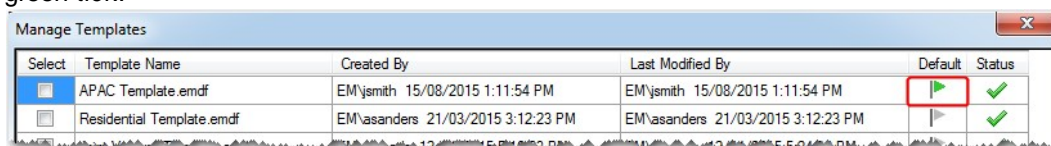
Important Note:

- Even though this process marks which template is the 'default', the 'Use Default Templates' setting in the application settings still needs to be enabled to for it to be implemented.

7.4.2 Editing a Template

To set a template as a default:

1. Select the desired template from the 'Manage Templates' form - it must be a valid template with a green tick in the 'Status'.

2. Click on the [Edit] button. The template will then open in 'Edit' mode, and a floating dialog appears with the template name, the 'Set as Default' checkbox and a 'Save' and 'Close' button.
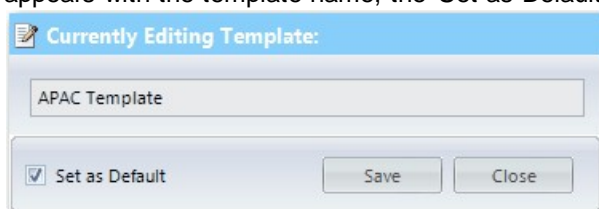
3. While the template is in 'Edit' mode, you can make all the changes to the file just like any ordinary file, except:

   a. You cannot switch to another file window

   b. Use the standard 'File' menu to start a new file, open an existing file, save the file or close the file.

4. Once your edits are complete, if you wish to save the changes, click 'Save' on the floating dialog. If the template name is not changed, it will overwrite the existing template, otherwise a new template will be created with the new name, and the original template will be retained

7.4.3 Deleting a Template

To set a template as a default:

1. Select the desired template from the 'Manage Templates' form - it must be a valid template with a green tick in the 'Status'.\

2. Click on the [Delete] button. A message will appear.
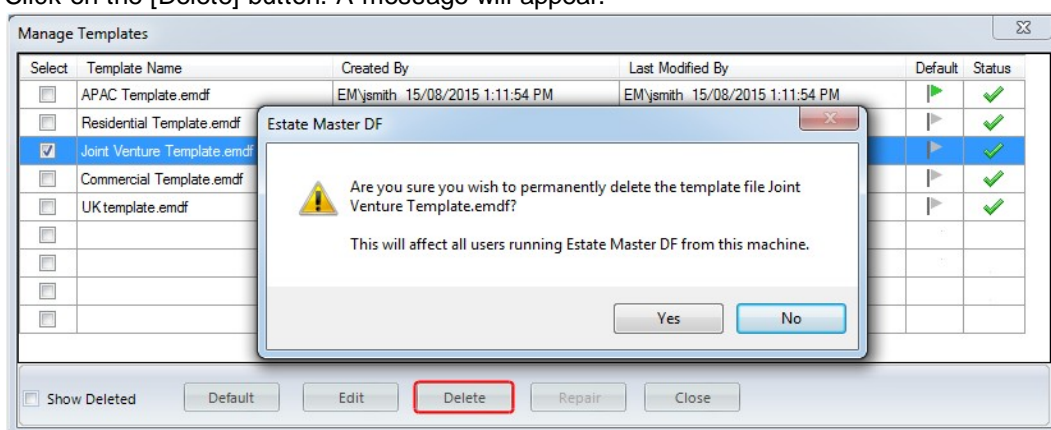
3. If you click 'Yes', it will physically delete the file from the template folder. It will however remain in the list and can be displayed when 'Show Deleted' is ticked; it will have a a red cross in the 'Status' field to indicate it has been deleted, and the 'Last Modified By' field will indicate who deleted the file, and when.
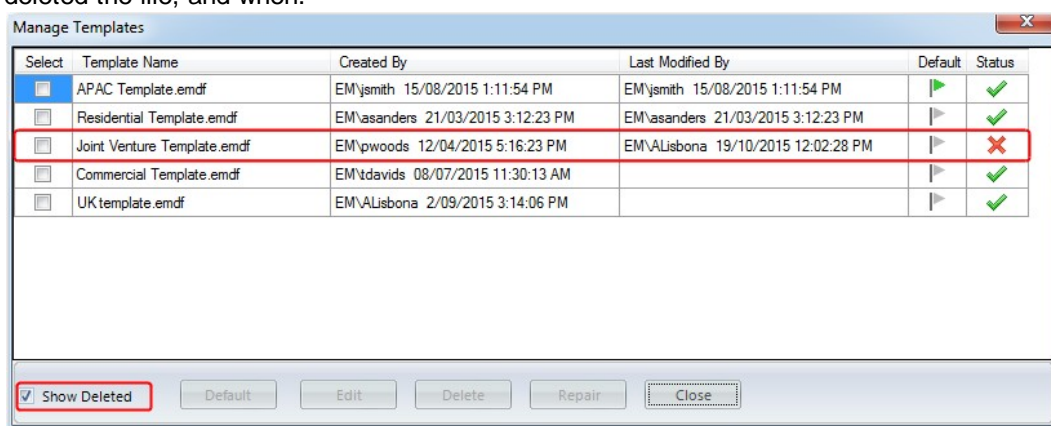
4. Once a template has been deleted using this method, the only option available to it in the 'Manage Templates function is to remove it from the list permanently or select another file for it, both via the 'Repair' function.

Important Note:

- Do not delete templates directly from the Template Folder via Windows Explorer - always use the 'Manage Templates' function to do so.

- If a template has been moved/deleted from the Template Folder via Windows Explorer, it will appear in the list marked with a warning icon in the 'Status' and it will need to be 'repaired' to either remove it from the list permanently or select another file for it.

7.4.4   Repairing Invalid Templates

An 'invalid' template is:

A template that has been deleted using the 'Delete' function in the Manage Templates form (these will appear when the 'Show Deleted' option is ticked, or

A template that was originally created, but can no longer be found by the ARGUS EstateMaster DM application. This could have been caused by the template file being manually moved or deleted by a user via Windows Explorer.
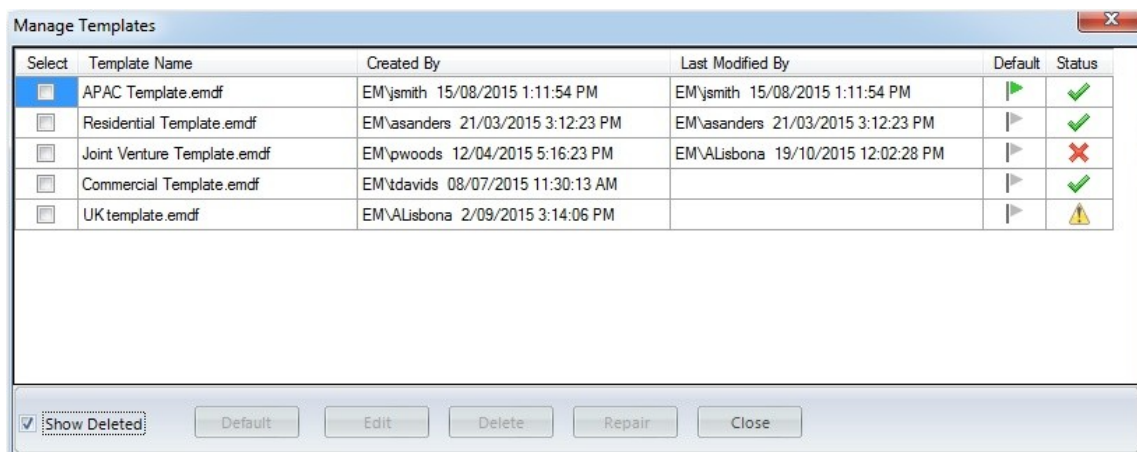
When an 'invalid' template is selected in the 'Manage Templates' form, the [Repair] button will be enabled.If this is clicked, the following options will be available for that template:

- **Remove File:** Permanently remove the template details from the 'Manage Templates' listing.

- **Select New File:** Browse for another ARGUS EstateMaster DM file to act as the selected template. If the file chosen has a different name than the invalid template being 'repaired', then it will be automatically renamed to match the original template name.

Part

VIII
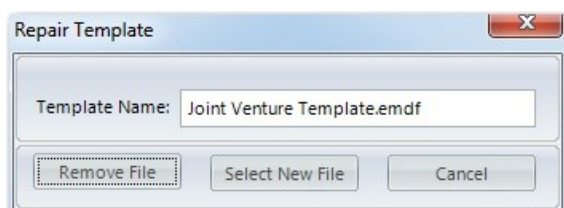
8 Integration with Microsoft Excel and Word

8.1 Linking to Excel Files

Just like in Excel, you can use this feature to either create a formula in ARGUS EstateMaster DM that is referencing an external Excel file (an 'Incoming' link), or you can create a formula in an external Excel file that is referencing the ARGUS EstateMaster DM file (an 'Outgoing' link).
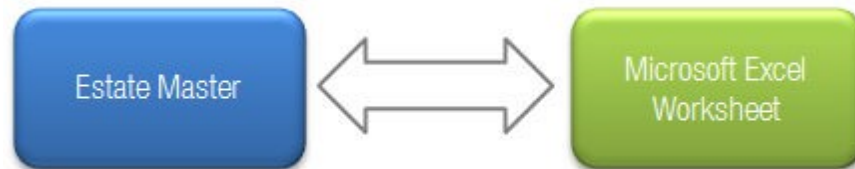
Creating an Excel Link

1. Click on the [Excel] button in the 'Office Links' menu.

2. A dialog will appear. Click on the [Add New Link] button.

   Please Note: Only 1 ARGUS EstateMaster DM window (i.e file) can be open when loading an external Excel file. If there are multiple ARGUS EstateMaster DM windows open in the application, it will prompt you to close down the other windows before trying to add a new link.
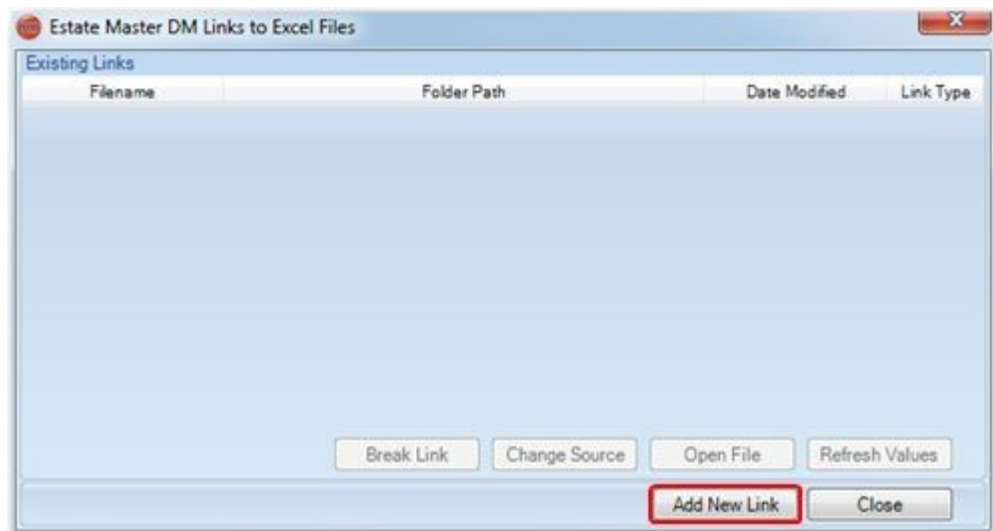
3. Browse to the Excel file you want to open and create links with. Select the file and press [Open].
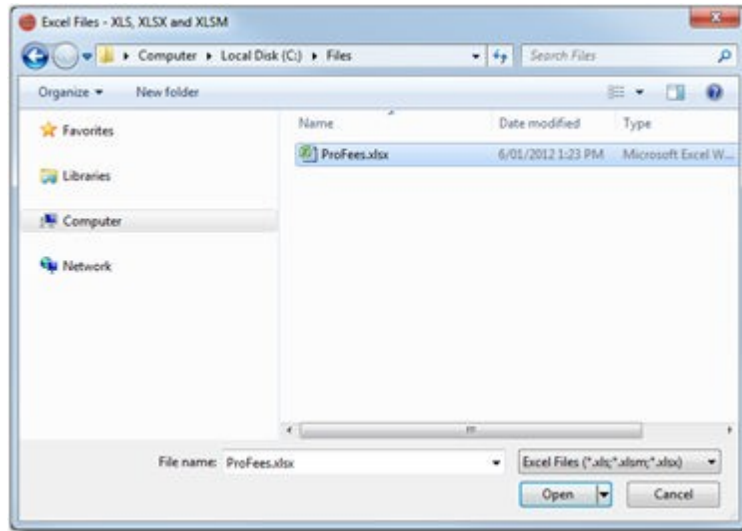
4. The ARGUS EstateMaster DM application window will re-adjust to show the ARGUS EstateMaster DM file and Excel file as individual cascading windows.
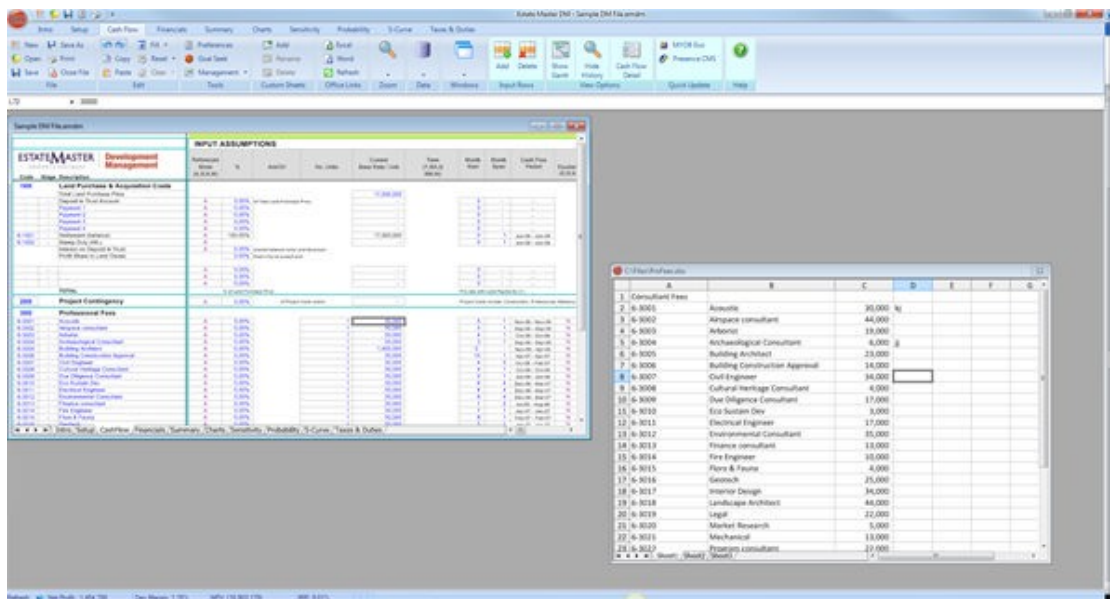
5. While these windows are displayed, you can write formulae in either one that reference the other, just by selecting a cell, starting to write a formula, and then selecting the other file to select a cell/range to refer to in that formula.

6. When you are completed linking your files, you will need to close the Excel file. This can be done by clicking on the Close button (red X) on the top right of the window.
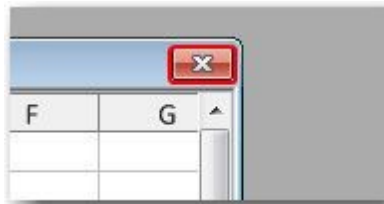
7. If any changes were made to the Excel file, it will ask you if you want to save these changes before closing the file.

   Please Note: If you save the file, some features that are not completely supported by this spreadsheet interface may be lost (including, but not limited to, items such as Form/ActiveX Controls, Pivot Charts, Cell Comments, Cell Gradients, Excel 2007-style Conditional Format options, Excel 2007-style Tables and Structured References, OLE objects (Camera, Embedded Documents, etc) and Shape fill effects and shadows).

8. At any time you can click on the [Excel] button in the 'Office Links' menu to reload the dialog where you can:

   - View a list of all files linking to the ARGUS EstateMaster DM file, where they are located and whether they have Incoming, Outgoing or multi-directional links.

   - Click **[Break Link]**, to remove the selected Excel file from being linked to the ARGUS EstateMaster DM files. After the file is saved and re-opened, any formulas in the ARGUS EstateMaster DM file that were referencing this Excel file will be:

     o On Standard Worksheets: Loaded as its last known calculated 'value' (no formula). This will allow the model to continue calculating without issues.

     o On Custom Worksheets: Converted to text, by adding an apostrophe before the '=' in the formula. This will allow the user to check and amend the formula where necessary.

   - Click **[Change Source]**, to change the location of the selected Excel file. This will prompt you to browse to another file, and the program will search for all formulae where the old Excel

file was referenced, and replace it with the name of the newly selected Excel file. During such process, if any of the formulae becomes invalid (due to worksheet or range name that existed in the old Excel file, but not in the new one), there following will occur to such formulae:

- o On Standard Worksheets: Converted to its last known calculated 'value' (no formula). This will allow the model to continue calculating without issues.

- o On Custom Worksheets: Converted to text, by adding an apostrophe before the '=' in the formula. This will allow the user to check and amend the formula where necessary.

In addition, a warning will appear, listing the worksheets where such invalid formulae were found after the 'Change Source' process was completed, and cell comments will be added to the actual cells where the invalid formulae were processed.
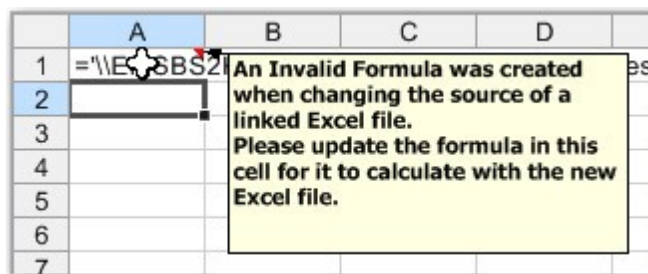
Example showing a red cell comment where an invalid formula was created as a result of a 'Change Source'

- • Click **[Open File]** to open the selected Excel file again to change/add links.

- • Click [**Refresh Values**] to momentarily open the selected Excel file to refresh the results.

- • Click **[Add New Link]** to add a link to another Excel file.
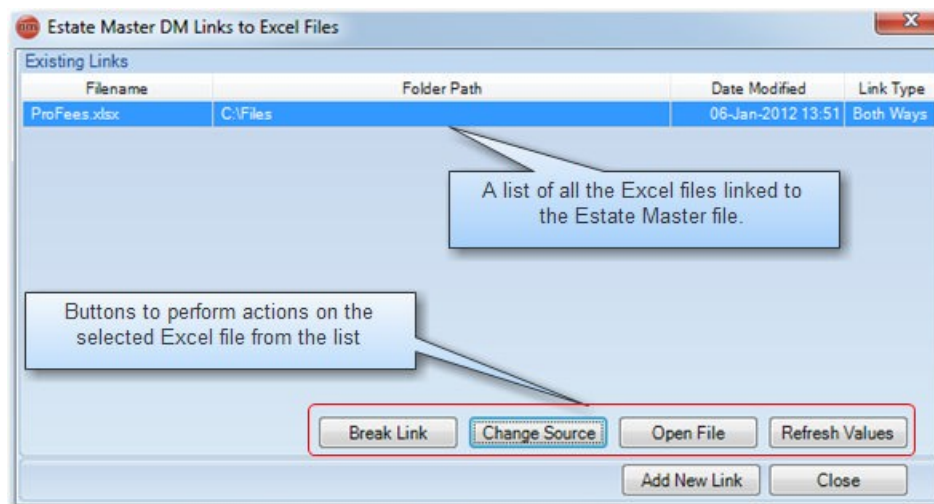
9. If there are an external Excel files that have 'Incoming' links (i.e. there is a formula in the ARGUS EstateMaster DM file that is referencing the Excel file), a warning will appear in the Status bar if the program has detected that the Excel file has been modified since the last refresh. Clicking this warning, will momentarily open the Excel file(s) to refresh the results.
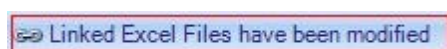
Renaming or Moving ARGUS EstateMaster DM Files

If you create a formula in an external Excel file that is referencing the ARGUS EstateMaster DM file (i.e. an 'Outgoing' link), the formula will contain the full path and file name of that ARGUS EstateMaster DM

file. Therefore if the ARGUS EstateMaster DM file is renamed and/or moved, either manually in Windows Explorer, or during a Save-As process, to maintain the integrity of any formulae in the external Excel file, the following will occur:

1. **During File Open:** No warning will be given to the user, as Outgoing links are not critical to the opening of the ARGUS EstateMaster DM file.

2. **During Office Links > Excel > 'Refresh Values' or 'Open File':** If it has detected that the ARGUS EstateMaster DM file has been renamed/moved (most likely via Windows Explorer) since the 'Outgoing' link was made to an Excel file, the user will be asked whether they wish to update the linked Excel files so any formulae now refer to the new one, or to break the link.
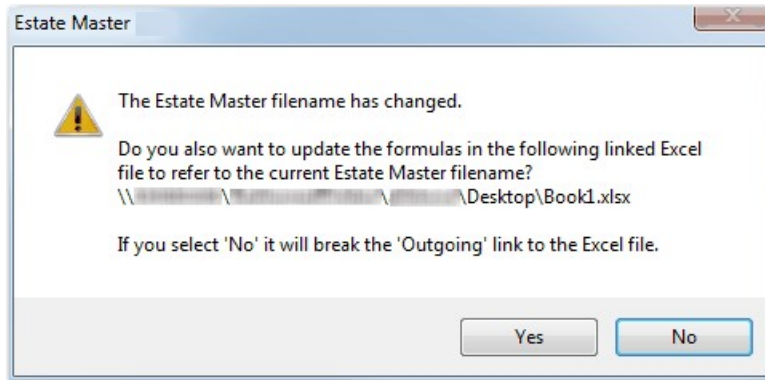
3. **During File Save:** As soon as the 'Save As' button is clicked, the user will be warned that the ARGUS EstateMaster DM file has 'Outgoing' links and if they continue with the 'Save As' and they change the file name and/or path, they will be prompted to either update the formulae in the linked Excel file(s) or break the link.
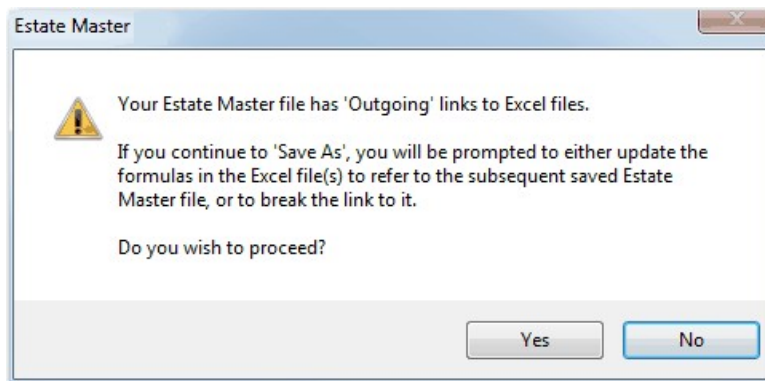
Using Square Brackets in File Names and Folders

Formula links reserve the use of square brackets [ ] in its syntax to enclose the source file, for example =SUM([Budget.xls]Annual!C10:C25). Therefore you cannot use these characters in the path to that source file, or in the file name itself. This applies to the Excel files used in an 'Incoming Link' to create a formula in ARGUS EstateMaster DM and also in ARGUS EstateMaster DM files used in an 'Outgoing Link' to create a formula in an Excel file.

Important Notes:

- If a user opens an ARGUS EstateMaster DM file that already had an 'Incoming' link to an Excel file that contained [and/or] in its file name or path (applies to previous versions of ARGUS EstateMaster DM) , then when it is next opened only values will be loaded into the input cells, not formulae.

- If an ARGUS EstateMaster DM file contains [and/or] in its file name or path, then the user will not be able to create any Excel Links at all.

- If an Excel file contains [and/or] in its file name or path, then the user will not be able to create any links to it.

- If the user attempts to save an ARGUS EstateMaster DM file with a file name or to a file path contains [and/or], they will not be able to.

8.2   Linking to Word Files

This feature allows you to populate fields in a Word document with data from an ARGUS EstateMaster DM file. This is done by selecting from a list of predefined ARGUS EstateMaster DMoutputs and linking them to a Word document that contains the required Bookmarks. A Bookmark is a feature in Word that identifies a location or a selection of text that you name and identify for future reference.
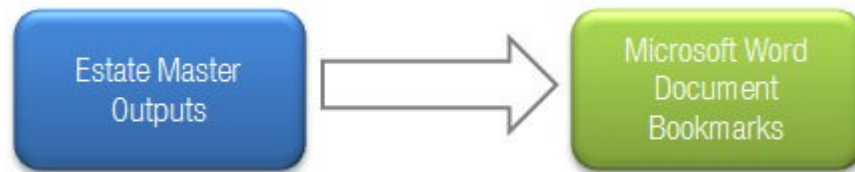
Creating Bookmarks in your Word Document

The first thing that needs to be done is to set up the Word document you wish to link to, with the required Bookmarks. Refer to the following Bookmarks Directory to see what ARGUS EstateMaster DM outputs are available and their corresponding Bookmark.

1. Open the document in Word.

2. Select a location, or highlight the text you wish to turn into a Bookmark.

3. Based on the ARGUS EstateMaster DM output that you want to appear in this location, type in the name of the Bookmark that corresponds to that output. For example, if you want to populate the selected location/text with the output of the 'Street Address' from the ARGUS EstateMaster DM file, the name of EMDM_Street must be given to that Bookmark. When done, press [Add].
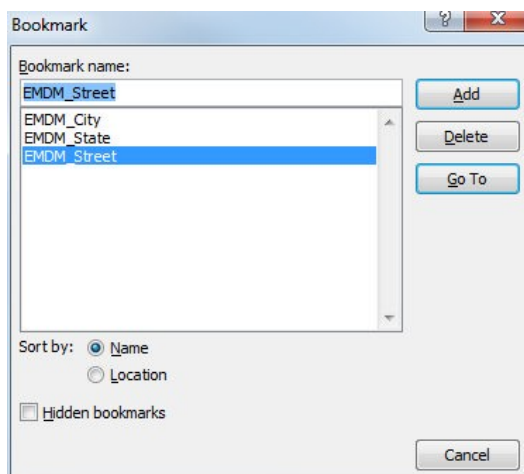
4. If you wish to highlight the Bookmarks in a Word document so you can easily identify them, there is a setting in the Word Options, under the Advanced section called 'Show Bookmarks'
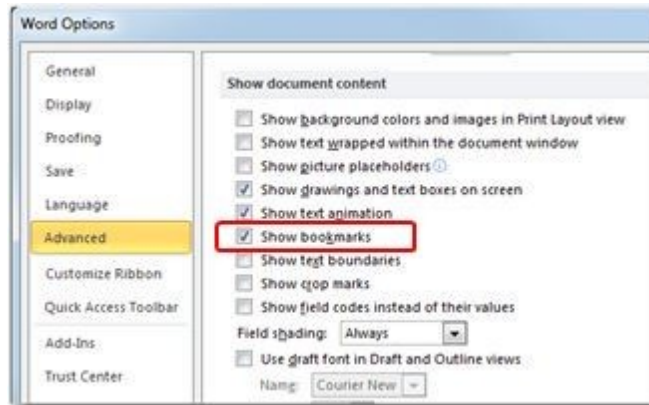
5. When selected, it will identify Bookmarks in the document with square brackets.
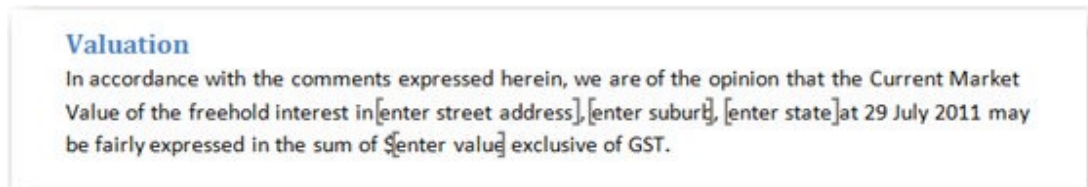
6. Once the Bookmarks have been created in the document, save and close the file.

Setting up a Link to the Word Document

1. Click on the [Word] button in the 'Office Links' menu.
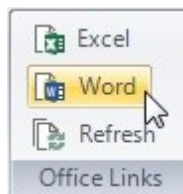
2. A dialog will appear. Click on the [Add New Link] button.
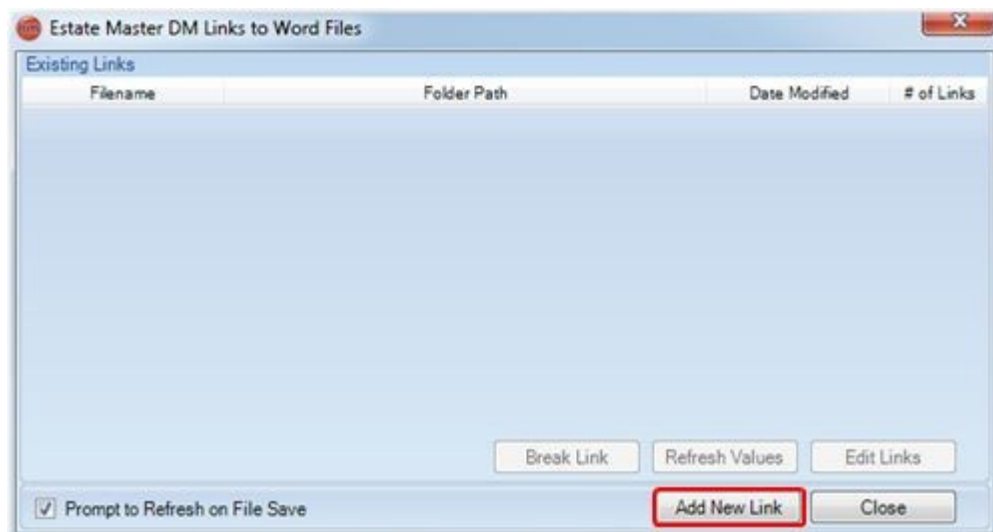
3. Browse to the Word file (*.docx, *.docm, *.dotx and *.dotm) you want to open and create links with. Select the file and press [Open].
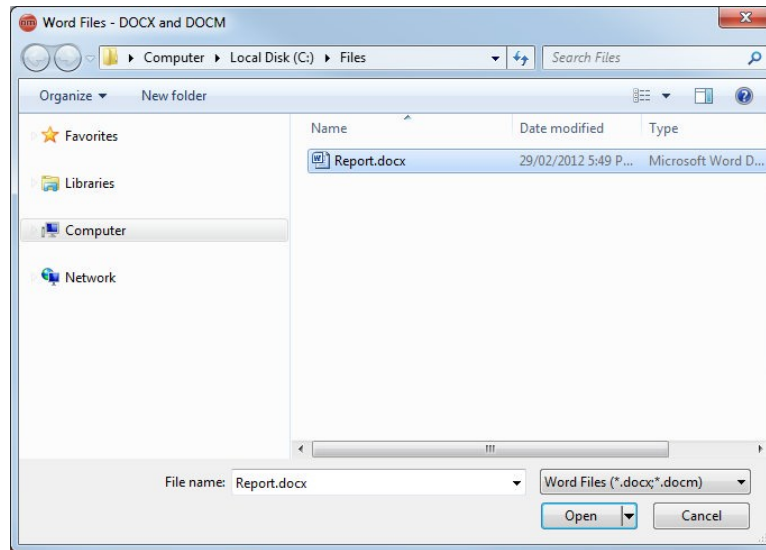
4. A new dialog will appear.

It will list all the ARGUS EstateMaster DM outputs that can be linked to a Word document, what section they belong to in the ARGUS EstateMaster DM file, and the related Bookmark name that must be inserted into that Word document for the link to be created.

The 'Status' will indicate if that Bookmark exists in that Word document already or not.

- If it does exist (green tick ✓), you can select so the Word file is updated with that ARGUS EstateMaster DM output. By default, when a new Word document is linked to an ARGUS EstateMaster DM file, all Bookmarks that exist in such document will be automatically selected when this dialog loads.

- If it doesn't exist (red cross ✗), but you do want to link to it, you will have to close the dialog and open the document in Word and add the bookmarks to that file before you can create the link.

5. Once you have selected the outputs you want to link, click [Save Links]. It will prompt you to refresh the Word document at that time.
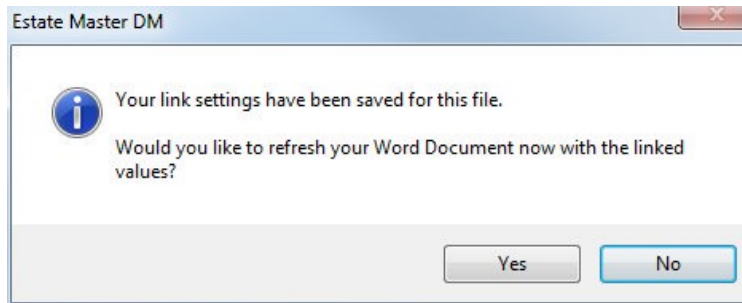
6. If you click [Yes], it will programmatically update the bookmarks in that Word document with the results of the selected outputs.

7. If you open the document in Word, you can see the end result.

8. At any time you can click on the [Word] button in the 'Office Links' menu to reload the dialog where you can:

- View a list of all files linking to the ARGUS EstateMaster DM file, where they are located and the number of outputs they are linked to.

- Click [Break Link], to remove the selected Word file from being linked to the ARGUS EstateMaster DM files.

- Click [Refresh Values] to momentarily refresh the Bookmarks in the selected Word file with update values.

- Click [Edit Links] to change the Bookmarks being linked to in the selected Word file.

- Click [Add New Link] to add a link to another Word file.

- Select an option to prompt the user to refresh Word links when saving a file to ensure that the Word document always has the latest results.
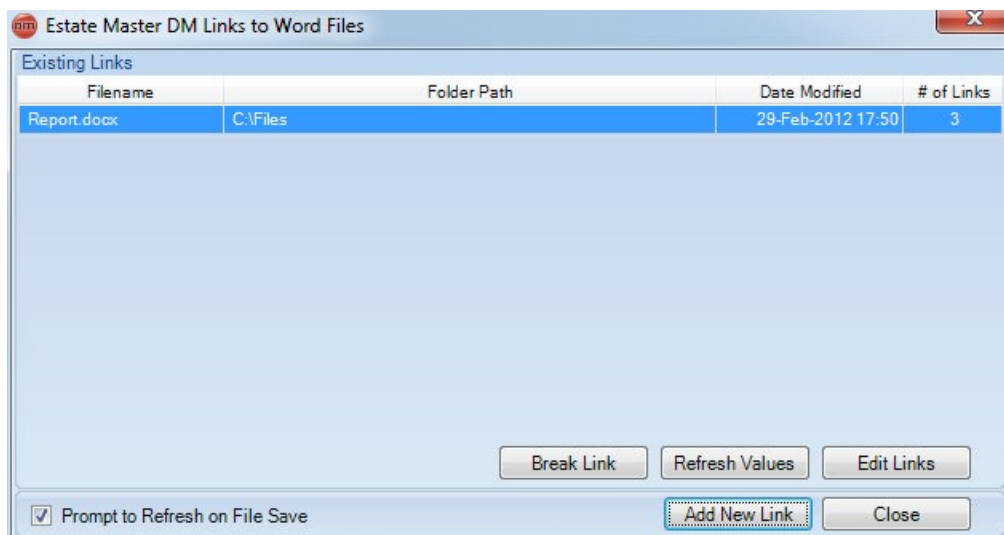
8.2.1 Word Bookmarks Directory

This is a list of the outputs from ARGUS EstateMaster DM, and their relative Bookmark name, that can be used to populate Word documents.

Output Description	Bookmark
Introduction	
Property Photo	EMDM_PropPhoto
Project Number	EMDM_ProjNo
Project	EMDM_Proj
Cash Flow Title	EMDM_CF
Description	EMDM_Desc
Prepared By	EMDM_PrepBy
Prepared For	EMDM_PrepFor
Developer	EMDM_Dev
Street Address	EMDM_Street
City/Suburb	EMDM_City
State/County	EMDM_State
Zip/Post Code	EMDM_PCode
Country	EMDM_Ctry
Key Metrics	
Time Span	EMDM_Span
Type	EMDM_Type
Status	EMDM_Status
Site Area	EMDM_Site
Project Size A	EMDM_SizeA
Project Size B	EMDM_SizeB
FSR	EMDM_FSR
Equated GFA	EMDM_EquGFA
Current Month	EMDM_CurrentMonth
Previous Forecast Month	EMDM_PreviousMonth
Project Budget Month	EMDM_ProjectMonth
Original Budget Month	EMDM_OriginalMonth
Revenues (Current Forecast)	
Total Sales Revenue	EMDM_GrossSale
Selling Costs	EMDM_SellCost
Purchasers Costs	EMDM_PurchCost
Net Sale Proceeds	EMDM_NetSale
Rental Income	EMDM_GrossRent
Outgoings & Vacancies	EMDM_OG
Letting Fees	EMDM_LetFee
Incentives (Rent Free and Fit-out Costs)	EMDM_Incent
Other Leasing Costs	EMDM_LeaseCost
Net Rental Income	EMDM_NetRent
Interest Received	EMDM_IntRec
Other Income	EMDM_OtherInc
Total Revenue (before Tax paid)	EMDM_RevBT
Tax paid on all Revenue	EMDM_RevTax
Total Revenue (after Tax paid)	EMDM_RevAT
Revenues (Previous Forecast)	
Total Sales Revenue	EMDM_GrossSale_Prev
Selling Costs	EMDM_SellCost_Prev
Purchasers Costs	EMDM_PurchCost_Prev
Net Sale Proceeds	EMDM_NetSale_Prev
Rental Income	EMDM_GrossRent_Prev
Outgoings & Vacancies	EMDM_OG_Prev
Letting Fees	EMDM_LetFee_Prev
Incentives (Rent Free and Fit-out Costs)	EMDM_Incent_Prev
Other Leasing Costs	EMDM_LeaseCost_Prev
Net Rental Income	EMDM_NetRent_Prev
Interest Received	EMDM_IntRec_Prev
Other Income	EMDM_OtherInc_Prev
Total Revenue (before Tax paid)	EMDM_RevBT_Prev
Tax paid on all Revenue	EMDM_RevTax_Prev
Total Revenue (after Tax paid)	EMDM_RevAT_Prev
Revenues (Project Budget)	
Total Sales Revenue	EMDM_GrossSale_Proj
Selling Costs	EMDM_SellCost_Proj

Purchasers Costs	EMDM_PurchCost_Proj
Net Sale Proceeds	EMDM_NetSale_Proj
Rental Income	EMDM_GrossRent_Proj
Outgoings & Vacancies	EMDM_OG_Proj
Letting Fees	EMDM_LetFee_Proj
Incentives (Rent Free and Fit-out Costs)	EMDM_Incent_Proj
Other Leasing Costs	EMDM_LeaseCost_Proj
Net Rental Income	EMDM_NetRent_Proj
Interest Received	EMDM_IntRec_Proj
Other Income	EMDM_OtherInc_Proj
Total Revenue (before Tax paid)	EMDM_RevBT_Proj
Tax paid on all Revenue	EMDM_RevTax_Proj
Total Revenue (after Tax paid)	EMDM_RevAT_Proj
Revenues (Original Budget)	
Total Sales Revenue	EMDM_GrossSale_Orig
Selling Costs	EMDM_SellCost_Orig
Purchasers Costs	EMDM_PurchCost_Orig
Net Sale Proceeds	EMDM_NetSale_Orig
Rental Income	EMDM_GrossRent_Orig
Outgoings & Vacancies	EMDM_OG_Orig
Letting Fees	EMDM_LetFee_Orig
Incentives (Rent Free and Fit-out Costs)	EMDM_Incent_Orig
Other Leasing Costs	EMDM_LeaseCost_Orig
Net Rental Income	EMDM_NetRent_Orig
Interest Received	EMDM_IntRec_Orig
Other Income	EMDM_OtherInc_Orig
Total Revenue (before Tax paid)	EMDM_RevBT_Orig
Tax paid on all Revenue	EMDM_RevTax_Orig
Total Revenue (after Tax paid)	EMDM_RevAT_Orig
Costs (Current Forecasts)	
Land Purchase Cost	EMDM_Land
Land Transaction Costs	EMDM_OthLand
Construction (inc. Construct. Contingency)	EMDM_Construct
Contingency	EMDM_ConstCont
Professional Fees	EMDM_ProFee
Statutory Fees	EMDM_StatFee
Miscellaneous Costs 1	EMDM_Misc1
Miscellaneous Costs 2	EMDM_Misc2
Miscellaneous Costs 3	EMDM_Misc3
Project Contingency (Project Reserve)	EMDM_ProjCont
Land Holding Costs	EMDM_LandHold
Pre-Sale Commissions	EMDM_PreComm
Finance Charges (inc. Fees)	EMDM_FinChg
Interest Expense	EMDM_IntExp
Total Costs (before Tax reclaimed)	EMDM_CostBT
Tax reclaimed	EMDM_CostTax
Corporate Tax	EMDM_CorpTax
Total Costs (afterTax reclaimed)	EMDM_CostAT
Costs (Previous Forecasts)	
Land Purchase Cost	EMDM_Land_Prev
Land Transaction Costs	EMDM_OthLand_Prev
Construction (inc. Construct. Contingency)	EMDM_Construct_Prev
Contingency	EMDM_ConstCont_Prev
Professional Fees	EMDM_ProFee_Prev
Statutory Fees	EMDM_StatFee_Prev
Miscellaneous Costs 1	EMDM_Misc1_Prev
Miscellaneous Costs 2	EMDM_Misc2_Prev
Miscellaneous Costs 3	EMDM_Misc3_Prev
Project Contingency (Project Reserve)	EMDM_ProjCont_Prev
Land Holding Costs	EMDM_LandHold_Prev
Pre-Sale Commissions	EMDM_PreComm_Prev
Finance Charges (inc. Fees)	EMDM_FinChg_Prev
Interest Expense	EMDM_IntExp_Prev
Total Costs (before Tax reclaimed)	EMDM_CostBT_Prev
Tax reclaimed	EMDM_CostTax_Prev
Corporate Tax	EMDM_CorpTax_Prev
Total Costs (afterTax reclaimed)	EMDM_CostAT_Prev
Costs (Project Budget)	

Land Purchase Cost	EMDM_Land_Proj
Land Transaction Costs	EMDM_OthLand_Proj
Construction (inc. Construct. Contingency)	EMDM_Construct_Proj
Contingency	EMDM_ConstCont_Proj
Professional Fees	EMDM_ProFee_Proj
Statutory Fees	EMDM_StatFee_Proj
Miscellaneous Costs 1	EMDM_Misc1_Proj
Miscellaneous Costs 2	EMDM_Misc2_Proj
Miscellaneous Costs 3	EMDM_Misc3_Proj
Project Contingency (Project Reserve)	EMDM_ProjCont_Proj
Land Holding Costs	EMDM_LandHold_Proj
Pre-Sale Commissions	EMDM_PreComm_Proj
Finance Charges (inc. Fees)	EMDM_FinChg_Proj
Interest Expense	EMDM_IntExp_Proj
Total Costs (before Tax reclaimed)	EMDM_CostBT_Proj
Tax reclaimed	EMDM_CostTax_Proj
Corporate Tax	EMDM_CorpTax_Proj
Total Costs (afterTax reclaimed)	EMDM_CostAT_Proj
Costs (Original Budget)	
Land Purchase Cost	EMDM_Land_Orig
Land Transaction Costs	EMDM_OthLand_Orig
Construction (inc. Construct. Contingency)	EMDM_Construct_Orig
Contingency	EMDM_ConstCont_Orig
Professional Fees	EMDM_ProFee_Orig
Statutory Fees	EMDM_StatFee_Orig
Miscellaneous Costs 1	EMDM_Misc1_Orig
Miscellaneous Costs 2	EMDM_Misc2_Orig
Miscellaneous Costs 3	EMDM_Misc3_Orig
Project Contingency (Project Reserve)	EMDM_OrigCont_Orig
Land Holding Costs	EMDM_LandHold_Orig
Pre-Sale Commissions	EMDM_PreComm_Orig
Finance Charges (inc. Fees)	EMDM_FinChg_Orig
Interest Expense	EMDM_IntExp_Orig
Total Costs (before Tax reclaimed)	EMDM_CostBT_Orig
Tax reclaimed	EMDM_CostTax_Orig
Corporate Tax	EMDM_CorpTax_Orig
Total Costs (afterTax reclaimed)	EMDM_CostAT_Orig
Key Performance Indicators (Current Forecast)	
Gross Development Profit	EMDM_GrossProf
Net Development Profit	EMDM_NetProf
Development Margin	EMDM_DevMgn
Net Present Value	EMDM_NPV
NPV of Future Cash Flows	EMDM_NPVFut
Discount Rate	EMDM_DiscRate
Benefit Cost Ratio	EMDM_BCR
Project Internal Rate of Return (IRR)	EMDM_IRR
Weighted Average Cost of Capital (WACC)	EMDM_WACC
Breakeven Date for Cumulative Cash Flow	EMDM_BEDate
Yield on Cost	EMDM_YldCost
Rent Cover	EMDM_RentCvr
Profit Erosion	EMDM_ProfErn
Key Performance Indicators (Previous Forecast)	
Gross Development Profit	EMDM_GrossProf_Prev
Net Development Profit	EMDM_NetProf_Prev
Development Margin	EMDM_DevMgn_Prev
Net Present Value	EMDM_NPV_Prev
NPV of Future Cash Flows	EMDM_NPVFut_Prev
Benefit Cost Ratio	EMDM_BCR_Prev
Project Internal Rate of Return (IRR)	EMDM_IRR_Prev
Weighted Average Cost of Capital (WACC)	EMDM_WACC_Prev
Breakeven Date for Cumulative Cash Flow	EMDM_BEDate_Prev
Yield on Cost	EMDM_YldCost_Prev
Rent Cover	EMDM_RentCvr_Prev
Profit Erosion	EMDM_ProfErn_Prev
Key Performance Indicators (Project Budget)	
Gross Development Profit	EMDM_GrossProf_Proj
Net Development Profit	EMDM_NetProf_Proj
Development Margin	EMDM_DevMgn_Proj

Net Present Value	EMDM_NPV_Proj
NPV of Future Cash Flows	EMDM_NPVFut_Proj
Benefit Cost Ratio	EMDM_BCR_Proj
Project Internal Rate of Return (IRR)	EMDM_IRR_Proj
Weighted Average Cost of Capital (WACC)	EMDM_WACC_Proj
Breakeven Date for Cumulative Cash Flow	EMDM_BEDate_Proj
Yield on Cost	EMDM_YldCost_Proj
Rent Cover	EMDM_RentCvr_Proj
Profit Erosion	EMDM_ProfErn_Proj
Key Performance Indicators (Original Budget)	
Gross Development Profit	EMDM_GrossProf_Orig
Net Development Profit	EMDM_NetProf_Orig
Development Margin	EMDM_DevMgn_Orig
Net Present Value	EMDM_NPV_Orig
NPV of Future Cash Flows	EMDM_NPVFut_Orig
Benefit Cost Ratio	EMDM_BCR_Orig
Project Internal Rate of Return (IRR)	EMDM_IRR_Orig
Weighted Average Cost of Capital (WACC)	EMDM_WACC_Orig
Breakeven Date for Cumulative Cash Flow	EMDM_BEDate_Orig
Yield on Cost	EMDM_YldCost_Orig
Rent Cover	EMDM_RentCvr_Orig
Profit Erosion	EMDM_ProfErn_Orig
Returns on Funds Invested - Equity (Current Forecast)	
Funds Invested (Cash Outlay)	EMDM_Eq_Funds
Peak Exposure	EMDM_Eq_Peak
Date of Peak Exposure	EMDM_Eq_DatePk
Weighted Average Interest Rate	EMDM_Eq_AvgRte
Interest Charged	EMDM_Eq_Int
Profit	EMDM_Eq_Prof
Margin on Funds Invested	EMDM_Eq_Mgn
Payback Date	EMDM_Eq_Pback
IRR on Funds Invested	EMDM_Eq_IRR
Loan to Value Ratio	EMDM_Eq_LVR
Returns on Funds Invested – Equity (Previous Forecast)	
Funds Invested (Cash Outlay)	EMDM_Eq_Funds_Prev
Peak Exposure	EMDM_Eq_Peak_Prev
Date of Peak Exposure	EMDM_Eq_DatePk_Prev
Weighted Average Interest Rate	EMDM_Eq_AvgRte_Prev
Interest Charged	EMDM_Eq_Int_Prev
Profit	EMDM_Eq_Prof_Prev
Margin on Funds Invested	EMDM_Eq_Mgn_Prev
Payback Date	EMDM_Eq_Pback_Prev
IRR on Funds Invested	EMDM_Eq_IRR_Prev
Loan to Value Ratio	EMDM_Eq_LVR_Prev
Returns on Funds Invested – Equity (Project Budget)	
Funds Invested (Cash Outlay)	EMDM_Eq_Funds_Proj
Peak Exposure	EMDM_Eq_Peak_Proj
Date of Peak Exposure	EMDM_Eq_DatePk_Proj
Weighted Average Interest Rate	EMDM_Eq_AvgRte_Proj
Interest Charged	EMDM_Eq_Int_Proj
Profit	EMDM_Eq_Prof_Proj
Margin on Funds Invested	EMDM_Eq_Mgn_Proj
Payback Date	EMDM_Eq_Pback_Proj
IRR on Funds Invested	EMDM_Eq_IRR_Proj
Loan to Value Ratio	EMDM_Eq_LVR_Proj
Returns on Funds Invested – Equity (Original Budget)	
Funds Invested (Cash Outlay)	EMDM_Eq_Funds_Orig
Peak Exposure	EMDM_Eq_Peak_Orig
Date of Peak Exposure	EMDM_Eq_DatePk_Orig
Weighted Average Interest Rate	EMDM_Eq_AvgRte_Orig
Interest Charged	EMDM_Eq_Int_Orig
Profit	EMDM_Eq_Prof_Orig
Margin on Funds Invested	EMDM_Eq_Mgn_Orig
Payback Date	EMDM_Eq_Pback_Orig
IRR on Funds Invested	EMDM_Eq_IRR_Orig
Loan to Value Ratio	EMDM_Eq_LVR_Orig

Returns on Funds Invested - Loans 1 to 10 (Current Forecast)	Where **#** = the Loan Number (i.e. "1" to "10")
Lender Name	EMDM_L#_Name
Funds Invested (Cash Outlay)	EMDM_L#_Funds
Peak Exposure	EMDM_L#_Peak
Date of Peak Exposure	EMDM_L#_DatePk
Weighted Average Interest Rate	EMDM_L#_AvgRte
Interest Charged	EMDM_L#_Int
Line Fees Charged	EMDM_L#_Line
Application Fees Charged	EMDM_L#_App
Profit Share Received	EMDM_L#_Share
Total Profit to Funder	EMDM_L#_Prof
Margin on Funds Invested	EMDM_L#_Mgn
Payback Date	EMDM_L#_Pback
IRR on Funds Invested	EMDM_L#_IRR
Loan to Value Ratio	EMDM_L#_LVR
Returns on Funds Invested - Loans 1 to 10 (Previous Forecast)	Where **#** = the Loan Number (i.e. "1" to "10")
Funds Invested (Cash Outlay)	EMDM_L#_Funds_Prev
Peak Exposure	EMDM_L#_Peak_Prev
Date of Peak Exposure	EMDM_L#_DatePk_Prev
Weighted Average Interest Rate	EMDM_L#_AvgRte_Prev
Interest Charged	EMDM_L#_Int_Prev
Line Fees Charged	EMDM_L#_Line_Prev
Application Fees Charged	EMDM_L#_App_Prev
Profit Share Received	EMDM_L#_Share_Prev
Total Profit to Funder	EMDM_L#_Prof_Prev
Margin on Funds Invested	EMDM_L#_Mgn_Prev
Payback Date	EMDM_L#_Pback_Prev
IRR on Funds Invested	EMDM_L#_IRR_Prev
Loan to Value Ratio	EMDM_L#_LVR_Prev
Returns on Funds Invested - Loans 1 to 10 (Project Budget)	Where **#** = the Loan Number (i.e. "1" to "10")
Funds Invested (Cash Outlay)	EMDM_L#_Funds_Proj
Peak Exposure	EMDM_L#_Peak_Proj
Date of Peak Exposure	EMDM_L#_DatePk_Proj
Weighted Average Interest Rate	EMDM_L#_AvgRte_Proj
Interest Charged	EMDM_L#_Int_Proj
Line Fees Charged	EMDM_L#_Line_Proj
Application Fees Charged	EMDM_L#_App_Proj
Profit Share Received	EMDM_L#_Share_Proj
Total Profit to Funder	EMDM_L#_Prof_Proj
Margin on Funds Invested	EMDM_L#_Mgn_Proj
Payback Date	EMDM_L#_Pback_Proj
IRR on Funds Invested	EMDM_L#_IRR_Proj
Loan to Value Ratio	EMDM_L#_LVR_Proj
Returns on Funds Invested - Loans 1 to 10 (Original Budget)	Where **#** = the Loan Number (i.e. "1" to "10")
Funds Invested (Cash Outlay)	EMDM_L#_Funds_Orig
Peak Exposure	EMDM_L#_Peak_Orig
Date of Peak Exposure	EMDM_L#_DatePk_Orig
Weighted Average Interest Rate	EMDM_L#_AvgRte_Orig
Interest Charged	EMDM_L#_Int_Orig
Line Fees Charged	EMDM_L#_Line_Orig
Application Fees Charged	EMDM_L#_App_Orig
Profit Share Received	EMDM_L#_Share_Orig
Total Profit to Funder	EMDM_L#_Prof_Orig
Margin on Funds Invested	EMDM_L#_Mgn_Orig
Payback Date	EMDM_L#_Pback_Orig
IRR on Funds Invested	EMDM_L#_IRR_Orig
Loan to Value Ratio	EMDM_L#_LVR_Orig
Returns on Funds Invested - Senior Loan (Current Forecast)	
Lender Name	EMDM_Snr_Name
Funds Invested (Cash Outlay)	EMDM_Snr_Funds
Peak Exposure	EMDM_Snr_Peak
Date of Peak Exposure	EMDM_Snr_DatePk
Weighted Average Interest Rate	EMDM_Snr_AvgRte
Interest Charged	EMDM_Snr_Int
Line Fees Charged	EMDM_Snr_Line

Application Fees Charged	EMDM_Snr_App
Total Profit to Funder	EMDM_Snr_Prof
Margin on Funds Invested	EMDM_Snr_Mgn
Payback Date	EMDM_Snr_Pback
IRR on Funds Invested	EMDM_Snr_IRR
Loan to Value Ratio	EMDM_Snr_LVR
Returns on Funds Invested - Senior Loan (Previous Forecast)	
Funds Invested (Cash Outlay)	EMDM_Snr_Funds_Prev
Peak Exposure	EMDM_Snr_Peak_Prev
Date of Peak Exposure	EMDM_Snr_DatePk_Prev
Weighted Average Interest Rate	EMDM_Snr_AvgRte_Prev
Interest Charged	EMDM_Snr_Int_Prev
Line Fees Charged	EMDM_Snr_Line_Prev
Application Fees Charged	EMDM_Snr_App_Prev
Total Profit to Funder	EMDM_Snr_Prof_Prev
Margin on Funds Invested	EMDM_Snr_Mgn_Prev
Payback Date	EMDM_Snr_Pback_Prev
IRR on Funds Invested	EMDM_Snr_IRR_Prev
Loan to Value Ratio	EMDM_Snr_LVR_Prev
Returns on Funds Invested - Senior Loan (Project Budget)	
Funds Invested (Cash Outlay)	EMDM_Snr_Funds_Proj
Peak Exposure	EMDM_Snr_Peak_Proj
Date of Peak Exposure	EMDM_Snr_DatePk_Proj
Weighted Average Interest Rate	EMDM_Snr_AvgRte_Proj
Interest Charged	EMDM_Snr_Int_Proj
Line Fees Charged	EMDM_Snr_Line_Proj
Application Fees Charged	EMDM_Snr_App_Proj
Total Profit to Funder	EMDM_Snr_Prof_Proj
Margin on Funds Invested	EMDM_Snr_Mgn_Proj
Payback Date	EMDM_Snr_Pback_Proj
IRR on Funds Invested	EMDM_Snr_IRR_Proj
Loan to Value Ratio	EMDM_Snr_LVR_Proj
Returns on Funds Invested - Senior Loan (Original Budget)	
Funds Invested (Cash Outlay)	EMDM_Snr_Funds_Orig
Peak Exposure	EMDM_Snr_Peak_Orig
Date of Peak Exposure	EMDM_Snr_DatePk_Orig
Weighted Average Interest Rate	EMDM_Snr_AvgRte_Orig
Interest Charged	EMDM_Snr_Int_Orig
Line Fees Charged	EMDM_Snr_Line_Orig
Application Fees Charged	EMDM_Snr_App_Orig
Total Profit to Funder	EMDM_Snr_Prof_Orig
Margin on Funds Invested	EMDM_Snr_Mgn_Orig
Payback Date	EMDM_Snr_Pback_Orig
IRR on Funds Invested	EMDM_Snr_IRR_Orig
Loan to Value Ratio	EMDM_Snr_LVR_Orig
Returns on Funds Invested - Total Debt (Current Forecast)	
Funds Invested (Cash Outlay)	EMDM_Debt_Funds
Peak Exposure	EMDM_Debt_Peak
Date of Peak Exposure	EMDM_Debt_DatePk
Weighted Average Interest Rate	EMDM_Debt_AvgRte
Interest Charged	EMDM_Debt_Int
Line Fees Charged	EMDM_Debt_Line
Application Fees Charged	EMDM_Debt_App
Profit Share Received	EMDM_Debt_Share
Total Profit to Funder(s)	EMDM_Debt_Prof
Margin on Funds Invested	EMDM_Debt_Mgn
Payback Date	EMDM_Debt_Pback
Equity to Debt Ratio	EMDM_Debt_IRR
Loan to Value Ratio	EMDM_Debt_LVR
Returns on Funds Invested - Total Debt (Previous Forecast)	
Funds Invested (Cash Outlay)	EMDM_Debt_Funds_Prev
Peak Exposure	EMDM_Debt_Peak_Prev
Date of Peak Exposure	EMDM_Debt_DatePk_Prev
Weighted Average Interest Rate	EMDM_Debt_AvgRte_Prev
Interest Charged	EMDM_Debt_Int_Prev
Line Fees Charged	EMDM_Debt_Line_Prev

Application Fees Charged	EMDM_Debt_App_Prev
Profit Share Received	EMDM_Debt_Share_Prev
Total Profit to Funder(s)	EMDM_Debt_Prof_Prev
Margin on Funds Invested	EMDM_Debt_Mgn_Prev
Payback Date	EMDM_Debt_Pback_Prev
Equity to Debt Ratio	EMDM_Debt_IRR_Prev
Loan to Value Ratio	EMDM_Debt_LVR_Prev
Returns on Funds Invested - Total Debt (Project Budget)	
Funds Invested (Cash Outlay)	EMDM_Debt_Funds_Proj
Peak Exposure	EMDM_Debt_Peak_Proj
Date of Peak Exposure	EMDM_Debt_DatePk_Proj
Weighted Average Interest Rate	EMDM_Debt_AvgRte_Proj
Interest Charged	EMDM_Debt_Int_Proj
Line Fees Charged	EMDM_Debt_Line_Proj
Application Fees Charged	EMDM_Debt_App_Proj
Profit Share Received	EMDM_Debt_Share_Proj
Total Profit to Funder(s)	EMDM_Debt_Prof_Proj
Margin on Funds Invested	EMDM_Debt_Mgn_Proj
Payback Date	EMDM_Debt_Pback_Proj
Equity to Debt Ratio	EMDM_Debt_IRR_Proj
Loan to Value Ratio	EMDM_Debt_LVR_Proj
Returns on Funds Invested - Total Debt (Original Budget)	
Funds Invested (Cash Outlay)	EMDM_Debt_Funds_Orig
Peak Exposure	EMDM_Debt_Peak_Orig
Date of Peak Exposure	EMDM_Debt_DatePk_Orig
Weighted Average Interest Rate	EMDM_Debt_AvgRte_Orig
Interest Charged	EMDM_Debt_Int_Orig
Line Fees Charged	EMDM_Debt_Line_Orig
Application Fees Charged	EMDM_Debt_App_Orig
Profit Share Received	EMDM_Debt_Share_Orig
Total Profit to Funder(s)	EMDM_Debt_Prof_Orig
Margin on Funds Invested	EMDM_Debt_Mgn_Orig
Payback Date	EMDM_Debt_Pback_Orig
Equity to Debt Ratio	EMDM_Debt_IRR_Orig
Loan to Value Ratio	EMDM_Debt_LVR_Orig
Actuals to Date - Costs	
Land Purchase Cost	EMDM_Land_CTD
Land Transaction Costs	EMDM_OthLand_CTD
Construction (inc. Construct. Contingency)	EMDM_Construct_CTD
Contingency	EMDM_ConstCont_CTD
Professional Fees	EMDM_ProFee_CTD
Statutory Fees	EMDM_StatFee_CTD
Miscellaneous Costs 1	EMDM_Misc1_CTD
Miscellaneous Costs 2	EMDM_Misc2_CTD
Miscellaneous Costs 3	EMDM_Misc3_CTD
Project Contingency (Project Reserve)	EMDM_ProjCont_CTD
Land Holding Costs	EMDM_LandHold_CTD
Pre-Sale Commissions	EMDM_PreComm_CTD
Finance Charges (inc. Fees)	EMDM_FinChg_CTD
Interest Expense	EMDM_IntExp_CTD
Tax Reclaimed	EMDM_CostTax_CTD
Corporate Tax	EMDM_CorpTax_CTD
Actuals to Date - Revenue	
Sales Revenue	EMDM_GrossSale_CTD
Selling Costs	EMDM_SellCost_CTD
Purchasers Costs	EMDM_PurchCost_CTD
Rental Income	EMDM_GrossRent_CTD
Outgoings & Vacancies	EMDM_OG_CTD
Letting Fees	EMDM_LetFee_CTD
Incentives (Rent Free and Fit-out Costs)	EMDM_Incent_CTD
Other Leasing Costs	EMDM_LeaseCost_CTD
Interest Received	EMDM_IntRec_CTD
Other Income	EMDM_OtherInc_CTD
Tax paid on all Revenue	EMDM_RevTax_CTD
Sensitivity Analysis	
Construction Costs Hi Variation Rate	EMDM_SensConstHi
Construction Costs Lo Variation Rate	EMDM_SensConstLo

Construction Costs Hi Variation - Net Profit	EMDM_SensConstHi_Profit
Construction Costs Lo Variation - Net Profit	EMDM_SensConstLo_Profit
Construction Costs Hi Variation - NPV	EMDM_SensConstHi_NPV
Construction Costs Lo Variation - NPV	EMDM_SensConstLo_NPV
Construction Costs Hi Variation - Dev. Margin	EMDM_SensConstHi_Mgn
Construction Costs Lo Variation - Dev. Margin	EMDM_SensConstLo_Mgn
Construction Costs Hi Variation - Project IRR	EMDM_SensConstHi_IRR
Construction Costs Lo Variation - Project IRR	EMDM_SensConstLo_IRR
Construction Costs Hi Variation - Equity IRR	EMDM_SensConstHi_Equ
Construction Costs Lo Variation - Equity IRR	EMDM_SensConstLo_ Equ
Construction Period Hi Variation Rate	EMDM_SensConPeriodHi
Construction Period Lo Variation Rate	EMDM_SensConPeriodLo
Construction Period Hi Variation - Net Profit	EMDM_SensConPeriodHi_Profit
Construction Period Lo Variation - Net Profit	EMDM_SensConPeriodLo_Profit
Construction Period Hi Variation - NPV	EMDM_SensConPeriodHi_NPV
Construction Period Lo Variation - NPV	EMDM_SensConPeriodLo_NPV
Construction Period Hi Variation - Dev. Margin	EMDM_SensConPeriodHi_Mgn
Construction Period Lo Variation - Dev. Margin	EMDM_SensConPeriodLo_Mgn
Construction Period Hi Variation - Project IRR	EMDM_SensConPeriodHi_IRR
Construction Period Lo Variation - Project IRR	EMDM_SensConPeriodLo_IRR
Construction Period Hi Variation - Equity IRR	EMDM_SensConPeriodHi_Equ
Construction Period Lo Variation - Equity IRR	EMDM_SensConPeriodLo_ Equ
End Sale Values Hi Variation Rate	EMDM_SensSalesHi
End Sale Values Lo Variation Rate	EMDM_SensSalesLo
End Sale Values Hi Variation - Net Profit	EMDM_SensSalesHi_Profit
End Sale Values Lo Variation - Net Profit	EMDM_SensSalesLo_Profit
End Sale Values Hi Variation - NPV	EMDM_SensSalesHi_NPV
End Sale Values Lo Variation - NPV	EMDM_SensSalesLo_NPV
End Sale Values Hi Variation - Dev. Margin	EMDM_SensSalesHi_Mgn
End Sale Values Lo Variation - Dev. Margin	EMDM_SensSalesLo_Mgn
End Sale Values Hi Variation - Project IRR	EMDM_SensSalesHi_IRR
End Sale Values Lo Variation - Project IRR	EMDM_SensSalesLo_IRR
End Sale Values Hi Variation - Equity IRR	EMDM_SensSalesHi_Equ
End Sale Values Lo Variation - Equity IRR	EMDM_SensSalesLo_ Equ
Cap Rate Hi Variation Rate	EMDM_SensCapHi
Cap Rate Lo Variation Rate	EMDM_SensCapLo
Cap Rate Hi Variation - Net Profit	EMDM_SensCapHi_Profit
Cap Rate Lo Variation - Net Profit	EMDM_SensCapLo_Profit
Cap Rate Hi Variation - NPV	EMDM_SensCapHi_NPV
Cap Rate Lo Variation - NPV	EMDM_SensCapLo_NPV
Cap Rate Hi Variation - Dev. Margin	EMDM_SensCapHi_Mgn
Cap Rate Lo Variation - Dev. Margin	EMDM_SensCapLo_Mgn
Cap Rate Hi Variation - Project IRR	EMDM_SensCapHi_IRR
Cap Rate Lo Variation - Project IRR	EMDM_SensCapLo_IRR
Cap Rate Hi Variation - Equity IRR	EMDM_SensCapHi_Equ
Cap Rate Lo Variation - Equity IRR	EMDM_SensCapLo_ Equ
Sales Span Hi Variation Rate	EMDM_SensSpanHi
Sales Span Lo Variation Rate	EMDM_SensSpanLo
Sales Span Hi Variation - Net Profit	EMDM_SensSpanHi_Profit
Sales Span Lo Variation - Net Profit	EMDM_SensSpanLo_Profit
Sales Span Hi Variation - NPV	EMDM_SensSpanHi_NPV
Sales Span Lo Variation - NPV	EMDM_SensSpanLo_NPV
Sales Span Hi Variation - Dev. Margin	EMDM_SensSpanHi_Mgn
Sales Span Lo Variation - Dev. Margin	EMDM_SensSpanLo_Mgn
Sales Span Hi Variation - Project IRR	EMDM_SensSpanHi_IRR
Sales Span Lo Variation - Project IRR	EMDM_SensSpanLo_IRR
Sales Span Hi Variation - Equity IRR	EMDM_SensSpanHi_Equ
Sales Span Lo Variation - Equity IRR	EMDM_SensSpanLo_ Equ
Rental Income Hi Variation Rate	EMDM_SensRentHi
Rental Income Lo Variation Rate	EMDM_SensRentLo
Rental Income Hi Variation - Net Profit	EMDM_SensRentHi_Profit
Rental Income Lo Variation - Net Profit	EMDM_SensRentLo_Profit
Rental Income Hi Variation - NPV	EMDM_SensRentHi_NPV
Rental Income Lo Variation - NPV	EMDM_SensRentLo_NPV
Rental Income Hi Variation - Dev. Margin	EMDM_SensRentHi_Mgn
Rental Income Lo Variation - Dev. Margin	EMDM_SensRentLo_Mgn
Rental Income Hi Variation - Project IRR	EMDM_SensRentHi_IRR
Rental Income Lo Variation - Project IRR	EMDM_SensRentLo_IRR
Rental Income Hi Variation - Equity IRR	EMDM_SensRentHi_Equ
Rental Income Lo Variation - Equity IRR	EMDM_SensRentLo_ Equ

Debt Interest Rates Hi Variation Rate	EMDM_SensDebtHi
Debt Interest Rates Lo Variation Rate	EMDM_SensDebtLo
Debt Interest Rates Hi Variation - Net Profit	EMDM_SensDebtHi_Profit
Debt Interest Rates Lo Variation - Net Profit	EMDM_SensDebtLo_Profit
Debt Interest Rates Hi Variation - NPV	EMDM_SensDebtHi_NPV
Debt Interest Rates Lo Variation - NPV	EMDM_SensDebtLo_NPV
Debt Interest Rates Hi Variation - Dev. Margin	EMDM_SensDebtHi_Mgn
Debt Interest Rates Lo Variation - Dev. Margin	EMDM_SensDebtLo_Mgn
Debt Interest Rates Hi Variation - Project IRR	EMDM_SensDebtHi_IRR
Debt Interest Rates Lo Variation - Project IRR	EMDM_SensDebtLo_IRR
Debt Interest Rates Hi Variation - Equity IRR	EMDM_SensDebtHi_Equ
Debt Interest Rates Lo Variation - Equity IRR	EMDM_SensDebtLo_Equ
Discount Rates Hi Variation Rate	EMDM_SensDiscHi
Discount Rates Lo Variation Rate	EMDM_SensDiscLo
Discount Rates Hi Variation - NPV	EMDM_SensDiscHi_NPV
Discount Rates Lo Variation - NPV	EMDM_SensDiscLo_NPV

8.2.2   Creating Custom Bookmarks

If there is data in the ARGUS EstateMaster DM file that is not listed in the standard Word Bookmarks Directory, and you wish to have it linked to a Word Document, you can use the Custom Data Export feature to define this data and have it selectable in a 'Custom' Word Bookmarks Directory. This makes the amount of ARGUS EstateMaster DM file data being able to be linked to a Word Document almost endless.

Data (Values, Tables, Reports, etc)

1. If the data exists on a standard ARGUS EstateMaster DM worksheet, you will need to first link it on a custom worksheet, including any formatting you want to apply to it. If the data does not exist anywhere yet (i.e. a custom calculaiton), prepare it on a custom worksheet.
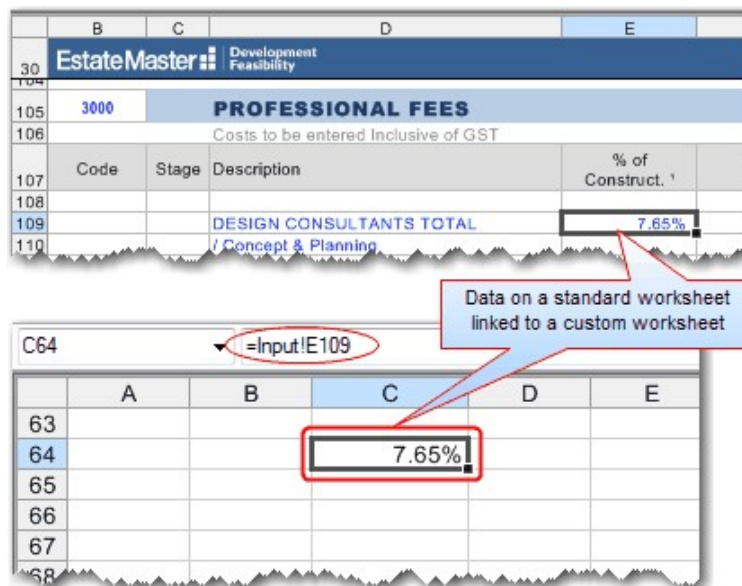
2. Once the formatted data is on a custom worksheet, use the Custom Data Export feature to define the cell or range of cells that you wish to assign a custom bookmark to, and give it a Description.
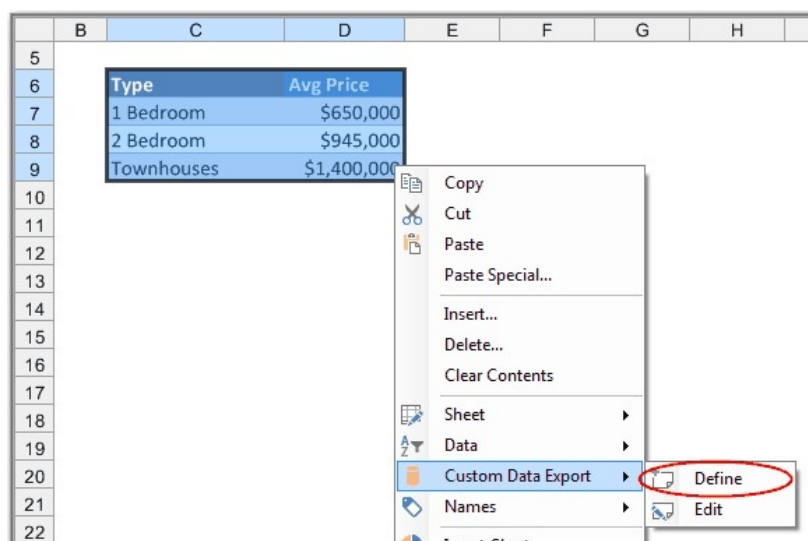
3. The Bookmark that will be assigned to it will be **EM_**_<Product Initials>_**_C_**_<Description with underscores replacing spaces>_

Dynamic Table Data

In-built into the functionality of exporting tabular (mult-cell) data to a linked Word Document, is a feature where any blank rows or columns in a defined range of cells is automatically hidden before the table is exported to Word, and then unhidden back to its original state after the process is completed. This allows the user to create tables that dynamically expand/contract based on the data they have calculated/entered in them.

The feature works by searching the cell contents of each cell for each row and column; if an entire row/column has no values in the cells (including formulas which may return an 'empty' value), then it is hidden from the final output that is exported to Word. Therefore, if you wish to intentionally have an empty row/column included in the export, just ensure that at least one cell in that row/column has any value in it - if you do not want this visible, then change the font colour to the same as the cell background.

To take advantage of this feature, ensure that any formulas return an empty result (i.e. "") instead of a Zero value (i.e. "0") in all cells in the row/column if you want it hidden.

Charts

1. If there are any Charts on a custom worksheet, these will automatically have the following Bookmark assigned to it: **EM_**_<Product Initials>_**_C_**_<Chart Title with underscores replacing spaces and special characters removed>_.

2. Since the program uses the Chart Title for the Bookmark Name, it is important to ensure that Charts on custom worksheets are all given unique Titles, and are not left blank.

Linking to a Custom Bookmark

The custom Bookmarks created will be selectable on the 'Custom' tab, when editing links for a particular linked Word Document. When exporting the data to the Word Document during a 'refresh':

- Single-cell Data will data will be exported as a text value.

- Multi-cell Data will be exported as an image.

- Charts will be exported as an image.

Part IX

9 Project Milestones

This features allows you to leverage the power of an interactive Gantt Chart to control the timings of your costs and revenues across all Development (DF and DM) CashFlows in a Project.

Using the Enterprise Database to act as the shared repository for the milestone data, users can easily manipulate timings for an entire Project using a common Gannt chart, rather than having to manually adjust period numbers in the Start and Span inputs in each file.

This is helpful if you are modelling a multi-stage project in individual files, and the timings of stages are dependent on one another. As you make changes to a Milestone Profile in one stage, the next time you open the file for a subsequent stage, the milestone data will be synchronized and the timings in your cash flow will be automatically updated.
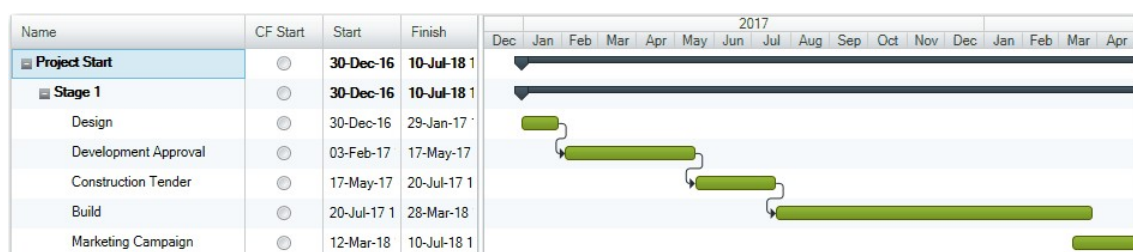
Example Scenario

- You are working on a 3-stage project, and you have decided to model each stage in separate ARGUS EstateMaster models.

- Stage 1 and 2 have already commenced, so therefore they are being modeled in ARGUS EstateMaster DM.

- Stage 3 has not commenced yet, so therefore its forecast is being modeled in ARGUS EstateMaster DF.

- Cost and revenue timings would *normally* be controlled via numerical 'Start Period' and 'Span' inputs in each model, with the ability to link these inputs with others in the same file only, using basic spreadsheet formulae (e.g. start cost 'x' when cost 'y' finishes). If there was a delay in receiving development approval for the development of Stage 2, which therefore delayed the timing of construction and pushed out the date of practical completion, then the timings for sales revenue would need to be adjusted *manually* or linked to the other inputs.

Description	Month Start	Month Span
CONSTRUCTION COSTS		
Demolition	12	4
Constructrion	16	18
SALES REVENUE		
Commercial	34	6
Level 2	34	1
Level 3	34	1

- If these delays would also impact on the ability to start Stage 3, then the 'Date of First Period' in the ARGUS
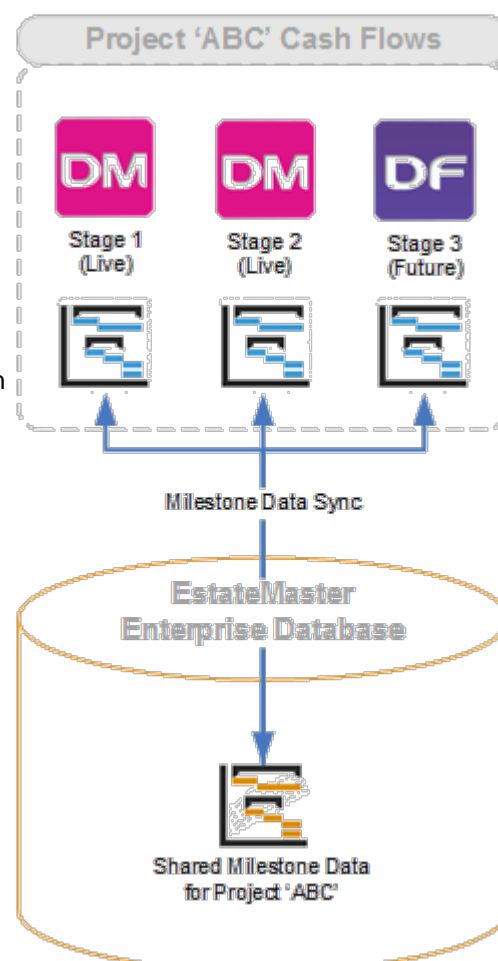
EstateMaster DF model would need to be *manually* adjusted as well.

PRELIMINARY	
Cash Flow Title	**Stage 3**
Date of First Period:	Jan-2019
Cash Flow Rest Period:	Monthly

- Using the Project Milestones function, you can build up a shared project schedule to drive the cash flow start date and timings of cost and revenue activities across all three models.

ID	Name	CF Start	Start
M1	**▪ Project Start**	○	**08-Jun-15**
M3	**▪ Stage 1**	○	**08-Jun-15**
M4	Development Approval	○	08-Jun-15
M5	Construction	○	09-Jul-15
M6	Sales Campaign	○	20-Sep-15
M7	**▪ Stage 2**	○	**15-Nov-15**
M8	Development Approval	○	15-Nov-15
M9	Construction	○	15-Feb-16
M10	Sales Campaign	○	11-May-16
M11	**▪ Stage 3**	○	**17-Apr-16**

- In the input assumptions, rather than entering/adjusting manual start and span periods, cost and revenue items that are dependent on any of the milestones can be linked to them, using their related ID (e.g. "M5" to link to Construction" timeline). The timing of that cost will then adopt the same timings as that milestone, with the ability to override the span period if you desire.

Description	Month Start	Month Span	Cash Flow Period
CONSTRUCTION COSTS			
Demolition	12	4	Jun-16 - Sep-16
Construction	M5	-	Jul-15 - Aug-15

- Timings for these items are now administered by the Project Milestones feature, you can reschedule them using its Gantt chart. You can do this by either manually editing the Start and Finish dates, or physically dragging the task bars across the timeline.

- Using the ARGUS EstateMaster Enterprise Database to act as the shared repository for the milestone data, when you open up the Stage 3 feasibility file in ARGUS EstateMaster DF, it will syncronise with the database, get the most up to Milestone data. This can then be used to drive the cash flow start and timings of the costs and revenues for Stage 3.

9.1 Milestone Profiles

The first thing you will need to do to use the Project Milestone feature is to create your custom your 'Milestone Profile' for your Project; a custom Gantt schedule comprising of a selection of Tasks that can be eventually used to drive the timings of your cash flow.

When you press the Project Milestones button in the ribbon menu, a form will appear where you can start to create 'Milestone Profiles'. By default, the 'Active Milestone Profile' will be set to 'Ignore Milestones for this CashFlow'. This means that you do not want to use a Milestone Profile for this file, and therefore only standard 'Start Period' inputs are expected in the cost and revenue line items.

DM Project Milestone	? ✕
Active Milestone Profile	Ignore Milestones for this CashFlow ▾

Ok   Cancel

Online vs Offline Profiles

When the form loads, ARGUS EstateMaster DM will attempt to detect if there is an active connection to an ARGUS EstateMaster Enterprise Database:

✓ If there is a connection:

- The Project Milestone feature will operate in **ONLINE** mode and the ▢ icon will appear in the top-right corner of the form.

- The Project Number and Name entered on the ARGUS EstateMaster DM 'Intro' sheet will be validated against any existing Projects in the database. If it finds a Project with a matching number, but with a different name, the user will be prompted to update the details on the 'Intro' sheet.
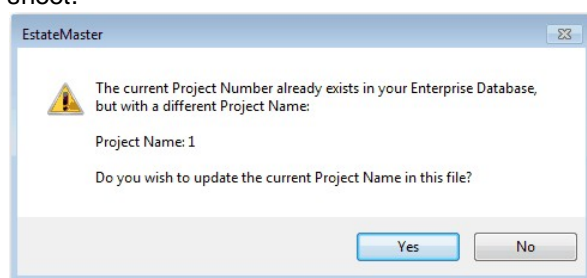
- All Milestone Profiles data for that Project will be synced with the ARGUS EstateMaster Enterprise Database, as well as saved to the local file.

✗ If there is no connection:

- The Project Milestone feature will operate in **OFFLINE** mode and the ▢ icon will appear in the top-right corner of the form.

- All Milestone Profiles data will only be saved to the local file.

Create a New Milestone Profile

To create a new Milestone Profile, click on the ▢ button.

You will be prompted to give it a name, and select whether you want to load the Gantt Chart with:

- No default Tasks (blank)

- Sample default Tasks

- Data from a Microsoft Project MPP or XML data file. If this option is selected, you will be prompted to browse to the *.mpp or *.xml file. If you select an *.mpp file, the import process will only work if Microsoft Project is installed on the same machine.
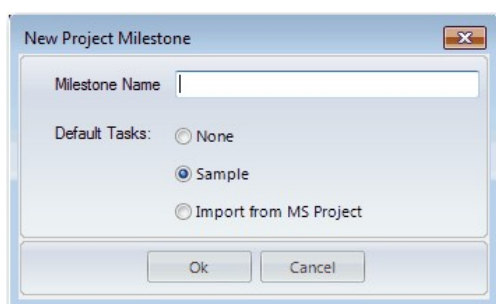
When [OK] is pressed, the Gantt chart will load.
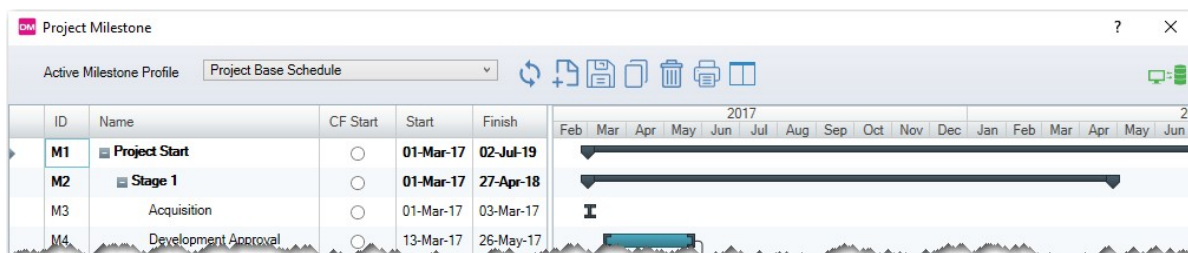
Saving the Active Milestone Profile

Once the individual Tasks have been created, click the [icon] button to save the data to your file, so you can begin utilising the Milestones in your Start and Span Inputs.

✎ Database Sync Actions

1. The application will search the database to see if a Project exists with the same Project Name and Number, as entered on the 'Intro' sheet.

   a. If one **does exist**, it will save that Milestone data to that Project, so other CashFlows that belong to that same Project, can use it.

   b. If one **does not exist**, it will prompt you to create a Project.
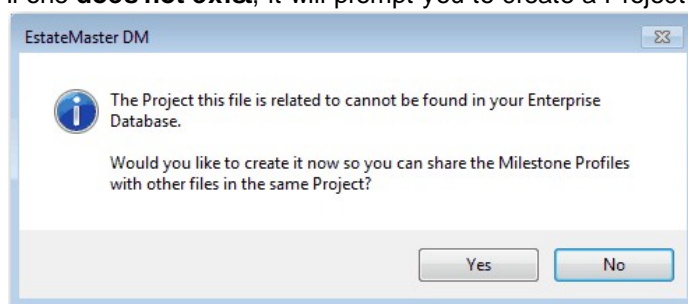
   i. If you select [No]:

      1. The Milestone data will be saved locally,and can only be used for that file.

      2. If at a later date, you export the same file to the Enterprise Database, you will be prompted to create a new Project at that point in time, or assign to an existing Project.

Clone/Copy an Existing Milestone Profile

This is a helpful feature if you wish to build model scenarios based on different project schedules. To copy the selected Milestone Profile and save it as a new one, click on the [icon] button.

You will prompted to save any existing changes before proceeding to give a name for the new Milestone Profile. Once it has been copied, the newly created one will be selected.

Delete an Existing Milestone Profile

To delete the selected Milestone Profile, click on the [icon] button.

You will prompted to confirm the deletion. If you click [Yes], that Milestone Profile will be deleted from that file.

✎ Database Sync Actions

1. The application will search the database to see if another ARGUS EstateMaster file that has been exported to the database, is using that particular Milestone Profile. If there is, then it will not be able to be deleted.
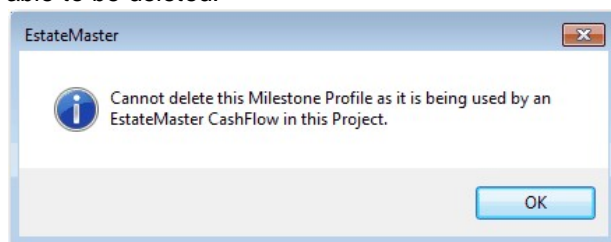
Print the Gantt Chart

To print the gantt chart generated by the the active Milestone Profile, click on the 🖶 button. It will load the gantt chart in the report viewer screen, where you have the options to change the page setup, print the report or save it to a file (e.g. xlsx, pdf)
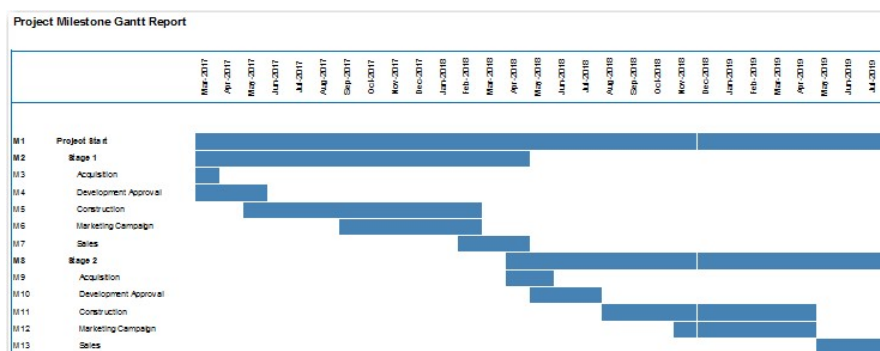
Dock/Tile the Windows

By default, when the Project Milestone form is first loaded, it will appear on top of your active ARGUS EstateMaster DM. If you wish to tile/dock it next to your ARGUS EstateMaster DM file so you can interact with both at the same time, your can toggle different docked/tiled options.

- While in the 'default' view, click on the ▯▯ button, to tile the windows vertically.
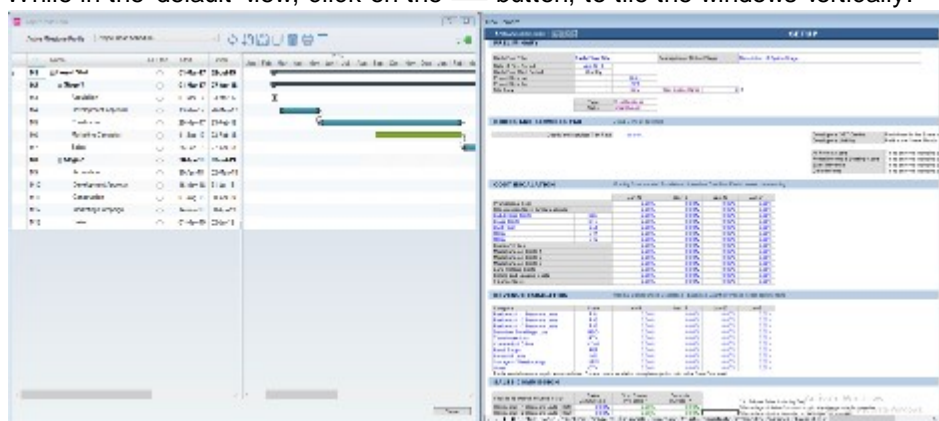
- While in the 'tiled vertically' view, click on the ⊟ button, to tile the windows horizontally.
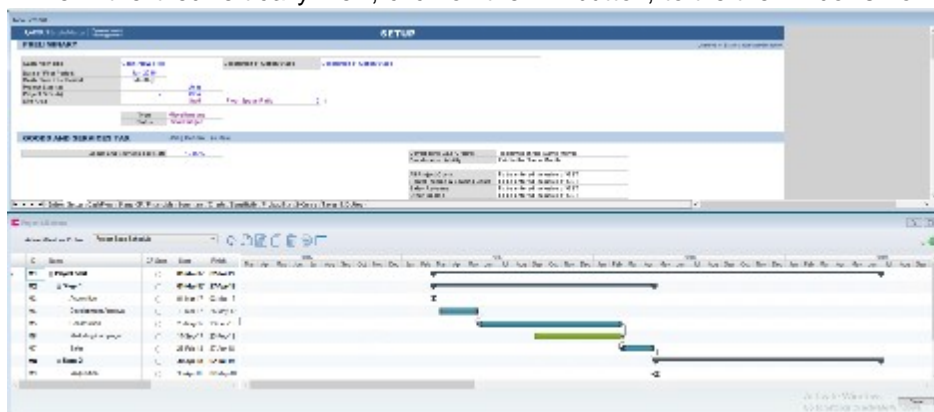
- While in the 'tiled horizontally' view, click on the ☐ button, to restore it to the default view.

While the windows are tiled (either horizontally or vertically), you can make changes to the active Milestone Profiles (change dates, add tasks, etc), and by pressing the 'Save' button, the changes are instantly reflected in your ARGUS EstateMaster DM file.

Refresh the Active Milestone Profile

To refresh the data for all Milestone Profiles in the list, click on the ↻ button.

This will undo any pending changes to the currently selected Profile, and refresh it to its last-saved state.

✎ Database Sync Actions

1. The application will search in that database and retrieve any more recent updates to the Milestone Profiles for that Project.

2. If more recent versions are found, the data in the Gantt Chart will be updated.

Background Database Synchronisations

Once you have started to create and use Milestone Profiles, the Milestone data in your ARGUS EstateMaster DM file will always be syncronising with the data in the Enterprise Database in the following instances:

- When opening a ARGUS EstateMaster DM file.

- When Recalling an Option/Stage (DF only).

- When the [Project Milestone] button is clicked on the Ribbon Menu

- When the [Save] button is clicked for a Milestone Profile.

- When a ARGUS EstateMaster DM file is being exported to the Enterprise Database.

This ensures that if another user has changed any details for a Milestone Profile in another file the same Project, your local copy will get updated with this information, and vice versa. The Milestone Profile data that was updated most recently, whether it be in the local file or database, will take precedence.

While offline (not connected to the database), you are able to open and make changes to Milestone Profiles in a file. The next time ARGUS EstateMaster DM can connect to the database, it will attempt to synchronise the changes.

Pausing Synchronisations when Opening Files

There may be a situation where you wish to open an existing ARGUS EstateMaster DM file in its last-saved state, and ignore any recent updates to the Milestone Profile that have been synchronised with the the Enterprise Database since that file was last saved (i.e. updated within a different file that belongs to the same project).

When a file is opened, it will check the Enterprise Database (assuming there is a current connection to it) if there is a newer version of the Milestone Profile that has been applied to that file.

If there is a more recent version of the Milestone Profile, the following will be displayed to the user:
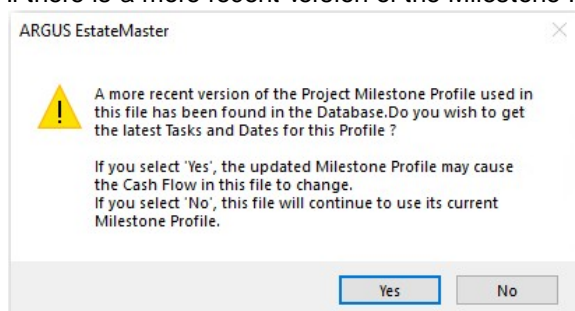
- If [**Yes**] is selected:

  - The latest data for the Milestone Profile (Tasks, Dates, Dependencies, etc) will be retrieved from the database, and the ARGUS EstateMaster DM file will be updated.

  - This may result in changes to the Cash Flow, and subsequently the outputs/results of that file.

- If [**No**] is selected:

  - The Milestone Profile will operate in **PAUSED** mode (i.e. not synchronise with the database) and the icon will appear in the top-right corner of the form. While in this 'Paused' state:

    - No data will be retrieved from the database, and the ARGUS EstateMaster DM file will continue to use the Milestone Profile data that it was last saved with.

    - The Milestone Profile will be read-only; it cannot be edited (e.g. Tasks changed) or deleted .

    - You can create a new Milestone Profile or copy the existing one, but it will remain in a 'Paused' state.

    - You can decide to synchronise with the database by clicking on the button, at which point you will be prompted with the same options above.

9.2　The Gantt Chart

The Gantt Chart the the Project Milestone feature uses a scheduling engine that works very similar to Microsoft Project 2010 and higher. *(See 'How scheduling works in Project')*

When you start to create a new Milestone Profile, some default tasks will be pre-populated to get you started. You can then continue to build up all the Tasks and their time frames related to that Project.
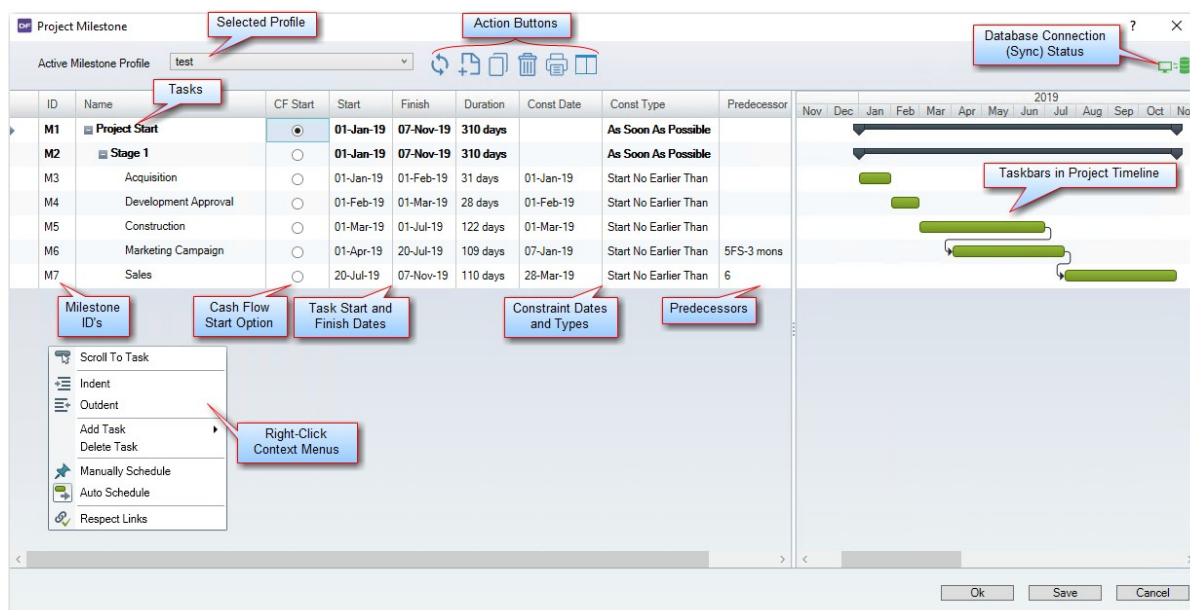
Gantt Chart Features

Active Milestone Profile   This indicates the the currently active profile being displayed. You can create multiple profiles for a Project, which is beneficial when doing scenario analysis based on variations on key milestones.

Action Buttons   Refresh, delete or add new Milestone Profiles.

Milestone ID   This is an auto-generated ID prefixed with "M". It is these IDs that you will be inputting in cost and revenue line items, to link them to a Milestone.

Tasks   These can be any type of activity or task in your project that you would like to incorporate in this Gantt. They can be indented/outdented toggle them between child/parent Tasks.

CF Start   This is an optional setting, that allows you to select which Task is to drive the the 'Date of First Period' input (i.e. the Cash Flow start date for the active ARGUS EstateMaster DM file). If selected, the 'Start' date for the selected Task is then set on the 'Date of First Period'

cell.

Then if that Milestone is adjusted in the future, the start of the cash flow will also be adjusted.

If you do not require the 'Date of First Period' to be linked to a Milestone any more, just manually adust the input assumption to you desired 'fixed' date, and it will then remove the 'CF Start' option on any Milestone Task.

Start and Finish

These are the Start and End Dates for the Tasks. They can be manually entered, or set using the date picker.
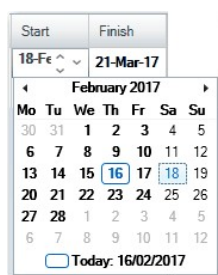
Tasks can be set to be:

- **Manually Scheduled:** This is useful during the early stages of creating a project while some of the project's details are unclear. You can place a manually scheduled task placed anywhere in your schedule, and the Gantt Chart won't move it.

- **Auto Scheduled:** The engine calculates the start and finish dates based upon the task dependencies. By default all tasks are created are set a 'Auto Scheduled'.

Duration

The duration of the Tasks, entered in either of the following formats:

- Days: **d, dy, dys, day, days**

- Weeks: **w, wk, wks, week, weeks**

- Months: **mo, mon, mons, month, months**

Note:

- The Gantt chart assumes 30-day months for all months in the calendar.

- Therefore you may see some inconsistent 'Durations'

- For example, if a 'Start' date occurs at the beginning of a month and a 'Finish' date occurs at the beginning of the next month, it will only show a "1 mon" Duration if the Start month contains 30 days. If it contains 31 days, it will show a "1.03 mons" Duration, and if it contains 28 days, it will show a "0.9 mons" Duration.

Constraint Date and Constraint Type

Constraints can be used to create a link between a task and a particular date. By default all tasks are created with the Constraint type 'As Soon As Possible' set. This allows Gantt Chart to schedule the task on the basis of its duration and dependencies, rather than against a particular date.

The constraint types available are:

- **As Soon As Possible**: The task starts on or after the project's start date and the start date of any ancestor summary tasks that are manually scheduled.

- **As Late As Possible**: The task finishes on or before the project's finish date, task deadline (if specified), the finish date of any manually scheduled ancestor summary tasks, and the deadlines of any automatically scheduled ancestor summary tasks.

The following constraints have a priority over dependencies:

- **Must Start On**: The task must/should start on the specified constraint date.

- **Must Finish On**: The task must/should finish on the specified constraint date.

- **Start No Earlier Than**: The task must/should start no earlier than the specified constraint date.

- **Start No Later Than**: The task must/should start no later than the specified constraint date.

- **Finish No Earlier Than**: The task must/should finish no earlier than the specified constraint date.

- **Finish No Later Than**: The task must/should finish no later than the specified constraint date.

Note: These settings only apply to 'Automatically Scheduled' Tasks.

Predecessors (inc Lead and Lag Time)

Dependencies allow you to define relationships between tasks (a predecessor and a successor) and visualize the sequence in which they must be completed in order to close a project.

The Predecessor field in this process indicates which task (by its row # in the Gantt) is controlling the start or end date of the active task. So in the example below, Task #4 has Task #3 as its Predecessor, meaning that Task #3 is controlling when Task #4 starts (i.e. a 'Finish To Start' dependency)
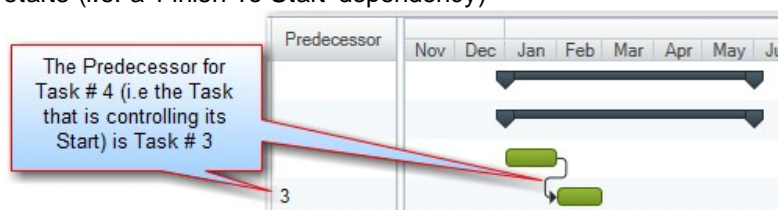
Types or Dependencies
There are 4 types of dependencies, each having its own 2-character notation:

- **Finish to Start (FS)**: The Task's Start date is dependent upon its predecessor's Finish date. If not otherwise specified, this is the default link type.

- **Finish to Finish (FF)**: The Task's Finish date is dependent upon its predecessor's Finish date.

- **Start to Finish (SF)**: The Task's Finish date is dependent upon its predecessor's Start date

- **Start to Start (SS)**: The Task's Start date is dependent upon its predecessor's Start date.
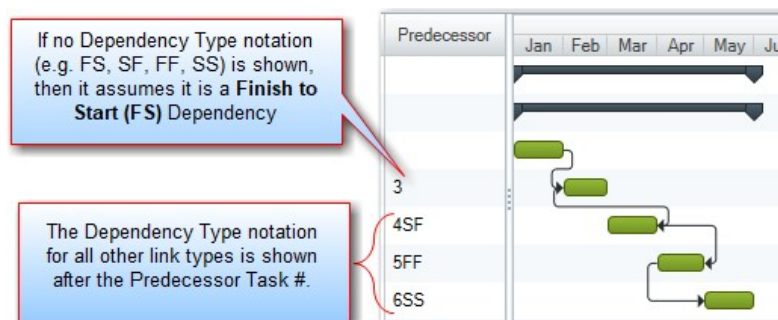
Creating Dependencies
These dependency links can be created by either:

- Dragging the 🔗 icon that appears at the start or end of a task when hovering over its taskbar, to the start or end of another task.
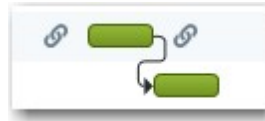
- Manually defining the link in the Predecessor field, which includes defining the row # of the Predecessor Task, and the dependency type (e.g. FS, SF, FF, SS). Using this approach, you can also specify a lead and lag time of the dependency as well.

Lead and Lag Times

In addition to defining the type of dependency between two Tasks, you can also specify dependency lead and lag time.

- **Lead** time is a value of negative duration indicating the amount of overlap between the tasks.

- **Lag** time is a value of positive duration indicating a delay between the task's links fields.

The lead and lag time can be defined as a **duration** (days, weeks, months, years, etc) or as a **percentage** of the predecessor task duration. For example, if you enter for Task #4 "3FS-2 days" in the Predecessors column, this means that there is a 2 days lead-time meaning that Task #4 must start 2 days before the finish of the Task #3.
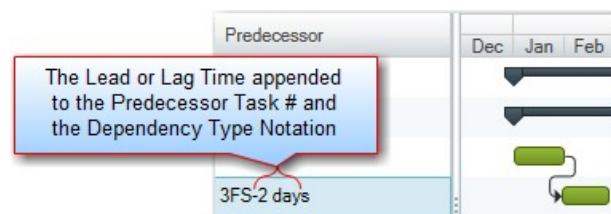
The dependency lead and lag time must be manually entered in the Predecessor field in one of the supported formats, otherwise a red validation message will appear. The supported formats are:

- Days: **d, dy, dys, day, days**

- Weeks: **w, wk, wks, week, weeks**

- Months: **mo, mon, mons, month, months**

- Percent: **%**
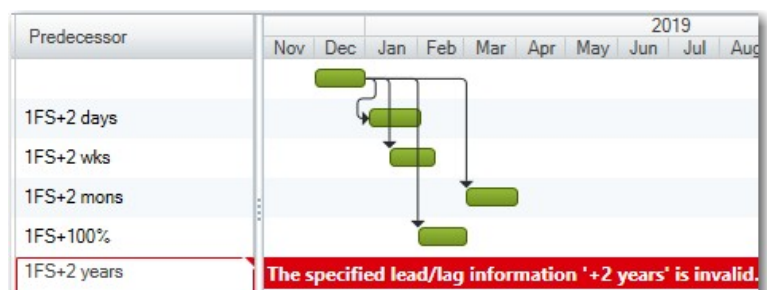
Taskbars

The task timeline can be adjusted here, just by dragging a taskbar, or resizing it.

You can also set dependencies between two tasks, just by dragging the 🔗 icon that appears at the start or end of a task when hovering over its taskbar, to the start or end of another task.

9.2.1 Context Menus

Task Menu

- **Scroll to Task:** Highlights the Taskbar for the selected Task in the timeline.
- **Indent:** Changes the selected Task to become a 'child' Task.
- **Outdent**: Changes the selected Task to become a 'parent' Task.
- **Add Task:** Ability to add a new Task either as a 'sibling' (underneath the selected task on the same level), or a subtask (underneath the selected task as a 'child' task). A maximum of 400 Tasks per Profile can be added.
- **Delete Task:** Deletes the selected Task
- **Manually Schedule:** Change the Task to be Manually scheduled.
- **Auto Schedule:** Change the Task to be Auto scheduled.
- **Respect Links:** Recalculates the selected task's information based on its dependencies.

Timeline Menu

If you right-click a Taskbar, you will get the following task-related options:

- Manually Schedule
- Auto Schedule
- Respect Links

If you right-click a Link, you will get the following dependency-related options:

- **Delete Link:** Deletes the dependency between the two Tasks
- **Scroll To Predecessor:** Highlights the task where the link is coming 'from'
- **Scroll To Successor:** Highlights the task where the link is going 'to'

9.3 Using Milestones in Input Assumptions

After you create your Milestone Profiles, you can start using the Task IDs prefixed with "M" to drive the timings for all your cost and revenue line items.
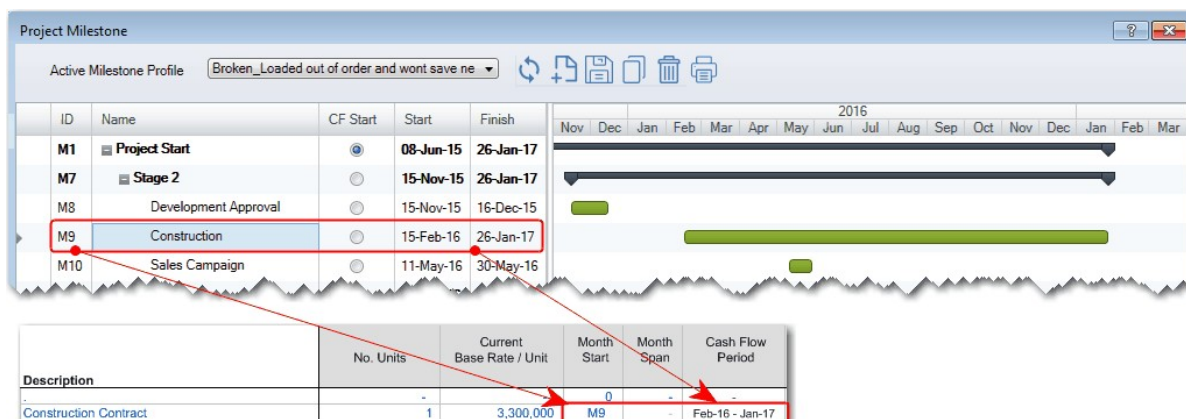
This can be done by either:

1. **Setting the "M" ID in the 'Period Start'** inputs and leaving the **'Period Span' Empty**: This will start the cost/revenue on the same date as the Milestone Task 'Start' date and automatically span it until the Milestone Task 'Finish' date.

Description	No. Units	Current Base Rate / Unit	Month Start	Month Span	Cash Flow Period
.	-	-	0	-	-
Construction Contract	1	3,300,000	M9	-	Feb-16 - Jan-17

2. **Setting the "M" ID in the 'Period Start'** inputs and **entering a custom 'Period Span'** Input: This will start the cost/revenue on the same date as the Milestone Task 'Start' date, but span it according to the defined input.

Description	No. Units	Current Base Rate / Unit	Month Start	Month Span	Cash Flow Period
.	-	-	0	-	-
Construction Contract	1	3,300,000	M9	8	Feb-16 - Sep-16

Whenever the timings are changed for Tasks in the active Milestone Profile for that file, any cost and revenue inputs that have been configured this way will then have their cash flow duration automatically adjust.

Adding a Lead Time or Lag

If a cost or revenue input needs to adopt a lead or lag time relative to a give Milestone Task, then this can be achieved by entering either:

1. "**+**" followed by the number of period, after the "M" ID, to indicate a **lag**

2. "**-**" followed by the number of periodd, after the "M" ID, to indicate a **lead time**

A -ve lead time added to the Milestone Task ID, will shift the start of that cost / revenue **backwards**, by the number of periods.

Milestone Popup List

To assist with linking cost and revenue inputs to Milestone Tasks, and popup list will automatically appear after you assign a Milestone Profiles to your active file.

Simply by selecting the 'Period Start' input cell for any cost or revenue item, the 'Select Milestone' list will automatically pop-up. You will then have 2 options to assign a Milestone ID to that Period Start input:

1. Manually type in the Milestone "M" ID in the input field and press the [Enter ↵] key.

2. Find the Milestone in the pop-up list, and double-click it. If you do this, the application will then automatically populate both Period Start input field with the related "M" ID.

Once you select any other cell, or application tab, the pop-up list will automatically close.

Locked Fields

This functionality will behave differently in the following scenarios:

- The pop-up list will only appear if the active Period Start input cell is unlocked/editable.

- If the selected Period Start input cell has been locked, due to Input Cell Protection via the Preferences, the pop-up list will not appear.

- If the selected Period Start input cell is unlocked/editable, and a Cost Code is selected via a double-click in the pop-up list, the active Period Start input cell will be updated

9.4 Sharing Milestone Profiles across Files

The real power of the Project Milestones feature is using it to control the timings across multiple DF and DM cash flows in **the same Project**.

If you are using the Enterprise Database to act as the shared repository for the milestone data, you can easily adopt a Milestone Profile that has been originally created in one DF/DM file, and use it in another DF/DM file in the same Project.

How Does it Work?

When the Project Milestones feature syncs with the Enterprise Database, it relies on the Project Details on the 'Intro' sheet of the DF/DM file to know which Project in the database to store it against, prompting the user to create one if it doesn't exist.

Once a Project has been created in the database, and the Milestone data has been stored against it, any other DF/DM file that has the same Project Number and Name entered on the 'Intro' sheet, will sync with the Enterprise Database and retrieve the Milestone Profile(s) created for that Project.

Multiple DF/DM files can share the same Milestone Profile, so if you make an edit to it via one file, the next time the other file syncs (file open, opening Project Milestone feature, etc)

Part

X

10   Creating a Project

There are three methods of creating a project in ARGUS EstateMaster DM:

- Importing a feasibility file from ARGUS EstateMaster DF

- Manually inputting a project into a new/blank ARGUS EstateMaster DM file

- A hybrid of the above, where a feasibility file is imported from ARGUS EstateMaster DF and then changes/additions are made in ARGUS EstateMaster DM.

10.1   Import a Feasibility

The inbuilt import feature in ARGUS EstateMaster DM allows the user to automatically extract input data from a feasibility created in a compatible ARGUS EstateMaster DF model. This feature is accessed via the Ribbon Menu in the 'Data' section.

Import Feasibility from DF
Import a feasibility from an Estate Master DF as the initial budget

Import from Database
Import an existing Estate Master DM model from the Enterprise Database

Export to Database
Export the current existing Estate Master DM model to the Enterprise Database

Export to Excel
Export the current existing Estate Master DM model to an Excel file

To import feasibility data:

1. With your ARGUS EstateMaster DM application open and ready for importing, go to 'Data' in the Ribbon Menu and select 'Import Feasibility from DF'.

2. You will be prompted to browse for a ARGUS EstateMaster DF (*.emdf) file.

3. Once the file has been selected a list with all the different option/stages in the DF model will be displayed. You will need to select *one* cash flow only from the list to import.

4. Only input values will be copied into your ARGUS EstateMaster DM model and not any user-inserted formulae. If you had user-inserted formulae in the ARGUS EstateMaster DF file and you want it retained in the ARGUS EstateMaster DM file you will need to re-input the formulae manually after the import process is complete.

5. If you have any user-inserted custom worksheets in the ARGUS EstateMaster DF model, you will be provided the option to also import those into the ARGUS EstateMaster DM model.

Importing JV (Joint Venture) DF Models
There is no Joint Venture functionality in ARGUS EstateMaster DM. Therefore, when importing a DF model that was run in JV mode, the user will have the option to still import the feasibility, but none of the JV-related inputs will be imported and the ARGUS EstateMaster DM model will be set up as a single-entity.

4. To proceed, click 'Yes' and the program will prompt you to select the relevant ARGUS EstateMaster DF file that you wish to import from (only a compatible DF file can be imported). The program will then copy the input data from the DF file and paste the values in the ARGUS EstateMaster DM file that is currently open.

Set Original Budget

At the end of the import process you will be asked if you would like to set the imported data as the Original Budget. You may alternatively wish to allow the data to be imported and conduct a review before you set the Original Budget. Once your satisfied that the input data and results are correct you can save your Original Budget by clicking on the 'Set as Original Budget' function in the 'Management Tools'.

This sets the current forecast, net cash flow and the performance indicators as the Original Budget on all reports.

10.2 Manually Input Data

ARGUS EstateMaster DM can be used without the need of feasibility data created in an ARGUS EstateMaster DF model. Costs and revenues can be manually inputted in the various sections of the model and updated accordingly during the development process.

10.3 Hybrid

A feasibility file imported from ARGUS EstateMaster DF is reviewed and amended in ARGUS EstateMaster DM and then set as the original budget. This would reflect any changes to the project since the feasibility was finished.

10.4 Inputting Data

Input Cell Types

Enter data into input cells with a font colour of blue or green. Fixed cells (non input) have a black font colour. Since the worksheets are protected and locked, the model will only allow you to enter into the relevant input cells.

- **Blue Font Cells:** Cells with blue font are the main input cells in the program.

- **Green Font Cells:** Cells with green font relate to presales and are not relevant if you are not taking presales into account.

- **Purple Font Cells:** Cells with purple font relate to inputs that are entered via a list selector. When selecting the cell, a drop-down arrow will appear. Click the arrow and a list of options for that input cell will be displayed.

Period Start and Span

For every payment and revenue it is necessary to put a start date and span period, or else the program will not add the payment to the cash flow.

- The **Start Date** must be a number between zero (0) (which represents the first or current period) or an applicable letter (i.e. "L" for land costs or "C" for Professional Fees).

    o If using the Project Milestone feature, the Period Start can also be linked to a Milestone Tasks using the unique Milestone ID.

- The **Span Period** must be greater than but not equal to zero.

The start and span numbers must not add up to more than the maximum time periods in the model - or else you will exceed the program's limits.

Formatting Cells

When certain input worksheets are activated, a 'Formatting' menu will appear. It allows the user to apply simple formatting such as bold fonts and coloured cells in the 'Code', 'Stage' and 'Description' input cells for each line item.
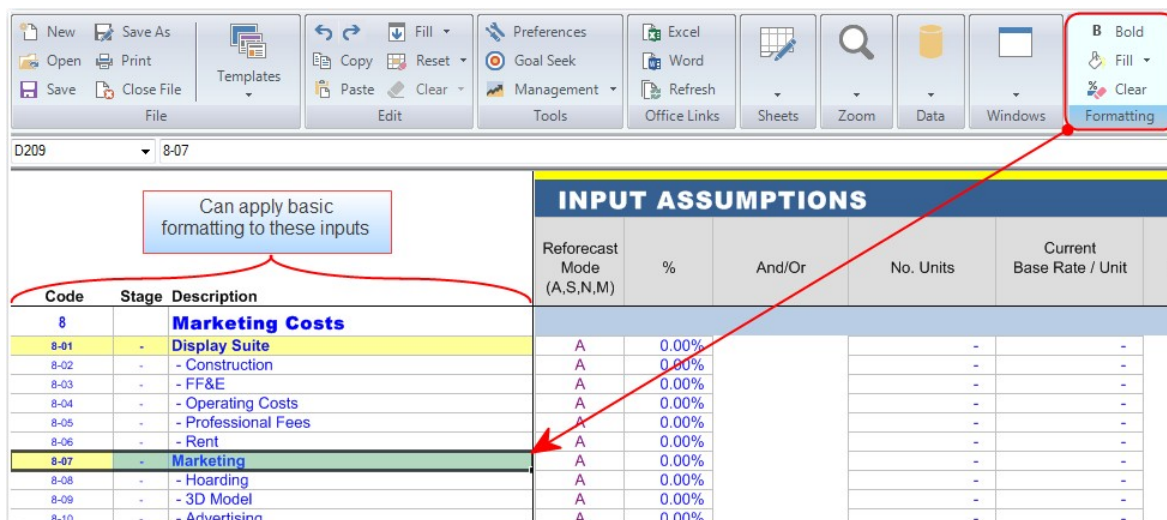
Cell Comments

In addition to custom formatting, the 'Code', 'Stage' and 'Description' input cells also support the ability to insert Cell Comments. By right-clicking any of these cells, an 'Insert Comment' button will appear, allowing the user to insert a maximum 255 character comment in that cell.
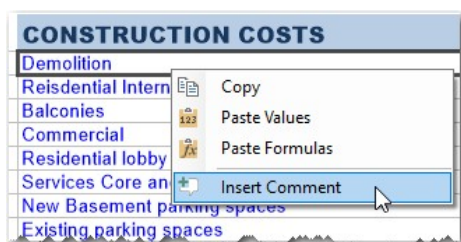
Once a comment has been inserted, a red indicator will appear in the top-right of the cell, and when it is hovered over, the comment will appear (Please Note: a frown pane may cause a comment to not or only partially appear).
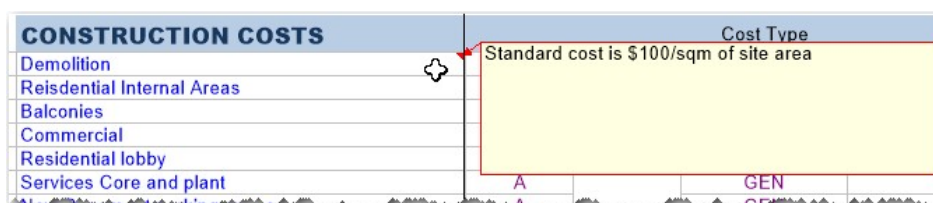
Any cell that has a comment, will then have an 'Edit' and 'Delete' option available in the right-click menu.

10.5 Intro Sheet

Mandatory Inputs are highlighted in red

Project Name (Mandatory)	Enter the name of the project that the property belongs to. 'Project' may be interpreted as a 'development project', an 'investment project, a 'valuation project', etc.
Project Number (Mandatory)	Enter the unique project number related to the project.
Account Code (Optional)	Enter in the unique reference code that this project belongs to in your accounting system.
	It is used only when using the 'Update from Accounts' function.
Street Address, City/Suburb , Zip/Post Code, State/County and **Country** (Optional)	Enter the physical address of the subject property.
Prepared By (Optional)	Enter in who this report was prepared by.
Prepared For (Optional)	Enter in who this report was prepared for.
Developer (Optional)	Enter the name of the developer.

10.6 Cost Codes

If the Chart of Accounts have been configured on the active machine, they will now be usable within ARGUS EstateMaster DM to allocate individual costs codes to a specific line item.

Simply by selecting the 'Code' or 'Description' input cell for any cost or revenue item, the 'Select Cost Code' list will automatically pop-up.

You will then have 3 options to assign a Code and its Description to that line item:

1. **Manually type in the Cost Code**, in the 'Code' input field of the ARGUS EstateMaster DM file and press the [Enter ↵] or [Tab ⇆].

    a. If that Code exists in the Chart of Accounts list, the 'Description' input field will be automatically populated with the Description set in the Chart of Accounts for that specific code, overriding any existing Description set in that field.

b. If you want to ensure the user enters a valid Cost Code that exists in the Chart of Accounts, enabled to the 'Enforce Cost Code' setting.

2. **Manually type in the Cost Code Description**, in the 'Description' input field of the ARGUS EstateMaster DM file and press the [Enter ↵] or [Tab ⇆].

a. If that Description exists in the Chart of Accounts list (and is unique), the 'Code' input field will be automatically populated with the Cost Code set in the Chart of Accounts for that specific Description, overriding any existing Description set in that field.

3. **Find the Code/Description in the pop-up list**, and double-click it.

a. If the list is large, you can start typing in a known Code or Description in the Filter field, and the list will continually update to show only the matching records.

b. If the Chart of Accounts have been updated since you started ARGUS EstateMaster DM, you can press 'Refresh' to get the latest list.
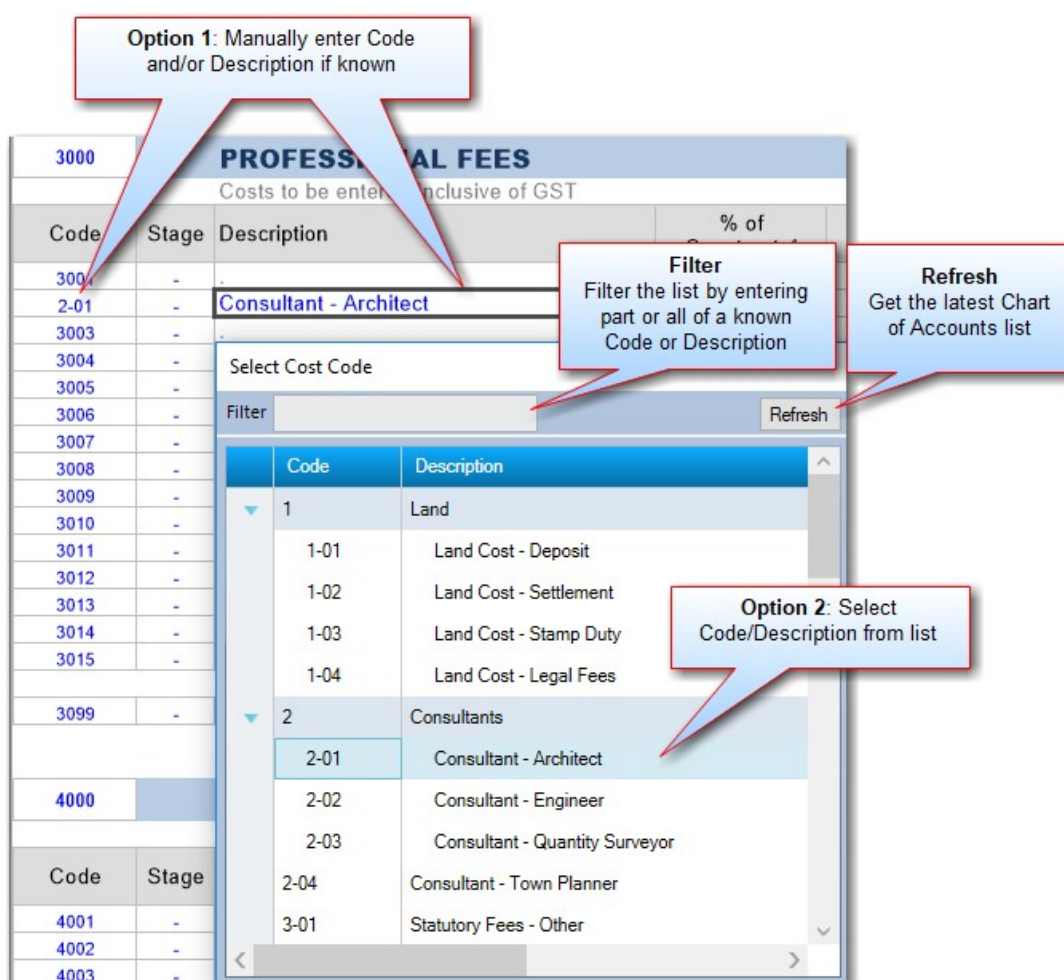
Once you select any other cell, or application tab, the pop-up list will automatically close.

Disabling the Popup Picklist

If you do not wish to have the picklist automatically appear when you select a 'Code' or 'Description', you can deselect the 'Display Popup Picklist' setting.

If the Chart of Accounts have been configured, but the popup picklist has been disabled, the behaviour of 'Code' or 'Description' fields when they are manually updated by the user, will still remain (e.g. if you

manually type in a Code that exists in the Chart of Accounts list, the 'Description' input field will be automatically populated , and vice versa).

Comments

Once a Cost Code and Description has been applied to a line item using either of the options above, the application will then automatically insert a cell comment (red indicator in the corner of the cell) in the 'Code' input field with the Comment set in the Chart of Accounts for that specific code (if it exists), overriding any existing cell comments that may already be in that input field. The comment will appear when the user hovers over the red indicator.

Locked Fields

This functionality will behave differently in the following scenarios:

- The pop-up list will only appear if the active Code or Description input cell is unlocked/editable.

- If the selected Code or Description input cell has been locked, due to Input Cell Protection via the Preferences or the Input Row Protection on the CashFlow tab, the pop-up list will not appear.

- If the selected Code input cell is unlocked/editable, and a Cost Code is selected via a double-click in the pop-up list:

  o The active Code input cell will be updated

  o If the related Description cell is:

    ▪ Unlocked/editable, the Description will be updated.

    ▪ Read-only (i.e a default label, not an actual input field), the Description will not be updated.

    ▪ Locked, due to Input Cell Protection or Input Row Protection, the Description will not be updated.

- If the selected Description input cell is unlocked/editable, and a Cost Code is selected via a double-click in the pop-up list:

  o The active Description input cell will be updated

  o If the related Code cell is:

    ▪ Unlocked/editable, the Code will be updated.

- Locked, due to Input Cell Protection or Input Row Protection, the Code will not be updated.

10.7 Setup Sheet

10.7.1 Set Preferences and Default Setup

It is recommended that before entering any data, the user set their default preferences and cash flow setup. This is done in two main areas:

1. Preferences: An input form that appears when the following are clicked:

   - Clicking on [Preferences]   Preferences   on the Ribbon Menu or Quick Access Toolbar,
   - Pressing the [F12] key.

2. The 'Setup' sheet: The 'Setup' sheet contains global input parameters such as:

   - Project description and start date.
   - GST/VAT options.
   - Costs, Sales and Rental escalation rates.
   - Sales Commission rates.
   - Equity and Debt funding options.
   - Project performance hurdle rates.

10.7.2 Preliminary

Cash Flow Title	Original Budget		Description of Option/Stage	All Stages
Date of First Period:	Jun-2016			
Cash Flow Rest Period:	Monthly			
Project Size (a)	116,350.00	Sqm		
Project Size (b)	179.00	lots		
Site Area	14.00	Ha	Plot Ratio	0 :1

Type	Miscellaneous
Status	Initial Budget

Cash Flow Title (Mandatory)	Enter the name of the project that the property belongs to. 'Project' may be interpreted as a 'development project', an 'investment project, a 'valuation project', etc.
Description/Option/Scenario (Mandatory)	Enter the description of the option, scenario or stage of the development.
Date of First Period (Mandatory)	Enter the date of the first period in the cash flow. The first period is time period Zero (0).
	Important Note:
	• If the model has been rolled forward past period 0 (zero), it is assumed that the project has started, and this input will therefore be locked to maintain the integrity of any historical data. If the start date must be changed, then the model must be rolled back to period 0 before that change can occur.
Cash Flow Rest Period	The cash flow rest period (monthly, quarterly, half-yearly or yearly) is set using the Preferences.

Enter Project Size (Optional)	Project size relates to the size of the developable area, land area, gross building area, net lettable area, gross floor area or number of lots, dwellings, apartments, etc. You may enter any type of measurement to summarise the development. These do not affect the cash flow and are only used for reporting purposes on the' Summary' sheet.			

Enter Project Size (Optional)
Project size relates to the size of the developable area, land area, gross building area, net lettable area, gross floor area or number of lots, dwellings, apartments, etc. You may enter any type of measurement to summarise the development. These do not affect the cash flow and are only used for reporting purposes on the' Summary' sheet.

Enter Site Area (Optional)
Enter the land area based on the units of measurement in the list selection (purple font cell).

Floor Area Ratio (Optional)
Select from the list the appropriate terminology to be used for a floor area ratio and then enter the ratio to calculate a Gross Floor Area from the given Site Area.

Type (Mandatory)
Nominate the type of development from the list selection (purple font cell). This is useful for distinguishing different development options.

Status (Mandatory)
Nominate the status of the project to identify at what stage of the analysis it is at.

10.7.3 Taxation (GST,VAT,etc)

	A or Y	B	C	N
Goods and Services Tax Rate	10.00%	12.50%	20.00%	0.00%
Value at 1-7-2000 or Acquisition Price	20,000,000			
Percent of Cost Completed at 1 July 2000	0.0%			
Percentage of Sale Price Withheld by Purchaser	7.00%	Start	Span	%Owner
GST Cost Lump Sum Amount	10,000	12	6	-

Tax Rate (Optional)
The program allows for up to 3 different default GST/VAT rates. In the GST/VAT cell for each line item, the user may enter:

- **A**, **B** or **C**: To correspond with the different default rates entered (if Multiple Rate option is selected in the Preferences).

- **Y** or **N**: Y will implement the rate entered in the GST/VAT rate cell of the Input Sheet and N will be 0%.

- **%**: If a user requires a GST/VAT rate that is not in either A, B or C, then they may enter the rate manually as a percentage in the GST/VAT cell for any line item.

Value at 1-7-2000 or Acquisition Price (Optional)
You may enter either a valuation figure or leave the default formula in the cell, which is the maximum of land purchase price or costs spent up to the GST commencement Date (1/7/2000).

This is only relevant if the 'Margin Scheme with Valuation' option is selected in the Preferences.

Percent of Cost Completed at 1st July 2000 (Optional)
You may enter either a percentage or leave the default formula in the cell. The default is based on the user's inputs in the cost sections and the % of costs that have been incurred before 1-7-2000. It then applies the Margin Scheme with Valuation calculation to determine input credits and liabilities.

This is only relevant if the 'Margin Scheme with % Cost Completed 1-7-2000' option is selected in the Preferences.

Percentage of Sale Price Withheld by Purchaser (Optional)

When the Margin Scheme 'Margin Scheme' Tax Liability Calculation Type is adopted, enter the default percentage of the Sale Price that is intitially withheld by the Purchaser at settlement.

This will be applied to all Sales line items where 'Y' has been set for the 'Withheld by Purchaser' input.

GST	
Included on Sales	Withheld by Purchaser
Y	Y
Y	Y
Y	N
Y	N

Note: This will not change the total Tax Liability that is calculated on a Margin Scheme basis:

- If the Margin Scheme logic calculates a tax rate that is <u>lower</u> than this default percentage rate (i.e. the purchaser has withheld/remitted a tax amount that is <u>higher</u> than the eventual tax liability on a Sale line item), the developer will receive a credit for the difference.

- If the Margin Scheme logic calculates a tax rate that is <u>higher</u> than this default percentage rate (i.e. the purchaser has withheld/remitted a tax amount that is <u>lower</u> than the eventual tax liability on a Sale line item), the developer will have an additional tax liability for the difference.

Lump Sum Amount (Optional)

The program automatically calculates the GST/VAT credits depending on what the user entered into the GST/VAT cell for each cost line item, but the user must manually input the lump sum liability with start and span dates.

This is only relevant if the 'Manual Input of Liability' option is selected in the Preferences.

10.7.4 Cost Escalation Rates

		Jan-16	Jan-17	Jan-18	Jan-19
Professional Fees		0.00%	0.00%	0.00%	0.00%
Construction Costs (Uncategorised)		0.00%	0.00%	0.00%	0.00%
Subdivision Costs	SUB	0.00%	0.00%	0.00%	0.00%
Stage Costs	STG	0.00%	0.00%	0.00%	0.00%
Built Form	BUI	0.00%	0.00%	0.00%	0.00%
Other	OT1	0.00%	0.00%	0.00%	0.00%
Other	OT2	0.00%	0.00%	0.00%	0.00%
Statutory Fees		0.00%	0.00%	0.00%	0.00%
Miscellaneous Costs 1		0.00%	0.00%	0.00%	0.00%
Miscellaneous Costs 2		0.00%	0.00%	0.00%	0.00%
Miscellaneous Costs 3		0.00%	0.00%	0.00%	0.00%
Land Holding Costs		0.00%	0.00%	0.00%	0.00%
Selling and Leasing Costs		0.00%	0.00%	0.00%	0.00%
Finance Costs		0.00%	0.00%	0.00%	0.00%

Construction Cost Categories

Up to 20 Years

Escalation Rates can be defined for different categories of costs in the escalation table for up to 20 years. Escalation rates can be set up in different ways:

- Either on a **Periodic Compounded Escalation** basis (e.g. 5% per annum, which equates to 0.41% compounded monthly) or **Annual Stepped Escalation** basis (e.g. 5% per month for the year).

- Either by **Cash Flow Period Years** or **Financial Years.**

- As a **Positive** (inflation) or **negative** (deflation) percentage.

Please refer to the [Preferences](#) on configuring the different escalation options.

Please Note:

- When entering a cost that is a percentage of another cost item, it will be a percentage of the total escalated cost. Therefore, by entering an escalation for that cost item, it will be 'double escalated'.

- The table is dynamic, in that it will only display the number of years (up to a maximum of 20) that is require by the model, based on the rest period selected (monthly, quarterly, etc) and the number of cash flow time period. So for example, if the model is set at 'Monthly' rest periods, with only 90 time periods, that equates to 7.5 years, therefore 8 years in the escalation table will be displayed.

Construction Cost Types

In the Cost Escalation table, there is provision to further classify Construction Costs into 5 separate categories. These categories can be manually defined by the user by setting a 3 character code and a short description. Apart from being able to define specific escalation rates for each category, the user can then defined each Construction Cost lines item to that category for reporting purposes.

Description	Cost Type
Subdivision	SUB
Construction Contract	BUI

Application of Escalation Rates for Costs

The method of application of escalation can vary for each cost item. Below is the method of applying escalation rates.

- **E** = Escalates the cost to its start date;

- **R** = Escalates the cost to its start date and continues the escalation through the span period; and

- **N** = Does not apply escalation (this is the default if you leave the escalation input blank).

Escalation Examples

Say there is a $60,000 cost that starts in month 4 and has a 6 month duration and escalates 5% per annum. Using the different methods of escalation, the following cash flows would be created:

Current Amount	Month Start	Month Span	Current Amount (per Month)
60,000	4	6	10,000

Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9
5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

Escalation Factor Compounded Monthly (= Previous Months Escalation Factor x $(1+5\%)^{(1/12)}$)

Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9
100.00%	100.41%	100.82%	101.23%	101.64%	102.05%	102.47%	102.89%	103.31%	103.73%

Code	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Total
N	10,000	10,000	10,000	10,000	10,000	10,000	**60,000**
E	10,164	10,164	10,164	10,164	10,164	10,164	**60,984**
R	10,164	10,205	10,247	10,289	10,331	10,373	**61,608**

- When "E" is selected, the Month 4 Escalation Factor (101.64%) is applied to the non-escalated amount per month (10,000) for the entire span.

- When "R" is selected, the Month 4 - 9 Escalation Factors are applied to the non-escalated monthly amount (10,000) for that specific month.

10.7.5 Revenue Escalation Rates

Category	Code	Jan-16	Jan-17	Jan-18	Jan-19
Residential - 1 Bedroom Units	RS1	0.00%	0.00%	0.00%	0.00%
Residential - 2 Bedroom Units	RS2	0.00%	0.00%	0.00%	0.00%
Residential - 3 Bedroom Units	RS3	0.00%	0.00%	0.00%	0.00%
Detached Dwelllings Lots	RDD	0.00%	0.00%	0.00%	0.00%
Townhouse Lots	RTH	0.00%	0.00%	0.00%	0.00%
Commerical Office	COM	0.00%	0.00%	0.00%	0.00%
Retail Shops	RET	0.00%	0.00%	0.00%	0.00%
Industrial Units		0.00%	0.00%	0.00%	0.00%
Storage & Warehousing		0.00%	0.00%	0.00%	0.00%
Other	OTH	0.00%	0.00%	0.00%	0.00%

Land Use Categories

Up to 20 Years

Escalation Rates can be defined for different categories of sales and rental revenue in the escalation table. Escalation rates can be set up in different ways:

- Either on a **Periodic Compounded Escalation** basis (e.g. 5% per annum, which equates to 0.41% compounded monthly) or **Annual Stepped Escalation** basis (e.g. 5% per month for the year).

- Either by **Cash Flow Period Years** or **Financial Years.**

- As a **Positive** (inflation) or **negative** (deflation) percentage.

Please refer to the Preferences on configuring the different escalation options.

Please Note:

- The table is dynamic, in that it will only display the number of years (up to a maximum of 20) that is require by the model, based on the rest period selected (monthly, quarterly, etc) and the number of cash flow time period. So for example, if the model is set at 'Monthly' rest periods, with only 90 time periods, that equates to 7.5 years, therefore 8 years in the escalation table will be displayed.

Escalation Rates	For each relevant category you may enter up to 20 years of escalation rates.

- **For Sales:** Escalation rates apply to end sale values from the first escalation month. Where the user has assumed pre-sales, escalation applies up to the exchange dates, otherwise it applies up to the settlement dates.

- **For Rents (Pre Lease)**: Escalation rates apply to rental values from the first escalation month up to the lease start date. For escalation on rents during the lease period, refer to the rent review table in the Rental input section.

Where the **first escalation month** is identified as the first month in the escalation table, and may changing depending on the preference to set escalation based on Cash Flow Period Years or Financial Years.

Code and Category	You have ability to define your own property categories (eg. "Residential") and codes (eg. "RS") for multiple escalation rates. The code for each property category is defined by the user (1-3 character length allowed). Negative escalation rates can be entered.

Adding / Deleting Categories

Allows the user to adjust the Revenue Categories available in the application. To add new ones (up to a maximum of 20):

1. Click on the Input Rows 'Add' button, and select 'Sales / Rental Land Use Category'

2. A new row will be added, 2nd from the bottom above 'Other' - a new category description and 3-character code must then be applied to it.

To delete a Revenue Category:

1. Click on the Input Rows 'Delete' button, and select 'Sales / Rental Land Use Category'

2. The 2nd last category row above 'Other' will be deleted.

10.7.6 Sales Commission

Sales Commission (Optional)

For each relevant category you may enter sales commission. The first input column refers to sales commission as a percentage of End Sale Values that can be applied to:

- Revenue items in the 'Sales' input section.

- Capitalised Sales entered in the 'Tenants' section.

Select via the Preferences whether it the rate is applied to:

- Gross Sale Values (i.e sales price inclusive of any GST/VAT/Sales Tax)

- Net Sale Values (i.e sales price exclusive of any GST/VAT/Sales Tax)

% of Commission at Pre-Sale (Optional)

The second input column (green font) is only relevant for pre-sales and refers to the proportion of sales commission that is paid at exchange date (date of pre-sale). Typically selling agents require a proportion of their commission to be paid on exchange of contracts.

Deposit (Optional)

The third input column (green font) is only relevant for pre-sales and refers to the size of the deposits to be met by the end buyers. The model assumes that all pre-sale deposits are deposited in trust until settlement.

In addition to setting the deposit amount, you can nominate:

- Any interest earned on the deposit. The interest on deposits is calculated from the middle of the exchange period to the middle of the settlement period and spread evenly through the settlement period.

- The proportional split of the interest earned between the buyers and the seller (developer). By inputting 100% the developer would retain all the interest earned on the deposit. Typically contracts specify a 50:50 split.

Report Pre-Sale Commissions as Project Cost (Optional)

Select via the Preferences to report all Commissions incurred at time of Exchange as either a positive Project Costs or a negative Revenue. This will impact how the Development Margin is reported, and where other cost items are a % of Project Costs.

10.7.7 Financing

Default Funding Priority

The program accommodates up to 11 sources of financing - Developer's Equity and 11 other Loans. The program assumes the following default funding priority (this can be manually adjusted in the cash flow tables):

1. Developer's Equity is drawn down first as costs are expended.

2. Thereafter money is borrowed from Loans 1 to 10 (if used), either fully upfront or drawdown progressively, until the maximum amount of these loans is borrowed.

3. Money is then borrowed from the Senior Loan (by default, acts as a Line of Credit facility).

4. As the project receives net revenue this reduces Loan 10 until the loan is fully paid.

5. Thereafter revenue pays back Loan 9, then Loan 8, etc, until all Loans are repaid.

6. Thereafter revenue pays back Developer's Equity.

7. Thereafter the project pays profit shares (if applicable) and then retains the balance as profit.
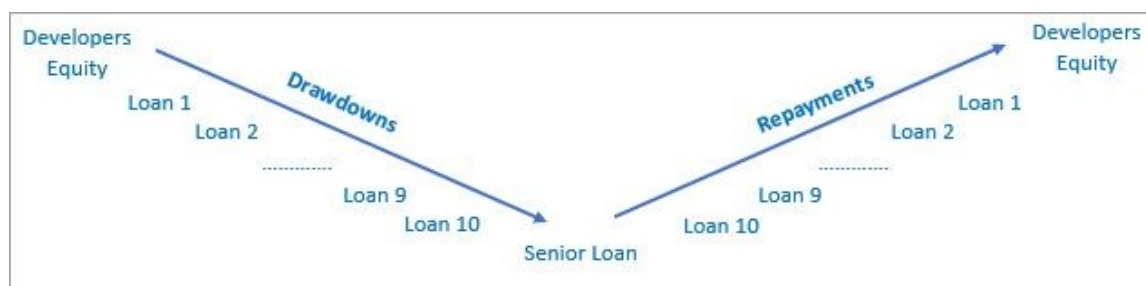
Default Funding Priority

Funding Limits and Loan Ratios

Throughout the Finance Preferences, the user will have the ability to set:

- **Loan Facility Limits:** These are the defined drawdown limits for a loan, and

- **Loan Ratios:** The denominator for working out the % that is borrowed for reporting purposes only. It may be different to the Facility Limit.

It is therefore important to understand the options that are available for these preferences:

Option	Description	Facility Limits	Equity Ratios	Debt Ratios
Fixed Amount	The loan limit is manually entered on the Finance input section.	●	○	○
% of Purchase Price	A percentage of the Land Purchase price only, inclusive of GST/VAT.	●	●	●
% of Land Acquisition Costs	A percentage of the Land Purchase price and any associated acquisitions costs (Stamp duty, Legal Fees, etc), inclusive of GST/VAT.	●	●	●
% of Project Costs	A percentage of all Project Costs (exclusive of GST/VAT), which exclude Selling Costs, Leasing Costs, Interest Charges and Fees (e.g Application, Line and Standby)..	●	●	●
% of Project & Finance Costs	A percentage of all Project Costs (exclusive of GST/VAT), which exclude Selling Costs and Leasing Costs but include Interest Charges, Application Fees and Line Fees.	○	●	●
% of Hard Costs	A percentage of costs that have defined as 'Hard Costs' as per the 'Global' section of the Finance Preferences.	●	●	●
% of Construction Costs	A percentage of total Construction Costs and Contingencies inclusive of GST/VAT.	●	●	●
% of Gross Sales	A percentage of Gross Sales Revenue (including Capitalised Sales) inclusive of GST/VAT/Sales Tax.	●	●	●
% of Sales (net of Tax)	A percentage of Sales Revenue (including Capitalised Sales) exclusive of GST/VAT/Sales Tax.	●	●	●
% of Sales (net of Selling Costs and Tax)	A percentage of Sales Revenue (including Capitalised Sales) exclusive of GST/VAT/Sales Tax and Selling Costs.	●	●	●
% of Value of Pre-Sales	A percentage of all Sales Revenue (including Capitalised Sales) that have been sold at a defined pre-sale exchange date.	●	●	●
% of Debt Funding	A percentage of total funds invested by all debt Lenders.	○	●	○
% of Net Profit	A percentage of total net development profit (after profit share has been paid out).	○	●	○

10.7.7.1 Equity

Equity						Opening Balances
Developer's Equity Contribution		Fixed Amount	Percentage			
Injected in total upfront.		2,000,000	0.00%	Fixed Amount		
Interest Charged on Equity			3.00%	per annum Nominal – Capitalised (Compounded)		2,000
Interest received on Surplus Cash			2.20%	per annum received in arrears.		-
% of Available Funds to Repay Equity Before Debt			10.00%			

Developer's Equity Contribution You can nominate an equity contribution by the Developer, either by a fixed amount or a on a percentage loan ratio, and can either be injected upfront or progressively when required. These options are set via the Finance Preferences.

Alternatively you can manually stage the equity injections/repayments in the cash flow table (click on the relevant button).

You cannot manually inject equity after the last date that the cumulative cash flow turns positive. Any date before then, you can put a:

- **Negative amount (repayment)**, where the equity owner is extracting equity from the project (i.e. equity owner cash inflow and project cash outflow), or

- **Positive amount (injection)**, where the equity owner is contributing to the project (i.e. equity owner cash outflow and project cash inflow.

Interest Charged on Equity	There is provision to nominate a per annum interest rate charged on the equity loan balance. The way that interest is paid is set via Finance Preferences.
Interest received on Surplus Cash	There is provision to nominate a per annum interest rate earned on surplus cash reserves.
% of Available Funds to Repay Equity Before Debt	Enter a % of available funds (positive net cash flow) that is used to repay equity before repaying debt.

- Equity will only be repaid via this option if it has been set in the Finance Preferences that equity is 'repaid when available'. If it has been set that equity is 'repaid at project end' and the user has entered a % in this input, then rather than repay equity, the nominated % of funds will be placed in the surplus cash account.

- If the % is too high, debt may never be able to be repaid due to interest being higher than available repayments.

Opening Balances	Enter in the opening balances for Interest Charged on Equity and Received on Surplus Cash.

These inputs can be used where:

- The funding facility is not solely used for this particular project, or

- The costs/revenue were incurred before the model's 'Date of First Period' (or Project Start).

10.7.7.2 Loans 1 to 10

By default, Loans 1 to 10 are the next lending facilities after equity has been utilised. They may be commonly a first mortgage against the land or could also represent a quasi equity partner. There are certain items that are relevant if Loans 1 to 10 are used.

Loan 1		Description	Lender Name	Debt		Opening
Facility Limit			Fixed Amount	Percentage		Balances
Drawn down in total at loan commencement.			1,000,000	0.00%	Fixed Amount	
Month Commencement		Auto	0			
Maturity Month		Manual	24	Jul-2020		
Interest Rate			5.00%	per annum Nominal – Capitalised (Compounded)		4,500
Term of P & I Loan			120	Months		
Fees			Amount	Percentage	Month Paid	
	Application Fee		5,000	0.00%	2	-
	Annual Line Fee		-	1.20%	Monthly	Paid in Arrears	-
	Standby Fee			0.50%	Quarterly	Paid in Arrears	-
Profit Split to Lender 1			10.00%			

Facility Limit	This is the amount of debt that is borrowed, either as a fixed amount or a on a percentage loan ratio. If there is no Loan required, set this to zero (0), or switch to Simple Mode. The user may also indicate whether the loan is drawn down at the loan commencement or progressively drawn down when required. These options are set via the Finance Preferences.
	Alternatively you can manually stage the debt drawdowns/repayments in the cash flow table (click on the relevant button) by entering a:
	• **Negative amount (drawdown)**, where the developer is manually drawing down more funds from the lender.
	• **Positive amount (repayment)**, where the developer is manually repaying funds back to the lender.
Month Commencement	The commencement date (period start) for the loan.
	• If nominating a commencement period, it must be later than the maturity period.
	• If left as Auto (Automatic Commencement), the loan will be drawn down according to the default funding priority.
Maturity Month	Even though the program automatically pays back the loan, the user has the ability to set a maturity date (period end) for the loan.
	• If nominating a maturity period, the user may also nominate which other funding source will be refinancing that loan at maturity via the Finance Preferences.
	• If left as Auto (Automatic Maturity), the loan will cease according to the default funding priority.
	This input is mandatory if a Principal and Interest facility is selected for a loan.
Interest Rate	There is provision to nominate a per annum interest rate charged on the loan, and it can be manually varied for different periods in the cash flow tables.
Term of P&I Loan	If a Principal and Interest loan is selected as the Interest Payment Type in the Preferences, then enter in the term of the loan to work out the periodic repayments. This does not determine when the loan

matures - the loan will mature according to the nominated 'Maturity Month'.

Fees

There are two types of fees (entered as either an amount or a % of the facility limit) that can be paid to a lender:

- **Application Fees:** These are a one-off payment and paid at the nominated period.

- **Line Fees:** These are entered as a per annum amount and:

  o Charged and paid either monthly or quarterly, based on the selected option. (Note: The option to select Monthly/Quarterly payment frequency is only available when the cash flow rest periods of the model is set to 'Monthly')

  o Occur during the period that interest is due (i.e. in arrears) or during the period that the loan balance is in deficit (i.e. in advance), option you nominate in the Preferences for Line Fee Payment.

- **Standby Fees:** These are entered as a percentage per annum rate, calculated on the undrawn loan amount, and:

  o Charged and paid in arrears either monthly or quarterly, based on the selected option. (Note: The option to select Monthly/Quarterly payment frequency is only available when the cash flow rest periods of the model is set to 'Monthly')

  o Occur until the entire Facility Limit of the loan is drawn down in full, or until the loan is repaid in full, whichever occurs first.

Profit Split

A percentage rate can be inputted to split a portion of the profit to the lender as a form of 'success fee'.

By entering a percentage for profit share, it will impact your performance indicators and risk assessment, depending on what option you nominate in the Preferences for 'Gross or Net Profit Performance'.

Opening Balances

Enter in the opening Interest and Fee Balances for the Debt accounts.

These inputs can be used where:

- The funding facility is not solely used for this particular project, or

- The costs were incurred before the model's 'Date of First Period' (or Project Start).

10.7.7.3 Senior Loan

The Senior Loan is drawn down when all equity and Loans 1 to 10 have been fully used.

Facility Limit	The use of the facility limit can be changed via the Finance Preferences:

- **Used as an Overdraft Facility:** By default, this is a line of credit facility and there is no limit on the borrowed amount. No facility limit is required and the input is disabled.

- **Use Equity as the Overdraft Facility:** A facility limit can be set on the Senior Loan as a fixed amount, and then any additional funding is sourced from Equity.

The funds draw down for the Senior Loan are automatically progressively drawn down as and when required. This cannot be changed by any manual inputs, unlike Loans 1 to 10.

Interest Rate
There is provision to nominate a per annum interest rate charged on the loan, and it can be manually varied for different periods in the cash flow tables.

Fees
There are two types of fees that can be paid to a lender:

- **Application Fees:** These are a one-off payment and paid at the nominated period.

- **Line Fees:** These are entered as a per annum amount and:

  o Charged and paid either monthly or quarterly, based on the selected option. (Note: The option to select Monthly/Quarterly payment frequency is only available when the cash flow rest periods of the model is set to 'Monthly')

  o Occur during the period that interest is due (i.e. in arrears) or during the period that the loan balance is in deficit (i.e. in advance), option you nominate in the Preferences for Line Fee Payment.

- **Standby Fees:** These are entered as a percentage per annum rate, calculated on the undrawn loan amount, and:

  o Charged and paid in arrears either monthly or quarterly, based on the selected option. (Note: The option to select Monthly/Quarterly payment frequency is only available when the cash flow rest periods of the model is set to 'Monthly')

o Occur until the entire Facility Limit of the loan is drawn down in full, or until the loan is repaid in full, whichever occurs first.

Note: If the loan is setup to be used as an overdraft facility, then these fees can only be entered as an amount, otherwise if a facility limit can be set, then they can also be entered as a % of the facility limit.

Maintain Leverage on Senior Loan

To maintain a certain level of leverage on the Senior Loan, enter in a % of future positive net cashflows.

This will ensure that some leverage is maintained and enable quicker repayments to equity and hence improve the return on equity.

Opening Balances

Enter in the opening Interest and Fee Balances for the Debt accounts.

These inputs can be used where:

- The funding facility is not solely used for this particular project, or

- The costs were incurred before the model's 'Date of First Period' (or Project Start).

10.7.7.4 Other Finance Costs

Amount and **Start** and **Span** (Mandatory)

For each finance cost item such as application fees, legal fees, mortgage stamp duty, etc, it is mandatory to input:

- The number of units (e.g sqm) and base rate per unit (e.g $/sqm), and

- The start and span periods.

If any of the above are entered as zero (0), then the program will not include the cost in the cash flow.

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or

- Enter "**R**" to escalate to start and continue escalation through span period, or

- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.

- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

10.7.8 Project Hurdle Rates

Developer's Discount Rate (target IRR)	20.00%	per annum Nominal, on cash flow that includes financing costs but excludes interest and corp tax
Nominate an estimate of IRR	0.00%	per ann.
Developer's Cost of Equity (for WACC)	0.00%	

Project Discount Rate (Target IRR)

The discount rate or target IRR only affects three performance indicators on the 'Summary' sheet:

- Project Net Present Value (NPV),

- Benefit Cost Ratio.

You can use the Preferences to change the discount rate calculation method (include or exclude finance costs and interest) and also the method of conversion from the annual discount rate to the monthly discount rate (quarterly or half yearly depending upon the rest period you selected).

Nominate an Estimate of IRR

This is a number that you guess is close to the result of IRR. The model uses an iterative technique for calculating IRR. Starting with the estimate, it cycles through the calculation until the result is accurate within 0.00001 percent. If it can't find a result that works after 20 tries, the #NUM! error value is returned.

In most cases you do not need to provide the estimate for the IRR calculation. If it is omitted, it is assumed to be 0.1 (10 percent).

Important Note About Multiple IRRs:

- When cash flows of a project change sign more than once (e.g. cash outflow followed by cash inflows followed by cash outflow), there may be multiple (and technically valid and correct) IRRs for that cash flow.

- The IRR that ARGUS EstateMaster DM will *attempt* to adopt, will be the one that is calculated using the user-defined 'guess rate' in the aforementioned input field.

- However, in the circumstance where such IRR calculation results in a #NUM! error value (cannot find a result after the iterative calculation process), ARGUS EstateMaster DM will use different 'guess rates' in the background, until it finds a result.

- These start from 0%, and then using 3 different +ve and -ve percentages based on the user-defined 'guess rate'. For example, if the user-defined 'guess rate' of 20% cannot find a result, then background process will attempt to find a result, using the following 'guess rates': 0%, 10% (1/2 of the user-defined 'guess rate'), -10% (the inverse of the previous 'guess rate'), 40% (2 x the user-defined 'guess rate'), -40% (the inverse of the previous 'guess rate'), 60% (3 x the user-defined 'guess rate') and -60% (the inverse of the previous 'guess rate').

- If a result is found using such process (most likely), this is the one that is reported in ARGUS EstateMaster DM. However, if a result is still not found after this process, the IRR will be reported with an "N.A." value.

- A note will be displayed in this input section if multiple IRRs have been detected and/or an alternative guess rate was required to achieve a result.

Developer's Cost of Equity   Enter in the desired cost of the developer's equity.

This is used to calculate the [Weighted Average Cost of Capital](#) on the Summary Report

10.8 Cashflow Sheet

10.8.1 Cash Flow Components

The 'Cash Flow' sheet is a large worksheet both horizontally and vertically.

Horizontally it has three sections when moving from left to right. These sections are colour coded at the top of the sheet for clarity and comprise of:

- **Yellow Section: Input Assumptions**

This section, along with the Setup Sheet, is where the input assumptions are entered, either manually or automatically if imported from an ARGUS EstateMaster DF file. This section also contains additional columns related to the re-forecasting modes and input assumption vs. cash flow variations.

- **Purple Section: Forecast Summary**

This section is for the tracking of a project along with some features of a more accounting nature.

- **Light Blue/Aqua Section: Cash Flow**

This section is the period by period cash flow where information shown in black text is pre-filled automatically from data which has been input into the yellow 'Input Assumptions' section. Data here can be manually amended/added/deleted and can be updated from accounts and automatically input.

Vertically it has four sections when moving from top to bottom. These sections comprise of:

- Cost and Revenue Inputs

- Stock Summary

- Project Summary

- Financing

10.8.2 Cash Flow Tools

The 'Cash Flow' sheet contains several tools to increase its flexibility and functionality. These tools are located in the Ribbon Menu when the Cash Flow sheet is activated
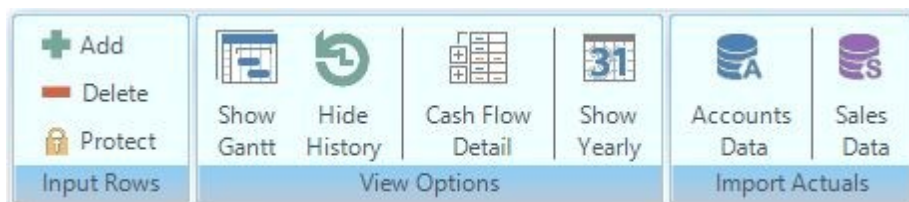
Add Input Rows

Allows the user to insert additional input rows for any cost or revenue section. To insert more rows:

1. Select any cell along the row below where you want to insert a row (rows will be inserted above the selected cell).

2. Click on the Input Rows 'Add' button.

3. The function will prompt the user to indicate the number of additional rows required (max 50 at a time) and insert them above the selected cell.
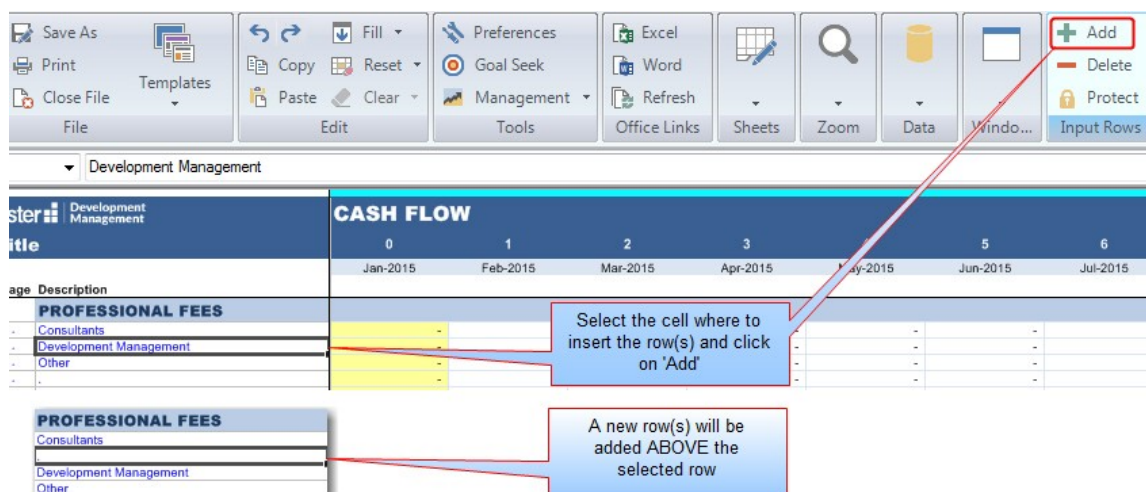
Delete Input Rows

Allows the user to delete input rows not being used on the 'Cash Flow' sheet. To delete rows:

1. Highlight the cells for the rows you wish to delete (the entire row does not need to be highlighted).

2. Click on the Input Rows 'Delete' button.

3. The function will check to make sure that the rows are allowed deleted before doing so:

    - The first and last input row of a section can not be deleted.

    - Only one group of rows can be deleted at a time (only contiguous rows can be deleted).

    - Rows containing a description or cash flow data for any stored forecast can not be deleted.
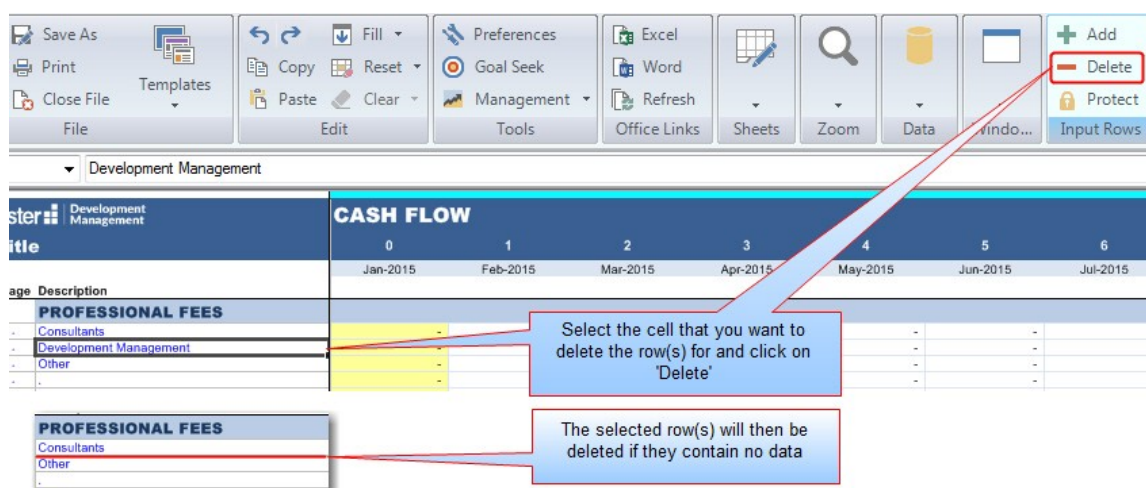
Disabling the ability to Insert or Delete Rows
In the Preferences, there is an option to disallow the Insert/Delete Row feature. This may be helpful when creating templates and the number of rows is required to be fixed. *Insert/Delete Input Rows* ☑ Allow user to Insert or Delete cost and revenue input rows
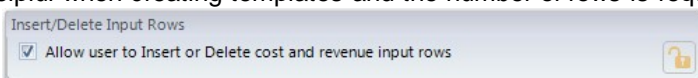
Protect Input Rows

Allows the user to lock a specific input row so that no additional edits can be made to it. To lock a row:

1. Select any cell on a single input row that you wish to lock (only one row at a time can be locked).

2. Click on the Input Rows 'Protect' button.

3. A pop-up will appear displaying the current Lock Status of that row. You can then change it to any of the following options:
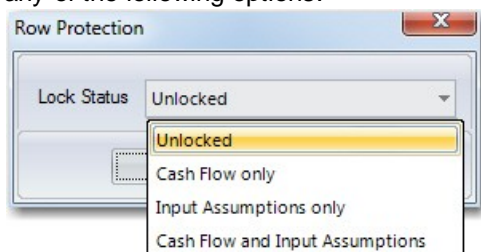
- **Unlocked:** All input cells on that row revert to their default unlocked state.

- **Cash Flow Only:** All columns in the Cash Flow section for that input row are locked.

- **Input Assumptions Only:** All columns in the Input Assumptions section (including any input cells in the Forecast Summary section) for that input row are locked.

- **Cash Flow and Input Assumptions:** All input cells on that row are locked.

Input Cell Protection Hierarchy
1. Since there are various methods of protecting/locking input cells and assumptions, a setting that locks/protects an input cell over-rules one that unlocks it.   For example: If you have used the 'Protect Input Rows' function to lock the Cash Flow inputs, but in the Budget Management Preferences you have selected to 'allow user to edit historical Cash Flow' data, the 'Protect Input Rows' setting will over-rule, and the user will not be able to edit any Cash Flow' data irrespective of the Preference. 2. If the Cash Flow has been locked using the 'Protect Input Rows' function, you will still be able to use any of the 'Update Cash Flow with Accounts Data' methods to import data in the cash flow, irrespective if a row is locked.

Gantt Chart

Allows the user to toggle the layout of the 'Cash Flow' sheet as a Gantt Chart (project timeline) or the standard Cash Flow input sheet.
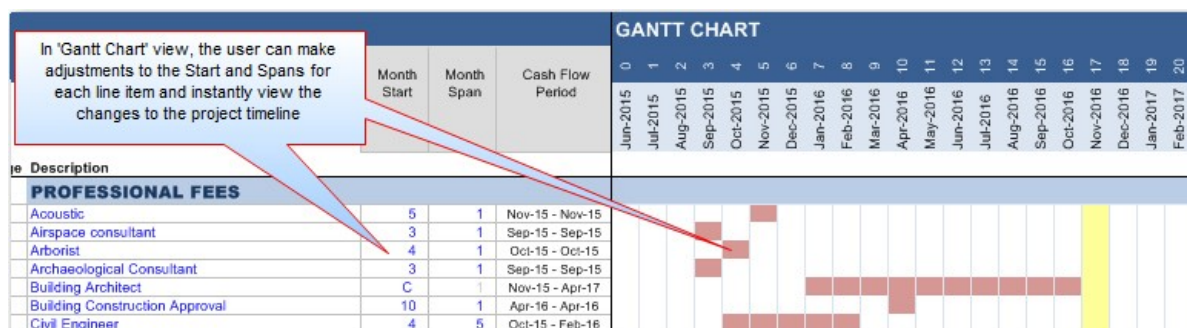
Hide/Show History

Allows the user to toggle the visibility of the historical columns in the Cash Flow table.

Cash Flow Details

Allows the user to change the way the cash flow input sections are displayed in relation to the rows and columns.

Costs and Revenues

For each cost and revenue section, the user can select from the following row views:

- **All Rows:** Shows all rows (used and unused) for a particular input section.

- **Used Rows:** Shows only used (populated) rows for a particular input section. A row is 'used' when there is an input description evident and/or there is data in any of the stored forecasts.

- **Sub Totals:** Hides all input rows for a section and only shows the heading and sub total row.

Stock Summary

For the Stock Summary report, the user can select from the following row views:

- **Quantity Sold/Handed Over:**

  o Select to hide/show the exchanges and settlements by quantity.

  o For Quantity Handed Over, select to show all rows, used rows or sub-totals only.

    ▪ Note: To be able to manually update/edit the Quantity Handed Over data for each Sales Revenue line item, this view must be set to either 'All Rows' or 'Used Rows'

- **Area Sold/Handed Over:**

o Select to hide/show the exchanges and settlements by area.

o For Area Handed Over, select to show all rows, used rows or sub-totals only.

▪ <u>Note</u>: To be able to <u>manually update/edit the Area Handed Over data</u> for each Sales Revenue line item, this view must be set to either 'All Rows' or 'Used Rows'

- **Value Sold/Handed Over:** Select to hide/show the exchanges and settlements by value.

- **Land Use Groups**: Select to hide/show the sub totals for quantity/area/value grouped by their Land Use Category.

Financing
For the Financing Cash Flow, the user can select from the following row views:

- For Financing Costs:

  o **All Rows:** Shows all rows (used and unused) for a particular input section.

  o **Populated Rows:** Shows only used rows for a particular input section. A row is 'used' when there is an input description evident and/or there is data in any of the stored forecasts.

  o **Sub Totals:** Hides all input rows for a section and only shows the heading and sub total row.

- For Sources of Funding:

  o **All Sources:** All sources of funding are displayed in the Financing Cash Flow, regardless if they are used or not.

  o **Used Sources:** Only sources of funding that are 'used' are displayed. A source of funding is used if there are any drawdowns, repayments, interest charges or profit share payments

Columns

The user can use this function to hide various columns in the 'Input Assumptions' and 'Forecast Summary' sections . This is ideal if:

- The inputs in that column are not required.

- The inputs in that column have been completed and need no further adjustment.

- Budgets Transfers, Accruals or Commitments are not required.

- The Original, Project or Previous Forecasts/Budget is not used.
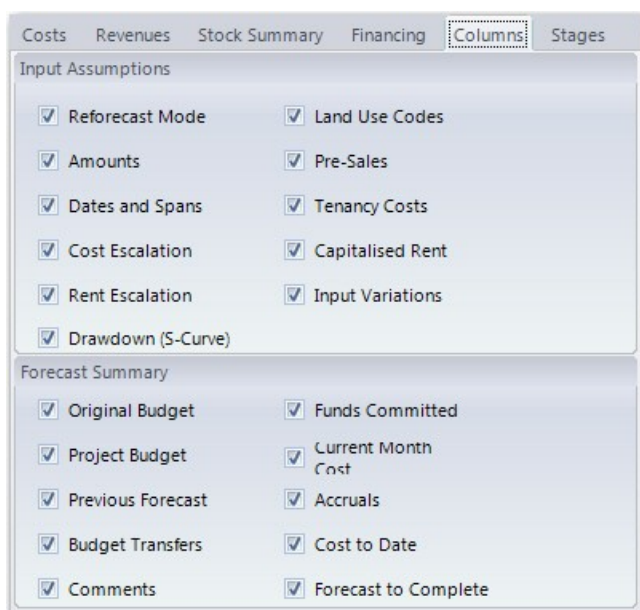
Stages

If the project being modelled is multi-staged, and individual cost and revenue line items have been allocated to a Stage in the Input Assumptions, then the user can filter the input rows by Stage (maximum of 150 stages at at time).
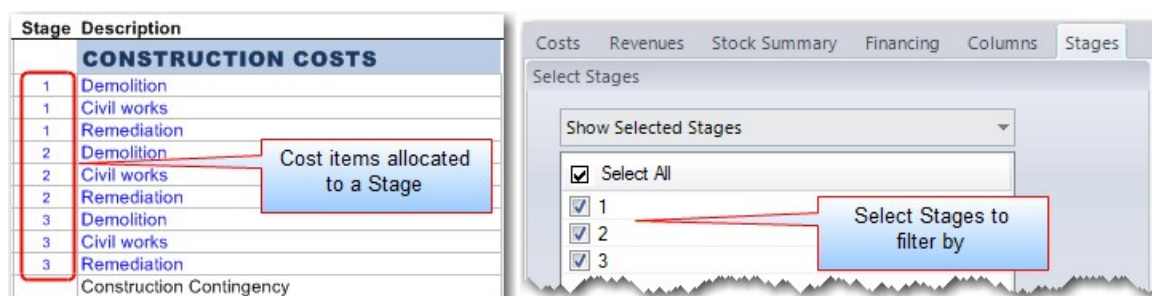
When the filter is applied:

- All input rows that belong the selected stage will remain visible, while all other rows that belong to another stage, or that have 'G' ('Global' costs), '-' (the default Stage input) or are blank, will be hidden.

- All Cost and Revenue section sub-totals in the Cash Flow will be hidden.

- All other outputs on the Cash Flow, such as the Project Summary and Financing will be still calculated on a 'Whole of Project' basis.

- All other reports (e.g Summary, Chart, etc) will be still calculated on a 'Whole of Project' basis.

Yearly Cash Flow

This feature on the Cash Flow sheet allows the user to switch the Cash Flow to a Financial Year view, where each period represents the financial year ending at the nominated month as defined in the Preferences.

Code	Stage	Description	Year 0 Jun-2019	Year 1 Jun-2020	Year 2 Jun-2021
REVENUE					
9000		Gross Sales Revenue	-	-	8,500,000
8000		Selling Costs	-	-	-
12000		Gross Rental Income	-	-	-
13000		Leasing Costs	-	-	-
9100		Other Income	-	-	-
-		Interest Received	-	-	-
-		GST Payments (Liabilities)	-	-	(772,727)
		TOTAL NET REVENUE	-	-	7,727,273
COSTS					
1000		Land and Acquisition	2,000,000	-	-
2000		Project Contingency (Reserve)	-	-	-
3000		Professional Fees	363,636	-	-
4000		Construction Costs (inc Contingency)	-	5,000,000	-
5000		Statutory Fees	-	-	-
6000		Miscellaneous Costs 1	-	-	-
6000		Miscellaneous Costs 2	-	-	-
6000		Miscellaneous Costs 3	-	-	-
7000		Land Holding Costs	-	-	-
10000		Financing Costs (exc Fees)	-	-	-
-		Pre-Sale Commissions	-	-	-
-		GST Refunds (Input Credits)	(214,876)	(454,545)	-
		TOTAL NET COSTS	2,148,760	4,545,455	-
		Holdback Retained (-ve)	-	-	-
		Holdback Released (+ve)	-	-	-
		TOTAL NET COSTS (inc Holdback)	2,148,760	4,545,455	-
Corporate Tax					
Net Cash Flow (before Interest & after Corporate Tax)			(...455)	727,273

When the Yearly Cash Flow is enabled:

- The default periodic view (i.e. Monthly, Quarterly, etc) is hidden,

- Any manual input/adjustment rows are locked (manual inputs are only available in the default cash flow view)

- The menu button will display as 'Show Monthly/Quarterly/etc' (depending on the Rest Period setting), so the user can toggle back to the default view.

10.8.3 Input Assumptions

The 'Input Assumptions' section (Yellow Section) of the 'Cash Flow' sheet is where the majority of input data would have been imported to from an ARGUS EstateMaster DF file or where a user would have manually entered data before setting an Original Budget.

The 'Input Assumptions' has a generic header with relevant input cells appearing for each section as the user scrolls down the page.

To assist in entering data, comments have been inserted that can be displayed by selecting an appropriate header description.

10.8.3.1 Reforecast Mode

This is the first column in the horizontally scrollable 'Cash Flow' sheet.

The Reforecast Mode column indicates for each cost and revenue how it will adapt in the light blue/aqua 'Cash Flow' section if entries in the 'Cash Flow' section differ from data created automatically from the yellow 'Input Assumptions' section and the related 'Setup' sheet. These changes in the 'Cash Flow' section could result from manual entry or by updating from accounts.

A = Automatic Mode: If 'A' is entered as the Reforecast Mode for a cost or revenue, then the following occurs:

- The Input Assumptions for that cost or revenue are displayed and is used to generate the detailed cash flow for that line item to the right.

- The cash flow that is generated for that line item is displayed in black font, indicating that the default formulas are being used.

- Any manual inputs made directly to the cash flow will reforecast the cash flow by reapportioning the balance over the defined span. Once the defined period (start and span) has been surpassed by a manual input, any balance is then allocated to the next month only.

S = Single Reforecasting Mode: If 'S' is entered as the Reforecast Mode for a cost or revenue, then the following occurs:

- The same as 'Automatic Mode', except any manual inputs will reforecast the cash flow by reapportioning the balance over the next time period only.

N = No Reforecasting Mode: If 'N' is entered as the Reforecast Mode for a cost or revenue, then the following occurs:

- The same as 'Automatic Mode', except any manual inputs will not reforecast the cash flow.

M = Manual Mode: If 'M' is entered as the Reforecast Mode for a cost or revenue, then the following occurs:

- The Input Assumptions for that cost or revenue are disabled and the cash flow for that item is reset.

- The cash flow for that line item is displayed in blue font, indicating that the default formulas are not being used and data must be entered directly in the cash flow by the user by way of manually overriding the cash flow cells.

Reforecast Mode Example

Say there is a $1,000 cost that starts in month 0 and has a 4 month duration (i.e. $250 per month), it would generate the following cash flow.

PROFESSIONAL FEES				
Consultants	250	250	250	250
Other	-	-	-	-
.	-	-	-	-

Using the different Reforecast Modes, the following scenarios would occur if the amount in month 0 is manually overridden to show an actual expenditure of $100:

A = Automatic Mode

PROFESSIONAL FEES				
Consultants	100	300	300	300
Other	-	-	-	-
.	-	-	-	-

The remaining balance of $150 ($250 forecast less $100 actual) is evenly spread across the 3 remaining months (an extra $50 per month) of the specified span of 4 months

S = Single Reforecasting Mode

PROFESSIONAL FEES				
Consultants	100	400	250	250
Other	-	-	-	-
.	-	-	-	-

The remaining balance of $150 ($250 forecast less $100 actual) is allocated to the next month only, increasing it from $250 to $400

N = No Reforecasting Mode

When the Reforecasting Mode is switched to 'N' (No Reforecasting), then any manual inputs in the cash flow have no affect on the future months

M = Manual Mode

Since the Input Assumptions are ignored when in 'Manual' Mode, no other amounts will appear in the cash flow other than what is manually inputted by the user.

10.8.3.2 Land Purchase and Acquisition Costs

Land Purchase Price (Optional) — Input the land purchase price in the first input item.

Deposit and Payments (Optional) — You can stage your land acquisition payments - deposit plus multiple staged payments either as a percentage and/or an amount. Each payment is a transfer of funds from the Developer to the Land Owner. Note that Deposit in a trust account is different from a payment because the land owner does not receive it until settlement or the first payment date.

Stamp Duty (Optional) — The automatic stamp duty is calculated for the total purchase price. An option in the Preferences is available to select whether stamp duty is calculated on the land including or excluding GST/VAT. You will need to input the start and span dates for the payment of stamp duty.

If several acquisitions are involved then you should set the automatic stamp duty to NIL and manually calculate each stamp duty payment and enter them in 'Other Acquisition Costs'.

Interest on Deposit in Trust Account (Optional) — Interest may be earned on that deposit during the time it sits in the trust account and the interest is divided evenly between the seller (Land Owner) and the buyer (Developer). Both the deposit percentage and interest on deposit are optional inputs.

Profit Share to Land Owner (Optional) — You can also nominate a percentage of your development profit to be paid to the land owner at the completion of the project, irrespective if you a modelling a joint venture or not. By entering a percentage for profit share, it will impact your performance indicators and risk assessment, depending on what option you nominate in the Preferences for the calculation of Development Profit - Gross (before profit share) or Net (after profit share).

Other Acquisition Costs

% Paid and Lump Amount (Optional) — For other acquisition costs, such as legal fees, survey costs, etc, you may elect to either enter:

- A percentage of the land's purchase price, and/or
- A lump sum amount.

If entering a % of the land price and running the model in either GST or VAT mode then:

- The cost will be based on the land price excluding GST/VAT when using the General Tax Rule.

- The cost will be based on the land price including GST when using the Margin Scheme (GST Mode only).

Start and Span (Mandatory)

For each item's Start and Span, you have the following options:

- Enter a number to nominate the start and span manually, or

- Enter "**L**" as the start date to have the cost paid pro-rata with land payments. If "L" is chosen, the span date is ignored.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.

- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

10.8.3.3 Project Contingency

5.00%	of Project Costs and/or	500,000

In this item you may put in a project contingency factor (or project reserve) as an amount and/or a percentage of development costs (inclusive of any GST/VAT), which are defined as:

- Professional Fees

- Construction Costs

- Statutory Fees

- Miscellaneous Costs 1, 2 and 3

- PreSale Commissions (reported as a project cost).

This contingency cost is automatically paid pro-rata with the aforementioned development costs.

GST/VAT on Project Contingency
There is no separate input for nominating whether GST/VAT is applied to Project Contingency - it is dependant on the costs that are a part of Project Contingency and whether they have GST/VAT on them.
Since Project Contingency is based on various project costs, and all those costs may not necessarily always have GST/VAT on them, it gets the weighted average GST/VAT rate on all those items to forecast the GST/VAT on Project Contingency.
For example, if the base GST/VAT rate was 10% and if half of the cost items excluded GST/VAT, then a background calculation will determine that the weighted average GST/VAT rate to apply to the Project Contingency is actually 5% (1/2 x 10%).

Setting Project Contingency as a Balancing Account

If you select to use Project Contingency as a Balancing Account via the Preferences, the following will occur:

1. The Project Contingency Fixed Amount input is set to the same value as the 'Current Forecast amount.

2. The Project Contingency % Percentage input is set to zero and greyed out (any input in this field will be ignored).

Changes to Project Contingency inputs when used as a Balancing Account

As you progress through the project:

- Any increases in the costs (compared to the selected Budget) that are covered by Project Contingency will cause the contingency to reduce by the same amount.

- If cost increases exceed the budgeted contingency, the contingency account will go into negative and be highlighted red.

	Original Budget Sep-2016	Project Budget Jan-2017	Current Forecast Jan-2017	Variation to Project	Variation to Original
PROJECT CONTINGENCY	1,879,542	3,099,129	(138,988)	(3,238,117)	(2,018,530)

- A warning will also be displayed to the user when saving the file.
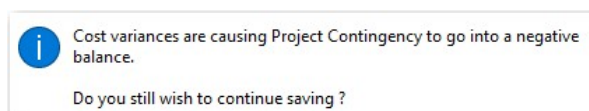
Cost variances are causing Project Contingency to go into a negative balance.

Do you still wish to continue saving ?

Important Note: If both Construction and Project Contingency is selected as a Balancing Account, then any increases in Construction Costs will first be drawn from Construction Contingency account, until it reaches zero, with the remaining increases being then drawn from Project Contingency account.

10.8.3.4 Professional Fees

% of Construction and/or Amount (Mandatory)	For each cost item it is mandatory to input:

- A percentage of total construction cost (excluding GST/VAT if applicable), and/or

- The number of units (e.g sqm) and base rate per unit (e.g $/sqm).

Holdback/Retention (Optional)

Enter the percentage of each payment being retained for the purpose of a Construction Lien (e.g. a legal claim to payment made by a contractor or supplier) .

The amount retained is subsequently released based on the 'Periods to Release' input in the Construction Cost section, when it is assumed that all liens that may be claimed against the holdback have expired or discharged.

Revert to the Project Summary section to see a roll-up of the see the amounts being retained and released, with the ability to override them each cash flow period.

Start and Span (Mandatory)

For each item's Start and Span, you have the following options:

- Enter a number to nominate the start and span manually, or

- Enter "**C**" as the start date to have the cost paid pro-rata with construction costs. If "C" is chosen, the span date is ignored.

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or

- Enter "**R**" to escalate to start and continue escalation through span period, or

- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

S-Curve (Optional)

You may elect to span the cost payments evenly through the span period or apply a cumulative S-shape curve.

- Leave blank or enter "**E**" to evenly spread the cost, or

- Enter one of the codes (**S**, **S1** to **S10**) for the 11 client customisable S-Curves. You can modify the S-curve profiles in the 'Profiles' tab.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.
- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.
- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

Development Management Fee (Optional)

Scroll down the last professional fee item to input a percentage for Development Management. Using the Preferences, you can change the fee to be expressed as a percentage of either:

- Total Gross Sales Revenue,

- Total Net Sales Revenue (Gross Sales *less* Selling Costs),

- Total Project Costs including Land, or

- Total Project Costs excluding Land.

Project costs exclude finance costs and GST/VAT if applicable.

Development Management	2.00%	% of Project Costs (exc Land, Finance & Tax)

The Development Management Fee can also be spread in the cash flow in five different ways:

- Enter a start and span period manually.

- Enter "**C**" as the start date to have the cost paid pro-rata with Construction Costs.

- Enter "**P1**" as the start date to have the cost paid pro-rata with Project Costs (inc Land).

- Enter "**P2**" as the start date to have the cost paid pro-rata with Project Costs (exc Land).

- Enter "**S**" as the start date to have the cost paid pro-rata with Sales Settlements.

10.8.3.5 Construction Costs

Cost Type (Optional)

Enter the relevant Code defined in the Construction Cost Type section. This will categorise the Construction Costs and report them appropriately on the Summary Report. It also allows the user to apply different escalation rates to different components of construction.

Leave blank or enter in 0 (Zero) if you do not wish to allocate this item to any specific cost type.

Amount (Mandatory)

For each cost item it is mandatory to input the number of units (e.g sqm) and base rate per unit (e.g $/sqm).

Holdback/Retention (Optional)

Enter the percentage of each payment being retained for the purpose of a Construction Lien (e.g. a legal claim to payment made by a contractor or supplier) .

The amount retained is subsequently released based on the 'Periods to Release' input, when it is assumed that all liens that may be claimed against the holdback have expired or discharged.

		Retention/Holdback			
1	10,000,000	10.00%	1	10	Feb-18 - Nov-18
			2	Months to Release	

Revert to the Project Summary section to see a roll-up of the amounts being retained and released, with the ability to override them each cash flow period.

Start and Span (Mandatory)

For each cost item it is mandatory to input the start and span periods.

If any of the above are entered as zero (0), then the program will not include the cost in the

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or

- Enter "**R**" to escalate to start and continue escalation through span period, or

- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

S-Curve (Optional)

You may elect to span the cost payments evenly through the span period or apply a cumulative S-shape curve.

- Leave blank or enter "**E**" to evenly spread the cost, or

- Enter one of the codes (**S**, **S1** to **S10**) for the 11 client customisable S-Curves. You can modify the S-curve profiles in the 'Profiles' tab.

Start and Span (Mandatory)

For each item, you must enter the start and span periods. If the span periods is zero (0) then the program will not include the cost in the cash flow.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.

- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

Construction Contingency (Optional)

Scroll down the last construction cost item to input a percentage for Construction Contingency (optional) as an amount and/or a percentage of construction costs (inclusive of any GST/VAT if applicable). This cost is automatically paid pro-rata with the construction costs.

| Construction Contingency | 5.00% | of Construction Costs and/or | 1,000,000 |

Setting Construction Contingency as a Balancing Account

If you select to use Construction Contingency as a Balancing Account via the Preferences, the following will occur:

1. The Construction Contingency Fixed Amount input is set to the same value as the 'Current Forecast amount.

2. The Construction Contingency % Percentage input is set to zero and greyed out (any input in this field will be ignored).

Changes to Construction Contingency inputs when used as a Balancing Account

As you progress through the project:

- Any increases in the costs (compared to the selected Budget) that are covered by Project Contingency will cause the contingency to reduce by the same amount.

- If cost increases exceed the budgeted contingency, the contingency account will go into negative and be highlighted red

- A warning will also be displayed to the user when saving the file.

Important Note: If both Construction and Project Contingency is selected as a Balancing Account, then any increases in Construction Costs will first be drawn from Construction Contingency account, until it reaches zero, with the remaining increases being then drawn from Project Contingency account. Therefore in this instance, the Construction Contingency account should never go into a negative balance.

10.8.3.6 Statutory Fees and Contributions

The title to this section may be changed to suit the user's requirements. All references to this section in other areas of the program will be changed automatically (i.e. 'Summary' sheet, Cash Flow, etc).

Amount and Start and Span (Mandatory)

For each cost item it is mandatory to input:

- The number of units (e.g sqm) and base rate per unit (e.g $/sqm), and
- The start and span periods.

If any of the above are entered as zero (0), then the program will not include the cost in the cash flow.

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or
- Enter "**R**" to escalate to start and continue escalation through span period, or
- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

S-Curve (Optional)

You may elect to span the cost payments evenly through the span period or apply a cumulative S-shape curve.

- Leave blank or enter "**E**" to evenly spread the cost, or
- Enter one of the codes (**S**, **S1** to **S10**) for the 11 client customisable S-Curves. You can modify the S-curve profiles in the 'Profiles' tab.

Start and Span (Mandatory)

For each item, you must enter the start and span periods. If the span periods is zero (0) then the program will not include the cost in the cash flow.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.
- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

10.8.3.7 Miscellaneous Costs

% and/or Amount (Mandatory)

For each cost item it is mandatory to input:

- A percentage (based on the options below), and/or
- The number of units (e.g sqm) and base rate per unit (e.g $/sqm).

The percentage basis is selected via an option in the Preferences, and can be different for each Miscellaneous Cost section.

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or

- Enter "**R**" to escalate to start and continue escalation through span period, or

- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

S-Curve (Optional)

You may elect to span the cost payments evenly through the span period or apply a cumulative S-shape curve.

- Leave blank or enter "**E**" to evenly spread the cost, or

- Enter one of the codes (**S**, **S1** to **S10**) for the 11 client customisable S-Curves. You can modify the S-curve profiles in the 'Profiles' tab.

Start and Span (Mandatory)

For each item's Start and Span, you have the following options:

- Enter a number to nominate the start and span manually, or

- Enter "**C**" as the start date to have the cost paid pro-rata with construction costs, or

- Enter "**S**" to have the cost paid pro-rata with sales settlements.

If "C" or "S" is chosen, the span date is ignored.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.

- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

10.8.3.8 Land Holding Costs

Amount (Mandatory)

For each cost item it is mandatory to input:

- The number of units (e.g sqm), and

- Base rate per unit per term (e.g $/sqm/month), where the term is identified in the following input column.

If any of the above are entered as zero (0), then the program will not include the cost in the cash flow.

Term (Mandatory)

This is the payment frequency for the nominated amount:

- **M** = Monthly

- **BM** = Bi-Monthly

- **Q** = Quarterly

- **BA** = Bi-Annually

- **Y** = Yearly

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or
- Enter "**R**" to escalate to start and continue escalation through span period, or
- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

Start and Span (Mandatory)

For each item, you must enter the start and span periods. In the case of the span period you may elect to input a number span or the letters DS or DR.

- **DS** = The span period will indicate to the model that you would like to diminish the land holding costs proportionally with sales.
- **DR** = The span period will indicate to the model that you would like to diminish the land holding costs proportionally with the take-up of leases/rental income.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.
- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

10.8.3.9 Selling Costs

% Paid and/or Amount (Mandatory)

For each selling costs item, such as marketing, advertising, legals etc, it is mandatory to input:

- A percentage of Gross Sales Values (i.e sales price inclusive of any GST/VAT/Sales Tax), and/or
- The number of units (e.g lots) and base rate per unit (e.g $/lot).

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or
- Enter "**R**" to escalate to start and continue escalation through span period, or
- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

Start and Span (Mandatory)

For each item, you must enter the start and span periods. In the case of the span period you may elect to input a number span or the letters S or E.

- Enter **"S"** to have the cost paid pro-rata with settlements or instalments (if using the Sales Revenue Collection Profile function), or

- Enter **"E"** to have the cost paid pro-rata with pre-sale exchanges (if used, otherwise it will be highlighted red).

If "S" or "E" is chosen, the span date is ignored.

GST/VAT (Optional)   Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.

- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

10.8.3.10 Sales

Units and **Area** (Mandatory)   For each sale item it is mandatory to enter:

- The total quantity (no. of lots, units, etc), and

- The total size of all sale items for that line item (sqm, sqft, ha, etc) based on the unit of measurement from the list selector (purple font), such as number of units or sqm, NLA, GFA, etc.

This information is used for further analysis on the Summary and Cash Flow (Stock Summary).

Current Sale Price (Mandatory)   This is the current non-escalated sale price. This must be based on either the Units or Area measurement (ie $/unit or $/area)

Sale Calc Method (Mandatory)   Indicate the method of calculating the total sale value. It is based on how the 'Current Sale Price' has been entered:

- If 'Current Sale Price' has been entered in as a $/sqm, then select "Per Sqm" from the list selector in the Sales Rate column. The unit of measurement (sqm, sqft, etc) is based on the option selected in the 'Total Area' column.

- If 'Current Sale Price' has been entered in as a lump amount, then select "Per Unit" from the list selector.

Pre-Sale Exchange Start and **Span** (Optional)   You may enter an exchange start date and span period, which is relevant only for pre-sales (items sold before completion).

If you nominate a pre-sale exchange for a sales line item, the program assumes all items in that line are pre-sold. Alternatively, you can split sales into two line items if you wish - those pre-sold and those sold after completion of development (i.e pre-sale exchange is ignored).

You should be aware of the following when adopting pre-sale exchanges:

- Any revenue escalation selected for that sale item will only apply up to the date of exchange. If no pre-sale date is entered then the escalation rates apply up to the date of settlement.

- Unless the Sales Revenue Collection Profile feature is used, no revenue is actually collected by the developer until settlement. At pre-sale exchange, any deposit that is paid by the buyer is actually paid into a trust account and is not received by the developer until settlement.

- The dates entered for the pre-sale exchange will impact the 'Sales Summary' on the Stock Summary report on the Cash Flow sheet.

Settlement Start and **Span** (Mandatory)

It is mandatory to enter the settlement date and span period for each sale item, otherwise the program will not include the revenue in the cash flow.

You should be aware of the following in relation to settlements:

- If the user has adopted pre-sale exchanges for a sale item and has elected to earn interest on any deposits collected at pre-sale, the interest earned will be apportioned between the developer and purchaser at time of settlement.

- When using the Sales Revenue Collection Profile feature, the final payment/instalment to the developer is made at the earliest milestone reached between the final nominated sales collection profile instalment and the settlement date.

- The dates entered for the settlements will impact the 'Handover Summary' on the Stock Summary report on the Cash Flow sheet.

Withheld by Purchaser (Optional)

If there is a Tax liability for a Sale line item, indicate whether it is being withheld by the Purchaser:

- **Y**: Yes, Purchaser will withhold tax component of gross sale price, and remit it to the relevant taxation authority. When this option is selected:

  o The settlement amount received by the developer from the purchaser will be reduced, and it will be reflected in the Summary and Cash Flows reports via the default calculations.

  o You must ensure that any actuals / manual overrides of the default calculations in the Cash Flow for these Sales line items accurately reflect the 'net' amount that the developer is receiving from the purchaser. Failure to do so (e.g. manually entering the gross Sales price including tax) will result in incorrect tax withholding/liability calculations.

- **N:** No, Purchaser will no withhold tax component of gross sale price. The settlement amount paid to the developer will include tax (if applicable), and it will be the developer's responsibility to remit any tax liability to the relevant taxation authority.

This is only relevant if the 'GST' Taxation Format is selected in the Preferences.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the revenue is GST/VAT inclusive and the developer or JV will pay a percentage of the revenue as a tax liability.

Land Use Code (Optional)

By detailing the land use code for a sale item, it will apply the following:

- **Escalation**, based on the rates entered for that specific land use in the Revenue Escalation table.

- **Sales Commissions**, based on the rates entered for that specific land use in the Sales Commission section.

If you neglect to enter a land use code, the sales revenue will still be calculated, however:

- It will exclude escalations and sales commissions, and

- It will be shown as 'Not Classified' on the Summary Report rather than be grouped under a specific land use type.

Revenue Collection Profile (Optional)

Enter a Profile Number defined in the Sales Revenue Collection Profile table. If this is left as Zero, then revenue is only received during the defined Settlement Start and Span dates.

This option is only available if the Sales Revenue Collection Profile feature is enabled via the Preferences

10.8.3.11 Rental Income and Capitalised Sales

Rental Income

Land Use Code (Optional)

By detailing the land use code for a tenant, it will apply the following:

- **Escalation on rental income**, up until the lease start, based on the rates entered for that specific land use in the Revenue Escalation table.

- **Sales Commissions** for capitalised sales, based on the rates entered for that specific land use in the Sales Commission section.

If you neglect to enter a land use code, the rental and capitalised sales revenue will still be calculated, however:

- It will exclude escalations and sales commissions, and

- It will be shown as 'Not Classified' on the Summary Report rather than be grouped under a specific land use type.

Units (Mandatory)

The number of tenancies for that will share the same lease structure

Total Area (Mandatory)

Enter the total size of tenancy (if multiple 'units' are entered in a line, then this is 'total' size of that quantity of tenancies) based on the unit of measurement from the list selector (purple font) such as number sqm, sqft, etc.

This information is used for further analysis on the Summary and Cash Flow (Stock Summary for Capitalised Sales).

Current Rent (Mandatory)

Enter in the current rent based on the unit of measurement selected and either as a weekly, monthly or annual rate (chosen from the list selector).

Outgoings and Vacancies
(Optional)

You may select outgoing expenses and vacancy allowances either as:

- A lump sum per week/month/annum, and/or

- Percentage of gross rent.

Outgoings and Vacancies are shown as a 'Leasing Cost' in the Summary and Cash Flow reports are paid during the nominated lease start and span.

Pre-Commitment (Optional)

You may enter a lease pre-commitment period that is before the Lease Start month. When adopting a pre-commitment:

- Escalation on rental income will be applied up until the pre-commitment period only.

- A portion of the nominated Letting Fee can be paid at that point in time.

Lease Start and **Span** (Mandatory)

To calculate a rental income stream, enter a lease start date and lease span period. If the span period is zero (0) then the program will not include the rental revenue in the cash flow.

Once the Current Rent and Lease Start is entered, the 'Escalated Rent as at the Lease Start' will be displayed. It is the Current Rent that has been escalated from the Revenue Escalation rates table. To escalate rents once the leases commence, use the Rental Review Escalation table.

Rent Reviews and Leasing Costs

Rental Review Escalation
(Optional)

For each tenant you may enter up to 10 years of rental review escalation rates. Escalation rates are applied on the anniversary month (Lease Start month) on a yearly basis (as opposed to cost escalation which is applied on each time period) and commence 1 year after Lease Start (ie the first 12 months of rent are calculated based on the rent value at the lease start date).

Rental Review Escalation is in addition to the Pre-Lease Rental Escalation that is calculated via the land use codes (ie RS1, COM, etc). It allows the user to enter in rent reviews during the lease period, whereas Pre-Lease Rental Escalation applies escalation to the current rent up until the lease start date.

Letting Fee (Optional)

You may enter a letting fee expressed as a percentage of the gross annual rent. It is default to be paid in full at the start of the lease, otherwise you may elect to enter in a percentage that is paid at Pre-Commitment.

Letting Fees are shown as a 'Leasing Cost' in the summary and cash flow reports.

Lease Incentives (Optional)

You may enter leasing incentives as:

- Rent Free Periods (calculated from the lease start date), or

- Fit-out Costs (calculated from the project start date to the start of the lease).

Lease Incentives are shown as a 'Leasing Cost' in the summary and cash flow reports.

GST/VAT on Costs and **Rents**
(Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the rents and leasing costs are GST/VAT inclusive and the developer or JV will pay/receive a percentage of the revenue/cost as a tax liability/credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the rents and/or costs entered to include tax in the cash flow and and reclaim tax credits (costs) or pay liabilities (rents).

- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits or pay liabilities based on the rent and/or cost amount entered.

Capitalised Sales

Residual Capitalisation Rate
(Optional)

Entering a capitalisation rate credits the project with a terminal or residual value (i.e. sale revenue) at the end of the rental period (lease start plus span) or at the optional Settlement date (which takes precedence over lease start + span).

The Capitalised Value is calculated by the following formula:

Capitalised Value = Net Rental Income / Residual Capitalisation Rate

Where:
Net rental Income = Gross Rental Income less GST/VAT, Outgoings and Vacancies. Letting Fees and Incentives are not capitalised and therefore do not impact then Capitalised Value.
Residual Capitalisation Rate = A capitalisation rate (also now as 'Yield') that has been adopted from comparable evidence and research.

If there no actual rental income to be received by the developer for a specific tenancy (e.g it is not leased out or is sold on completion) and you only want to indicate a capitalised sale, the lease span should be left at ZERO and the capitalised value is calculated at the lease start (unless a Settlement date later than the lease start is entered).

Pre-Sale Exchange (Optional)

You may enter a Pre-Sale Exchange date for capitalised sales. If it is adopted, you should be aware of the following:

- Any revenue escalation selected for that sale item will only apply up to the date of exchange. If no pre-sale date is entered then the escalation rates apply up to the date of settlement (lease start plus span or at the optional Settlement date, whichever is later).

- No capitalised sales revenue is actually collected by the developer until settlement. At pre-sale exchange, any deposit that is paid by the buyer is actually paid into a trust account and is not received by the developer until settlement.

- Any deposits collected and invested in the trust account can earn interest at a user-defined rate.

- The dates entered for the pre-sale exchange will impact the 'Sales Summary' on the Stock Summary report on the Cash Flow sheet.

Settlement (Optional)

This is used to nominate a settlement date (i.e. when the terminal capitalised sale value is accounted for in the cash flow). If this is left as zero, then the end of the lease start and span will be used as the settlement.

You should be aware of the following in relation to settlements:

- If the user has adopted pre-sale exchanges for a sale item and has elected to earn interest on any deposits collected at pre-sale, the interest earned will be apportioned between the developer and purchaser at time of settlement.

- The dates entered for the settlements will impact the 'Handover Summary' on the Stock Summary report on the Cash Flow sheet.

Leasing Up Period / Letting Void (Optional)

This allows the user to make an adjustment to the capitalised end sale value to take into account a known or expected vacancy period. Entering a Leasing Up Period (also known as 'Letting Void') requires two optional inputs:

- **Period Vacant:** Nominate the duration of the letting up (known/expected vacancy) period. The value of that vacancy is then determined by the following formula: Period Vacant x Forecasted Rental Income per Period

- **Discount Rate:** Given that the leasing up period may occur over more than one period, its 'present value' (as at the date of sale) can be calculated by adopting a discount rate.

The escalated end sale value will then be adjusted by the equivalent rental value (discounted by the optional discount rate).

For example: If you were to sell an office building that has a current rental of $100k per annum on a capitalised basis for say $1mil, and there is a known vacancy at the time of sale (e.g it is vacant for the next 6 months), then you can enter in '6' as the 'Months Vacant' period. The capitalised value of $1mil will actually be reduced by $50k (being 6 months rent), therefore the adjusted end sale price will be $950k. If a discount rate has been adopted (say 14%), then the present value of the $50k over 6 months will be calculated at approx $48k, therefore the adjusted capitalised value in that instance will be approx $952k.

The purchaser may request this (sort of like a 'rental guarantee') because they will argue that there is no point in them paying the full value when it will be vacant for 6 months.

Purchasers Costs (VAT mode only)

'Purchasers Costs' are calculated on the escalated gross end sale value and take into consideration items such as Stamp Duty, Legal and Agency Fees and Survey Fees. This input is mainly used in the UK property market. If it is used, Purchasers Costs should be factored into the Residual Capitalisation Rate.

% Paid by Land Owner (JV mode only)

You may elect a percentage of the costs to be paid for by the Land Owner if you are modelling a joint venture arrangement.

GST/VAT on Sale (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the revenue is GST/VAT inclusive and the developer or JV will pay a percentage of the revenue as a tax liability.

10.8.3.12 Leasing Costs

% Paid and/or Amount (Mandatory)

For other leasing costs that are not entered on the Tenants sheet, it is mandatory to input:

- A percentage of Total Gross Rents collected over the nominated lease terms for each Tenant. (i.e total gross rental income received inclusive of any GST/VAT/Sales Tax), and/or

- The number of units (e.g unit) and base rate per unit (e.g $/unit).

Escalation (Optional)

You may elect to apply escalation on any cost items.

- Enter "**E**" to escalate to start, or

- Enter "**R**" to escalate to start and continue escalation through span period, or

- Leave blank or enter "**N**" to assume the cost is fixed, hence no escalation.

Start and Span (Mandatory)

For each item's Start and Span, you have the following options:

- Enter a number to nominate the start and span manually, or

- Enter "**R**" as the start date to have the cost paid pro-rata with rental income. If "R" is chosen, the span date is ignored.

GST/VAT (Optional)

Select "Y" or "A", "B", or "C" in the GST/VAT column if the cost is GST/VAT inclusive and the developer or JV will claim a percentage of the cost as an input credit.

- If the header shows 'Add GST/VAT' the model will automatically escalate the cost entered to include tax in the cash flow and reclaim tax credits.

- If the header shows 'GST/VAT Included', then the model will only reclaim tax credits based on the cost amount entered.

10.8.3.13 Other Income

Land Use Code (Optional)

By detailing the land use code you are able to apply varying escalation rates to each revenue item. If you neglect to enter the category code (eg "RS"), escalations will not be applied. Unlike items in the 'Sales' section, the Land Use Code does not calculate commissions on items in the 'Other Income' section.

Amount and **Start** and **Span** (Mandatory)

For each revenue item it is mandatory to input:

- The number of units (e.g sqm) and base rate per unit (e.g $/sqm), and

- The start and span periods.

If any of the above are entered as zero (0), then the program will not include the revenue in the cash flow.

GST/VAT (Optional)	Select "Y" or "A", "B", or "C" in the GST/VAT column if the revenue is GST/VAT inclusive and the developer or JV will pay a percentage of the revenue as a tax liability.

10.8.3.14 Manual Cash Flow Inputs

The Cash Flow sheet gives you the opportunity to manually input amounts in a cash flow table for the following items:

- **All Project Revenues and Costs:** This is covered in more detail in the 'Updating Forecasts with Actuals' section.

- **Financing:** Such as adjustments for equity and debt drawdowns and repayments and interest rates variations for the loan facilities.

- **Discount Rate Variations**

Financing

Manual input rows are readily available in the Financing component of the Cash Flow sheet to make adjustments to the following:

- Equity injections (positive) and repayments (negative).

- Debt drawdowns (negative) and repayments (positive) for Loans 1 to 10.

- Periodic interest rate variations for Loans 1 to 10 and the Senior Loan.

Discount Rate

At the bottom of the Cash Flow sheet, there is provision to have a variable discount rate throughout the life of the cash flow.

- The discount rate that was entered in the Hurdle Rates input section is known as the **'Static Discount Rate'** and that will form the basis of all IRR and NPV calculations on other reports, such as the Summary, Sensitivity and Probability reports. In addition, it will also be used to report the following in the Cash Flow:

  o The Present Value (PV) of net cash flow for each time period.

  o The Net Present Value (NPV) of all future cash flows at each time period.

- The Static Discount Rate then forms the starting point for the **'Variable Discount Rate'** inputs, where the user can manually adjust the discount rate up or down to reflect different levels of risk

at different points in time in the project. Using the Variable Discount Rates entered by the user, a weighted average discount rate is calculated, and then it is used to calculate an NPV.

10.8.3.15 Taxes & Duties

It is recommended that the user regularly checks their relevant Statutory Revenue Office for recent changes to taxes and duties. ARGUS EstateMaster DM has inbuilt Stamp Duty and Land Tax calculators based on tables for different regions that can be easily updated by the user when required.

Please Note: The software does not automatically update these table when the rates/thresholds change - this is the responsibility of the user to manually maintain.

Updating the Stamp Duty and Land Tax Tables

1. Click on the 'Taxes & Duties' worksheet tab.

2. There will be tables for each region. Each table has the following columns:

    - **Rating Land Value Thresholds:** The upper value of the dutiable land value range.

    - **Tax Amount:** The fee that is payable in addition to the rate.

    - **Rate:** The percentage marginal rate on the dutiable value of land.

Stamp Duty Example
Say Stamp Duty is calculated as per the following rates:

- $0 - $14,000: $1.25 for every $100 or part of the dutiable value

- $14,001 - $30,000 $175 plus $1.50 for every $100 or part , by which the dutiable value exceeds $14,000

- $30,001 - $80,000 $415 plus $1.75 for every $100 or part, by which the dutiable value exceeds $30,000

- $80,001 - $300,000 $1,290 plus $3.50 for every $100 or part, by which the dutiable value exceeds $80,000

- $300,001 - $1m $8,990 plus $4.50 for every $100 or part, by which the dutiable value exceeds $300,000

- over $1m $40,490 plus $5.50 for every $100 or part, by which the dutiable value exceeds $1,000,000

Rating Land Value Thresholds			Tax Amount	Rate
0	to	14,000	0	1.25%
14,001	to	30,000	175	1.50%
30,001	to	80,000	415	1.75%
80,001	to	300,000	1,290	3.50%
300,001	to	1,000,000	8,990	4.50%
1,000,001		and above	40,490	5.50%

Land Tax Example
If there is a tax free threshold - this is indicated by entering '0"s in the first row of a land tax table.

- Example: This year a $368,000 threshold will apply to owners of liable land. The land tax rate will be $100 plus 1.6% on the combined value of all taxable land in excess of $368,000.

Rating Land Value Thresholds			Tax Amount	Rate
0	to	368,000	0	0.00%
368,001	to	2,250,000	100	1.60%
2,250,001		and above	30,212	2.00%

If there is no tax free threshold - this is usually indicated by entering only a % rate in the first row of a land tax table.

- Example: There is no threshold for land tax this year. Taxable land is assessed at the following rates:

  o Not more than $75,000: 0.6%

  o Between $75,001 and $150,000: $450 plus 0.89% on the taxable value that exceeds $75,000

  o Between $150,001 and $275,000: $1,118 plus 1.15% on the taxable value that exceeds $150,000

  o More than $275,001: $2,555 plus 1.4% on the taxable value that exceeds $275,000 Rating Land Value

Rating Land Value Thresholds			Tax Amount	Rate
0	to	75,000	0	0.60%
75,001	to	150,000	450	0.89%
150,001	to	275,000	1,118	1.15%
275,001	and above		2,555	1.40%

10.8.3.16 Profiles

The 'Profiles' tab contains the input tables for the following:

1. Cost Drawdown Profiles (S-Curves)

2. Sales Revenue Collection Profiles
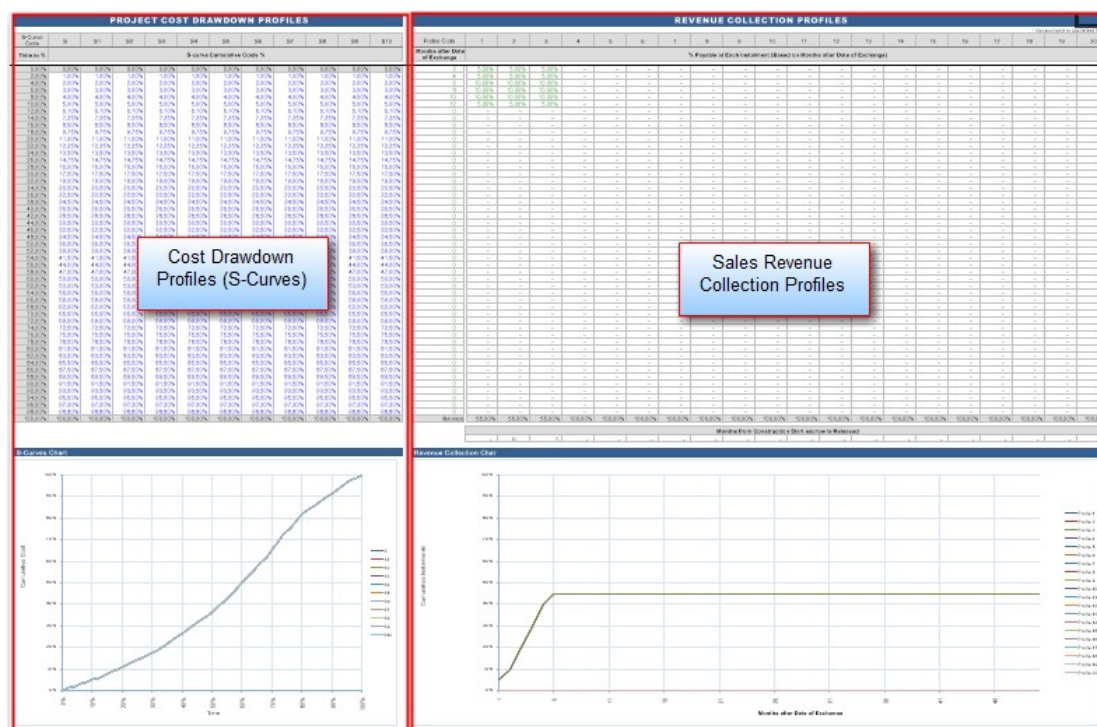
10.8.3.16.1 Cost Drawdown Profiles (S-Curves)

The S-Curve tables are based on cumulative cost and cumulative time.

For example, in using the default S-Curve in the model (see Profile 'S' below), and assuming construction occurs over 10 months, then it would assume

- After 10% of the cumulative time (or 1 month over a 10 month span), 5% of the cumulative costs should have been drawn down (paid) in the cash flow to date.

- After 20% (or 2 months over a 10 month span), 11% of the cumulative costs should have been drawn down, comprising of the 5% after one month and an additional 6%, and so on.

To show a cost drawdown that is skewed towards the earlier months of a span (more is paid earlier or quicker) ensure that the %'s increase earlier (see Profile 'S1' or 'S2' below

S-Curve Code	S	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Time in %					S-curve Cumulative Costs %						
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2.00%	1.00%	1.00%	5.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
4.00%	2.00%	3.00%	5.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
6.00%	3.00%	3.00%	5.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
8.00%	4.00%	6.00%	10.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
10.00%	5.00%	6.00%	10.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
12.00%	6.10%	9.00%	10.00%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%
14.00%	7.25%	9.00%	15.00%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%	7.25%
16.00%	8.50%	12.00%	15.00%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%
18.00%	9.75%	12.00%	15.00%	9.75%	9.75%	9.75%	9.75%	9.75%	9.75%	9.75%	9.75%
20.00%	11.00%	15.00%	20.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%
22.00%	12.25%	15.00%	20.00%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%

Profile 'S' has been left as the default, but profiles 'S1' and 'S2' have been customised to increase payment of costs earlier in the time span.

There are 11 profiles that can be customised ('S', 'S1' to 'S10') in this table and then subsequently applied to individual cost line items, using the drop-down input field.

Units	Base Rate / Units	Escalate (E,R,N)1	S-Curve
-	-	-	-
43	35,000	-	S
30	35,000	-	-
-	-	-	
-	-	-	None
14	40,000	-	E
7	40,000	-	S
13	45,000	-	S1
15	45,000	-	S2
			S3
			S4
			S5

A chart below the input table graphically displays each S-Curve Profile

S-Curves Chart
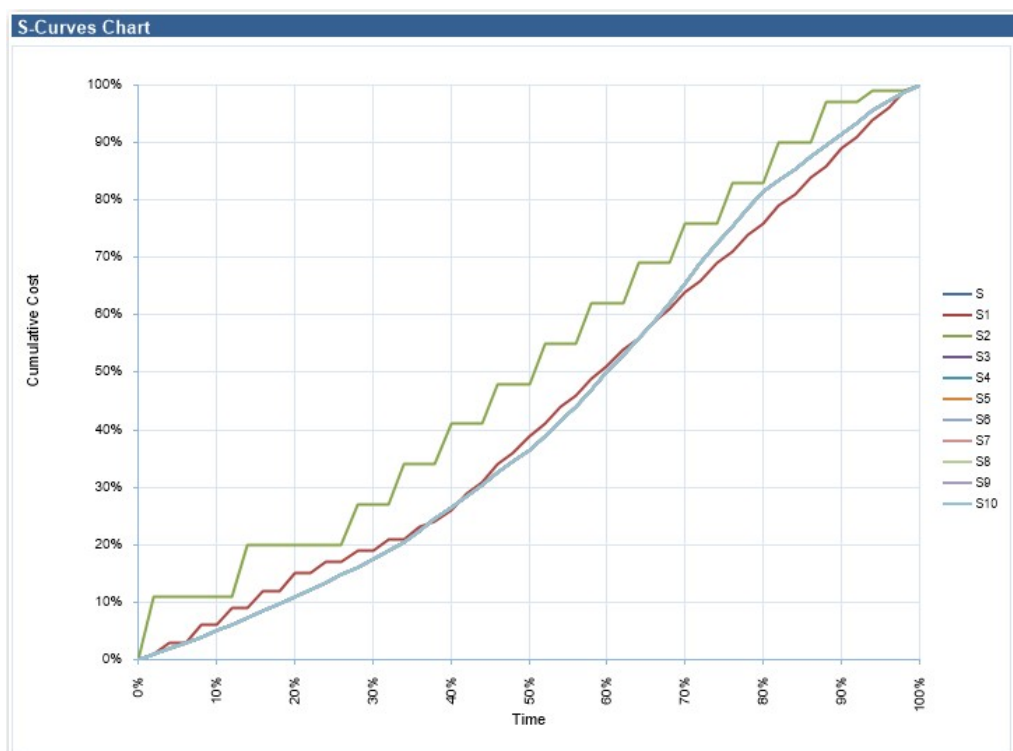
10.8.3.16.2 Sales Revenue Collection Profiles

The Sales Revenue Collection Profile feature is enabled via the Preferences. It allows you to set milestones for receiving multiple payment instalments from purchasers, either based on specific time periods in the cash flow, or on certain number of months after the Date of Exchange for each sale item. There are up to 20 different Sales Revenue Collection Profiles that can be set.

Timing of Instalment	The Preferences allows you to set whether instalments are base on:
	• Specific Time Periods in the Cash Flow, which can either be a hard-coded time period (e.g Month 6, Month, 12, etc) or a Milestone ID (e.g. M1, M2, etc).
	• A certain number of months after the Date of Exchange for each sale item.

When setting the instalment timings, each subsequent instalment must be later than the previous. There are up to 50 instalments that can be set.

Instalment %

This is the % amount of the sale value that is paid by the purchaser and collected by the developer at the nominated instalment milestone.

Balance

This shows the outstanding amount that is payable. Based on the 'Continue Collecting Post Settlement' setting in the the Preferences, it will impact the calculations differently:

- If 'Continue Collecting Post Settlement' is **disabled/unticked** (default): The 'Balance' indicates the remaining percentage that will paid to the developer on Settlement, for Sales that adopt that profile. The Settlement Dates defined in the Sales section take precedence, and any future collection profiles (instalments set to occur after a settlement date) are ignored.

- If 'Continue Collecting Post Settlement' is **enabled/ticked**: The 'Balance' indicates the remaining percentage that still needs to be accounted for in that profile. The Settlement Dates defined in the Sales section are ignored in this instance, and therefore there will be a warning if this profile has been adopted for a Sales item, and it still has a remaining balance. If this is not rectified by inputting instalment percentages that total 100%, some sales revenue may be not recorded in the project cash flow.

Periods from Construction Start Escrow is Released

These inputs are only displayed if 'Linked to Construction Start' is selected for the Release from Escrow Preferences.

For each profile you can nominate the number of time periods (e.g Months) after Construction Start that the developer can start to receive instalments that have been paid via the Revenue Collection Profile. Until that time, the instalments are just accumulated kept in escrow.

If this input is set as 'N', then the revenue is released to the developer at the same time the revenue instalments are made.

Once the profiles have been created, in the Sales input section, enter in 1 - 20 in the Revenue Collection Profile column.

Allocate Sales (which have Pre-Sale dates defined) to a specific Collection Profile

There are a few rules in relation to using this feature:

- A Sales Revenue Collection Profile can only be applied to a sale item if Pre-sale Exchanges start and span dates are set for that item.

- If a Sales Revenue Collection Profile is applied to a sale item, then any Pre-Sale Exchange Deposits and Interest on Deposits are ignored for that item.

- This functionality is not available for Capitalised Sales entered in the Tenants section.

Collection Profile Examples

- There are 3 x $1,000,000 sales occurring, using the collection profile set below.

- There is a 10% Deposit payable on exchange, and that deposit earns interest at 5%.

Months in Cash Flow	4	5	6	7	8	9	10	18
Instalment %	20%	10%	10%	5%	10%	10%	5%	10%

Scenario	Pre-Sale Exchange				Settlement		Results
	Deposit	Interest on Deposit	Start	Span	Start	Span	
Sale 1 Pre-Sale Exchange Start is before first instalment and Settlement is before last instalment.	10%	5%	2	4	14	6	• No 10% deposit is collected from purchaser at month 2 and placed in a trust account to earn interest. • The first payment to the developer is made in month 4 as per collection profiles. • Outstanding amounts are paid in full at settlement month 14 over a 6 month span, irrespective of the future collection profiles in month 18.
Sale 2 Pre-Sale Exchange Start occurs at the same time as the first instalment and Settlement Start occurs at the same time as the last instalment, but is spread over several months.	10%	5%	4	4	18	6	• No 10% deposit is collected from purchaser at month 4 and placed in a trust account to earn interest. • The first payment to the developer is made in month 4 as per collection profiles. • Final payment is collected in month 18 as per collection profile irrespective of the nominated Settlement dates.
Sale 3 Pre-Sale Exchange Start is after the first instalment and Settlement Start is after last instalment.	10%	5%	6	4	20	6	• No 10% deposit is collected from purchaser at month 6 and placed in a trust account to earn interest. • In month 6, instalments 1 (20%), 2 (10%) and 3 (10%) are collected, equating to total back-pay of 40%. • Final payment is collected in month 18 as per the collection profile irrespective of the nominated Settlements dates.

Release from Escrow Example

- A developer receives $50,000/mth in escrow from period 0 to period 12 (driven by the 'Sales Revenue Collection Profile' settings/inputs)

- Construction starts in month 5 and the developer wants to release funds from escrow 3 months after that date (limited to the cumulative Construction Costs)

- In month 8 the developer has cumulated $360,000 in Construction Costs, but has $450,000 in escrow. Therefore only a maximum of 360,000 can be released from escrow for that month.

- As soon as construction finishes in Month 10, the amount of money that can be released from escrow has been exhausted, so future revenue collection profile instalments stay in escrow until the Sales settlement date in the future, where the balance is released to the developer.

Month	0	1	2	3	4	5	6	7	8	9	10	11	12
Construction Cost	-	-	-	-	-	100,000	200,000	30,000	30,000	30,000	40,000	-	-
Cumulative						100,000	300,000	330,000	360,000	390,000	430,000	430,000	430,000
Collection Profile Instalments	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Released from Escrow	-	-	-	-	-	-	-	-	360,000	30,000	40,000	-	-
Balance left in Escrow	50,000	100,000	150,000	200,000	250,000	300,000	350,000	400,000	90,000	110,000	120,000	170,000	220,000

10.8.3.17 Set Original Budget

At the end of the manually inputting data you have the option to set the Original Budget. You may alternatively wish to conduct a review before you set the Original Budget. Once your satisfied that the input data and results are correct you can save your Original Budget by clicking on the 'Set as Original Budget' function in the 'Management Tools'.
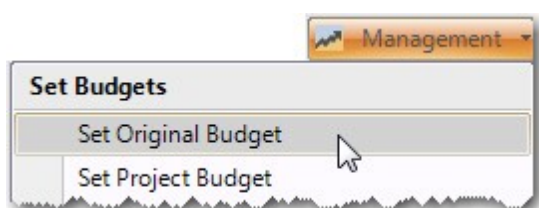
This sets the current forecast, net cash flow and the performance indicators as the Original Budget.

10.8.3.18 Project Timeline (Gantt Chart)

The Cash Flow sheet can be toggled between the dynamic Gantt chart and Inputs by clicking on the 'Show Gantt' button on the Ribbon Menu.

It provides a project timeline based on the timings in the 'Input Assumptions' and the manual inputs in the detailed cash flow. Transforming the Cash Flow into a Gantt Chart, hides all input columns, except for the period starts and spans, allowing the user to easily manipulate the timing and staging of the cash flow.
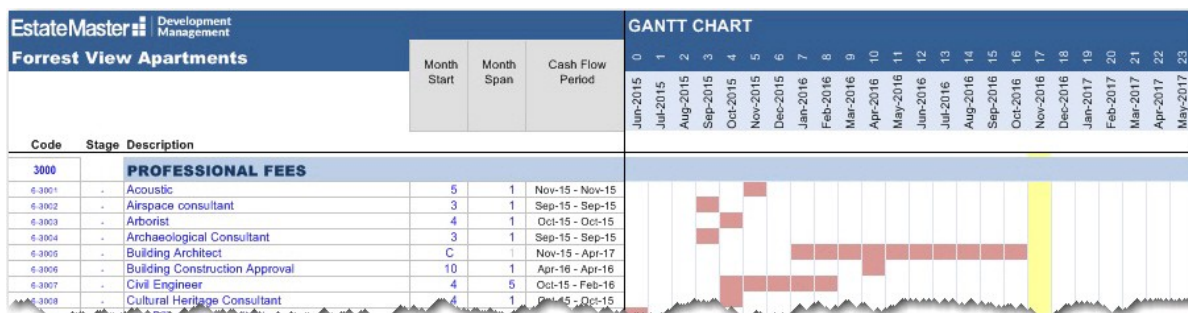
While in 'Gantt Chart' mode, the detailed cash flow section of the 'Cash Flow' sheet is locked and no manual inputs can be made other than in the period starts and spans.

Once time adjustments have been made, the user can revert back to the main Inputs by clicking on the 'Show Inputs' [icon] button on the Ribbon Menu.

10.8.4 Forecast Summary

The 'Forecast Summary' section (Purple Section) of the 'Cash Flow' sheet details:

- All the budgets/forecasts that have been stored and their relative variations, including Budget Transfers.

Original Budget Jun-2016	Budget Transfers	Project Budget Sep-2016	Previous Forecast Mar-2017	Current Forecast Apr-2017	Variation to Previous	Variation to Project	Variation to Original
909,307	-	909,307	1,258,412	1,258,412	-	349,105	349,105
46,030,476	-	46,030,476	63,849,462	63,849,462	-	17,818,986	17,818,986
17,097,034	-	17,097,034	23,558,250	23,558,250	-	6,461,216	6,461,216
51,373	-	51,373	68,803	68,803	-	17,430	17,430
15,412	-	15,412	20,641	20,641	-	5,229	5,229

- Commitments, such as Purchaser Orders Contracts and Change Orders.

	Funds Committed			
Purchase Orders	Contracts	Change Orders	Total Committed	Total Uncommitted
-	900,000	-	900,000	358,412
-	45,000,000	1,000,000	46,000,000	17,849,462
1,000,000	-	-	1,000,000	22,558,250
-	-	-	-	68,803
-	-	-	-	20,641

- The actual cost to date, accruals (optional) and what amounts are forecast to complete.

- Forecasted Holdback/Retentions currently retained to date (calculated) and what has been actually released to date (optional input).

Current Month Cost Apr-2017	Actual Cost to Date Jun-16 to Mar-17	Accruals	Total Costs to Date	Forecast to Complete Apr-17 to Feb-25	Retention/Holdback	
					Retained to Date Calculated	Released to Date Actual
-	-	750,000	750,000	508,412	-	-
-	-	195,000	195,000	63,654,462	-	-
-	-	-	-	23,558,250	-	-
-	-	-	-	68,803	-	-
-	-	-	-	20,641	-	-

Budget Transfers

This feature allows you to transfer an amount from one input section/row (by indicating a negative transfer amount) to another section/row on the 'Cash Flow' sheet (by indicating a positive transfer amount). These +/- amounts offset any variations that may deceptive.

Budget Transfer Example

Say there are two cost items that were original budgeted at $30,000, but a saving on one cost is required to be used to fund an overrun of another cost.

Both costs have been budgeted at $30,000

The budget for one cost has been reduced, but another has increased, showing a variation to the stored Budgets

To reflect a budget transfer from one cost to another, a negative amount is entered in the source row, and a positive amount in the target row. This adjusts 'variations' accordingly.

Commitments

This feature allows the user to input any costs or revenues that may not have been paid or received yet but are entirely committed to. Commitments can be split into the following 3 types:

1. **Purchase Orders**: The official confirmation of an order, sent from a purchaser to a vendor that authorises a purchase.

2. **Contracts**: A document that describes the products being sold, sets agreed prices and defines terms and conditions.

3. **Change Orders**: Work that is added to or deleted from the original scope of work of a contract. It may or may not alter the original contract amount and/or completion date.

These commitments are are summed in the 'Total Committed column, and then any remaining balance compared to the Current Forecast, are summed in the 'Total Uncommitted' column.

	Current Forecast Jun-2016	Funds Committed			Total Committed	Total Uncommitted
		Purchase Orders	Contracts	Change Orders		
CONSTRUCTION COSTS						
Car Parking	909,308	-	900,000	-	900,000	9,308
Construction	46,030,477	-	45,000,000	1,000,000	46,000,000	30,477
Mechanical & Electrical Costs	17,097,035	1,000,000	-	-	1,000,000	16,097,035
Local muncipality fees	51,374	-	-	-	-	51,374
Dewa Utilities servicing and connection fee	15,413	-	-	-	-	15,413

Warnings can be set via the Preferences to alert the user if the Total Commitments entered by the user exceed the 'Current Forecast' or 'Forecast to Complete' amounts.

Accruals

This feature allows the user to take into account accrued as well as actual expenses and revenue during the relevant accounting period. Entering an Accrual will adjust the 'Total Cost to Date' and 'Forecast to Complete' columns.

	Actual Cost to Date Jun-16 to Aug-16	Accruals	Total Costs to Date
CONSTRUCTION COSTS			
Car Parking	909,307	750,000	1,659,307
Construction	1,200,000	195,000	1,395,000
Mechanical & Electrical Costs	250,000	-	250,000
Local muncipality fees	51,373	-	51,373
Dewa Utilities servicing and connection fee	15,412	-	15,412

Retention/Holdback

For each Professional Fee and Construction Cost, a percentage of each payment being retained for the purpose of a Construction Lien (e.g. a legal claim to payment made by a contractor or supplier). These columns on the Forecast Summary provide more insight and control for this process.

- **Retained to Date (Calculated):** The portion of the total cost calculated to be retained to date.

  o These outputs based on the Retention % input for each Professional Fee and Construction Cost, multiplied by Actual Cost to Date.

  o Actual retentions can be set for each period in the Project Summary.

- **Released to Date (Actual):** The portion of the retention actually released to date, entered for each Pro Fee and Construction Cost.

  o These inputs are for references purposes only, to record what has been released for each Professional Fee and Construction Cost item.

  o Actual releases for the purpose of adjusting the cash flow can be set for each period in the Project Summary.

	Retention/Holdback	
	Retained to Date Calculated	Released to Date Actual
CONSTRUCTION COSTS		
Demolition	(496,125)	496,125
Reisdential Internal Areas	(158,445)	110,000
Balconies	(30,407)	-
Commercial	(24,487)	-
Residential lobby	(10,085)	

10.8.5 Detailed Cash Flow

The detailed 'Cash Flow' section (Light Blue/Aqua Section) is initially generated by the data entered in the 'Input Assumptions' section.

0	1	2	3	4	5	6
Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015
-	-	-	6,000	2,000	-	7,333
-	-	-	-	-	3,500	3,500
-	-	-	-	5,000	5,000	5,000
-	-	-	-	6,000	6,000	6,000
-	30,000	-	-	-	-	-
-	-	12,000	-	9,000	9,000	-

Historical Data   Current Month   Forecast Data

Yellow Column

Indicates what the **current period** is.

- The <u>current</u> period can be manually overridden with updated <u>actual</u> expenditure and revenue.

- The <u>future</u> periods can be manually overridden with updated <u>forecasted</u> expenditure and revenue.

- Anything to the left of the current period is 'historical data' and can be locked from editing by setting the 'Cash Flow History Override' option to 'Disallow' in the <u>Preferences</u>.

- As the user progresses through the project life using the <u>'Roll-Forward'</u> feature (or 'Roll Back'), the Yellow Column will adjust accordingly to reflect the new current period.

Black Font

Indicates a cash flow cell contains the default formula and is being generated by the 'Input Assumptions'.

Blue Font

Indicates a cash flow cell is in 'Manual Input Mode' or that a default formula has been overridden in the cash flow. If a default formula has been overridden, then the 'Input Assumptions' for that line item become invalid for the relative cells.

10.8.6 Stock Summary

The Stock Summary is located on the Cash Flow sheet between the Detailed Cash Flow and the Cash Flow Summary. It reports on stock that has been 'Sold' and 'Handed Over' via the revenue inputs from the Sales section and the Capitalised Sales calculated from the Rental Income section.

- Stock is **'Sold'** at the defined 'Pre-Sale Exchange' date for a sale item, or if no pre-sale is nominated, then at the defined 'Settlement' date.

- Stock is **'Handed Over'** at the defined 'Settlement' date for a sale item.

		Jan-18	Feb-18	Mar-18
Sale Summary				
Units Sold	94.00	-	3.75	3.75
Cumulative Units Sold		57.00	60.75	64.50
% Units Sold		60.6%	64.6%	68.6%
Sqm Sold	15,380.00	-	412.50	412.50
Cumulative Sqm Sold		9,630.00	10,042.50	10,455.00
% Sqm Sold		62.6%	65.3%	68.0%
AUD Sold	23,373,222	-	859,661	861,431
Cumulative AUD Sold		14,130,811	14,990,471	15,851,903
% AUD Sold		60.5%	64.1%	67.8%
Handover Summary				
Units Handed Over	94.00	-	46.75	3.75
Cumulative Units Handed Over		-	46.75	50.50
% Units Handed Over		-	49.7%	53.7%
Sqm Handed Over	15,380.00	-	5,142.50	412.50
Cumulative Sqm Handed Over		-	5,142.50	5,555.00
% Sqm Handed Over		-	33.4%	36.1%
AUD Handed Over	23,373,222	-	10,546,434	861,431
Cumulative AUD Handed Over		-	10,546,434	11,407,865
% AUD Handed Over		-	45.1%	48.8%

Sales Summary displays the stock that has been sold at pre-sale (i.e. on completion)

Handover Summary displays the stock that has settled and ownership transferred

Updating the Stock Summary with Actuals

In ARGUS EstateMaster DM, the user is able to make manual adjustments to the Units and Area Handed Over, as forecasted revenue in the Cash Flow is updated with actual revenue. In order to allow this editing, the <u>View Options</u> for this section must be set to either 'All Rows' or 'Used Rows', so that the individual Sales Revenue line items are displayed.

When the user makes a manual adjustment in either of these two sections and the default formula is overwritten, the font will turn blue, and the balance will be automatically apportioned over the remaining span.

If the Cash Flow was updated to reflect that a forecasted sale had not occurred (i.e revenue was zeroed out in that month on the Cash Flow), then the user will need to be aware that the Handover Summary will need to be manually updated to reflect nothing was handed over (i.e Quantity and Area Handed Over should be set to zero), as highlighted by the red warnings.

10.8.7 Project Cash Flow Summary

The 'Project Cash Flow Summary' section is situated at the bottom of the 'Cash Flow' and summarises the detailed project costs and revenue cash flow above (excluding interest) and provides a summary of the various forecasts stored.

Detailed Cash Flow Section

DM Case Study			0	1	2	3	4
Staged Development			Jun-2007	Jul-2007	Aug-2007	Sep-2007	Oct-2007
Code	Stage	Description					
REVENUE							
9000		Gross Sales Revenue	-	-	-	-	-
8000		Selling Costs	-	-	-	-	-
12000		Gross Rental Income	-	-	-	-	-
13000		Leasing Costs	-	-	-	-	-
9100		Other Income	-	-	-	-	-
-		Interest Received	-	-	-	-	-
-		GST Payments (Liabilities)	-	-	-	-	-
		TOTAL NET REVENUE	-	-	-	-	-
COSTS							
1000		Land and Acquisition	2,130,490	-	-	-	-
2000		Project Contingency (Reserve)	-	-	-	-	-
3000		Professional Fees	-	42,461	44,744	42,461	43,987
4000		Construction Costs (inc Contingency)	-	-	-	-	-
5000		Statutory Fees	-	-	-	-	80,000
6000		Miscellaneous Costs 1	-	-	-	-	-
6000		Miscellaneous Costs 2	-	-	-	-	-
6000		Miscellaneous Costs 3	-	-	-	-	-
7000		Land Holding Costs	-	-	119,703	-	-
10000		Financing Costs (exc Fees)	-	-	90,000	-	-
-		Pre-Sale Commissions	-	-	-	-	-
-		GST Refunds (Input Credits)	(11,818)	(3,860)	(4,068)	(3,860)	(3,999)
		TOTAL NET COSTS	2,118,672	38,601	250,379	38,601	119,988
		Holdback Retained (-ve)	-	-	-	-	-
		Holdback Released (+ve)	-	-	-	-	-
		TOTAL NET COSTS (inc Holdback)	2,118,672	38,601	250,379	38,601	119,988
Corporate Tax			-	-	-	-	-
Net Cash Flow (before Interest & after Corporate Tax)			(2,118,672)	(38,601)	(250,379)	(38,601)	(119,988)
Cumulative Cash Flow			(2,118,672)	(2,157,273)	(2,407,652)	(2,446,253)	(2,566,241)

Financing Section

Retention/Holdback Inputs

If Retention/Holdback has been entered for any Professional Fee or Construction Cost item, this is where you can control what has been actually retained and released for each cash flow period, and subsequently adjusting the Total Net Costs and Net Cash Flow Before Interest.

- **Holdback Retained**: By default, this is calculated by multiplying the Retention/Holdback % entered for a cost item, by the cost amount that appears in the cash flow for that item. The total amount that is actually retained for each cash flow period can be entered here:

  o Manual adjustments must be entered as a negative number.

  o The total amount retained must always equal the total amount released, otherwise a red warning will appear.

- **Holdback Released**: By default, this is calculated by releasing the total amount retained for each cost item, a defined number of periods after the end of that cost. The total amount that is actually released for each cash flow period can be entered here:

  o Manual adjustments must be entered as a positive number.

o The total amount released must always equal the total amount retained, otherwise a red warning will appear.

10.8.8 Financing

The 'Financing' section is located below the 'Project Summary' and is used to manage the various sources of equity and debt funding. In this section the user can:

- Manually stage equity injections.

- Make manual repayments of Loans 1 to 10.

- Vary the interest rates for Loans 1 to 10 and the Senior Loan.

- Manually enter line fees or interest earned/paid on any of the equity or debt sources.

- View the cash flows for each financier, used as the basis for calculating their IRR.

  Lender Cash Flow = Drawdowns + Interest Paid by Equity + Loan Repayments + Profit Share

- View the Interest Coverage and Debt Service Ratios.

  Interest Coverage Ratio = Total Net Revenue / (Interest Charged - Interest Paid by Equity + Application and Line Fees)

  Debt Service Ratio = Total Net Revenue / Loan Repayments

Part XI

11   Updating Forecasts with Actuals

Once the Original Budget has been set, either through importing a feasibility from an ARGUS EstateMaster DF file, manual entry or a hybrid, the project can then be tracked over time. Project tracking is entering the historical costs and revenues at the end of each time period (rest period) and re-forecasting future costs and revenues.

In order to successfully track your project, it is imperative that:

1. You are familiarised with the 'Cash Flow' sheet and its components.

Cash Flow Components:

- Cash Flow Tools

- Input Assumptions

- Forecast Summary

- Detailed Cash Flow

- Stock Summary

- Project Cash Flow Summary

- Financing

2. You understand the different methods of updating forecasts with actuals. There are three ways to enter costs and revenues to track your project in the Cash Flow sheet. A combination of methods may be used:

Updating Forecasts with Actuals:

- Method 1: Updating Input Assumptions

- Method 2: Manually override Cash Flow

- Method 3a - Import Accounts Data

- Method 3b - Import Sales Data

11.1   Method 1 - Updating Input Assumptions

This is the basic method of managing costs and revenues and it involves adjusting the 'Input Assumptions' on the 'Cash Flow' sheet.

Input Assumptions				Cash Flow Table		
				11	**12**	**13**
No. Units	Current Base Rate / Unit	Month Start	Month Span	May-2008	Jun-2008	Jul-2008
1	100,000	12	1	-	100,000	-
1	100,000	20	8	-	-	-
1	100,000	28	8	-	-	-

Simply by changing the Input Assumptions, the Cash Flow will update

This method adjusts the detailed cash flow out to the right of the assumptions, as long as both of the following conditions are met:

1. That the Current Period (yellow highlighted column in Cash Flow) has not surpassed the entire nominated duration of the line item (Start plus Span).

For example, if the Current Month is 12, and a line item has a Start of 6 and Span of 4 (starting in period 6 and ending in period 9), then adjusting the amount for that item will have no impact of the cash flow as it is deemed to be in the past. However, if the line item had a start of 10 and span of 4 (starting in period 10 and ending in period 13), then adjusting the amount will impact on the Current and future time periods that are remaining in relation to the Current Month (i.e. period 12 and 13).

2. That the cash flow period that the Input Assumptions are intending to change have not been overridden by the user.

For example, if a line item has a start of 6 and span of 4 (starting in period 6 and ending in period 9), and the user has overridden the amounts generated by the default formulae in the cash flow for period 6 and 7, then any change in the Input Assumptions will have no impact on the overridden cells.

This method can be used in conjunction with any of the following methods, for example:

- A user may be manually overriding items in the Current Period (yellow column) in the cash flow with actual costs, while utilising the 'Input Assumptions' to accurately forecast revenue in the future using $/dwelling over a desired start and span.

- A user may be manually entering sales revenue in the cash flow, however allowing the 'Setup' and 'Input Assumptions' section to calculate the sales commission and GST payable on those sales by way of default percentage inputs.

11.2   Method 2 - Manually Override Cash Flow

The detailed cash flow that is generated by the 'Input Assumptions' may be manually overridden by the user. Once a cash flow cell has been overridden, it turns from a black to blue font to differentiate it.

A Cash Flow cell's default formula overridden by the user will turn the font from black to blue

Costs and Revenues

When manually overriding Costs and Revenues in the Cash Flow, follow this process:

1. For each line item where necessary, set the 'Reforecast Mode' to the desired type:

Please Note: Enter **'M'** only if you wish to manually enter the data for an entire cost or revenue line item (thus not requiring the Input Assumptions to generate the cash flow for that item). In this instance the Input Assumptions for that cost or revenue are disabled and the cash flow for that item is reset. The cash flow for that line item is displayed in blue font, indicating that the default formulas are not being used and data must be entered directly in the cash flow by the user by way of manually overriding the cash flow cells.

2. The yellow column in the 'Cash Flow' sheet is the Current Period. Input the actual costs and revenues for the current time period in this column.

3. Check rows for a 'Cash Flow/Input Variation'. This happens where the manual overrides do not equate to the 'Input Assumptions'. You can go to the 'Input Assumptions' of the 'Cash Flow' sheet and readjust them, however it is not vital, because as you start to track a project, costs, revenues and timings are likely to change from their initial forecasts anyway.

A preference is available to highlight the cell red and warn the user if there is a variation

4. Cells that are blue font indicate that the manual override is different to what was forecasted by the 'Input Assumptions', while cells that remain with black font indicate that they are equal to the 'Input Assumptions'.

Reforecast Function
When a forecast has been overridden, other sections of the cash flow may automatically reforecast:

*Only applicable if cost/revenue is a percentage of other item, i.e. Misc Cost entered as a % of Construction.

Stock (Quantity and Area Handed Over)

When manually overriding the quantity and area of stock that is settled (handed over), follow this process:

1. Scroll down to the 'Handover Summary' section of the Stock Summary in the Cash Flow.

2. For the relevant sales items, input the actual quantity and area handed over for the current time period.

DM Case Study		20	21
Staged Development		Feb-2009	Mar-2009
Code Stage Description			
HANDOVER SUMMARY			
Units Handed Over		10.00	8.25
1	block 1 apartments	6	4.75
1	block 2 apartments	4.00	3.50
2	block 3 townhouses	-	-
2	block 4 townhouses	-	-
	Cumulative Units Handed Over	10.00	18.25
	% Units Handed Over	10.6%	19.4%
SqM Handed Over		4,562.50	4,562.50
1	block 1 apartments	2,687.50	2,687.50
1	block 2 apartments	1,875.00	1,875.00
2	block 3 townhouses	-	-
2	block 4 townhouses	-	-

3. Check for any data inconsistency errors:

   a. If the manual inputs entered do not match what has been entered in the Input Assumptions for Sales, then a warning will appear in the 'Current Forecast' column.

   b. If the manual inputs entered are occurring in a time period where there is no actual Sales revenue appearing in the Cash Flow, then the manual input will be highlighted red.

4. Cells that remain with blue font indicate that the manual override is different to what was forecasted by the 'Input Assumptions', while cells that remain with black font indicate that they are equal to the 'Input Assumptions'.

   Please Note: Reforecasting in the Handover Summary always uses the **Single Reforecasting Mode** logic, where any manual inputs will reforecast the stock summary by reapportioning the balance over the next time period only.

11.3   Method 3a - Import Accounts Data

Rather than manually typing in actual expenditure and revenue data into the Cash Flow table for each line item every month as they occur, there is the ability to automate this process by importing data from your accounts system into the cash flow table against the related cost or revenue.

Initial Mapping

To enable importing of data, a one-for-one relationship between each cash flow line item and the data from your accounting system must be initially established. This is done via two sets of codes:

1. **Project Account Code** (Intro sheet): The unique code allocated for the entire project or stage that is modeled in the cash flow.

2. **Costs Account Codes** for each individual cost and revenue line item (Cash Flow sheet). These:

   - Can be alpha-numeric.

   - Must be unique (no two cash flow lines can have the same cost code allocated to it).

   - Cannot be a formula (these input cells are formatted as 'text' to allow greater flexibility of code conventions, and therefore do not allow formulas to be entered in them).

Validation

These codes must be evident in both the accounting system and the ARGUS EstateMaster DM model. If these codes have not been set up correctly in either system, there is no way a relationship can be made and data will not be imported into the cash flow.

If the unique 'Project Account Code' or any of the 'Cost Account Codes' in the 'Cash Flow' sheet do not match your ARGUS EstateMaster DM file or there are duplicate codes in the 'Input Assumptions', then no data will be updated and a printable error report will be shown allowing the user to make corrections. There is also the option to ignore these errors and continue importing data for all the other valid cost codes.
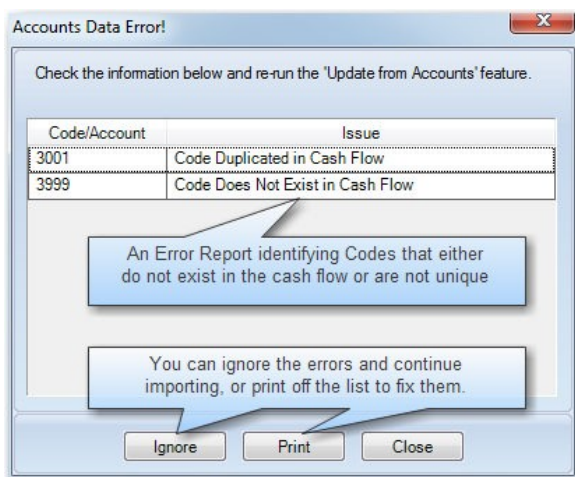
Update Process

If there are no validation issues (or the user has decided to 'ignore' them), the update process will do the following:

1. Replace all default formulas in the current time periods with the actuals derived from the accounts.

2. Reforecast any remaining balances, based on the Reforecast Mode set for the line item.

3. Allow the user to print any reports for the current period, before rolling forward to the next time period when ready.

4. If the user is updating accounts for more than one time period at any single time (more than one column of actuals) the model will sort the data to make sure it has been updated in chronological order, replace all formulas in the matching time periods and automatically roll the cash flow forward for each time period.

Before Import - Default forecast in Current Month

Code	Stage	Description	6 Dec-2016	7 Jan-2017	8 Feb-2017
3000		**PROFESSIONAL FEES**			
3001	-	Design for DA	400,000	357,963	-
3002	-	Construction safety set	-	-	-
3003	-	PM Design	10,000	15,000	-
3004	-	PM Construction	-	-	-

After Import - Current Month updated with 'actuals', with remaining balance reforecasted

Code	Stage	Description	6 Dec-2016	7 Jan-2017	8 Feb-2017
3000		**PROFESSIONAL FEES**			
3001	-	Design for DA	400,000	235,000	122,963
3002	-	Construction safety set	-	-	-
3003	-	PM Design	10,000	12,400	2,600
3004	-	PM Construction	-	-	-

Important Notes

- Only data for the 'Current Month' (as highlighted yellow in the ARGUS EstateMaster DM cash flow table) or future months in the ARGUS EstateMaster DM Cash Flow table can be updated. You can not import data for a historic month (any month before the 'Current Month') in the ARGUS EstateMaster DM Cash Flow table

- There is a maximum of 12 accounting period columns that can be imported at any one time.

- If multiple accounting periods are imported, and they are not subsequent periods (i.e an accounting period is skipped), then it is assumed that there were no cost or revenue transactions in the skipped period, and the Cash Flow table will set to zero for all line items in that period.

- If the first accounting period in the data to import is later than the 'Current Month', it is assumed that there were no cost or revenue transactions in the skipped period(s), and the Cash Flow table will set to zero for all line items in that period(s) as it rolls forward to the first accounting period.

Importing Methods

There are three methods to import accounting data in the Cash Flow table:

1. **From an external Excel or CSV file**. If the data exists on a separate Excel file (*.xls, *.xlsm or *.xlsx) or Comma-separated Value file (*.csv), the user will be prompted to browse to that file and the data will be imported.

2. **From an inserted worksheet**. If the data exists on a separate sheet in the ARGUS EstateMaster DM working file, it will update the cash flow with the highlighted data.

3. **Direct from an Accounting System:** There is an integration function to import data directly from various supported accounting systems into the ARGUS EstateMaster DM cash flow table.

Data Formats for Importing from Excel, CSV or Worksheet

If importing data using either Method 1 (From an inserted worksheet) or Method 2 (From an external Excel or CSV file), the data must be in one of the following formats.

Pivot Table Format
- This format assumes that only data for one Project is included in that table (indicated by the single Project Account Code in the top left).

- The transaction dates must also use the same rest periods and have the same Month-Year dates as the ARGUS EstateMaster DM Cash Flow table.

    For example, if the ARGUS EstateMaster DM is using 'Quarterly' rest periods and the dates on the cash flow are, 'Jan-10', 'Apr-10', 'Jul-10', etc, then the accounting data on the inserted worksheet must also be grouped in 'quarters' and have accounting periods with the same dates (i.e accounting period 'Jan-10' should contain data for Jan, Feb and Mar 2010 in the one column)

Standard Table Format

- This format is more flexible as data for multiple projects can exist in the table. The program will then automatically filter the data to only import data with the same Project Account Code as entered on the Intro sheet and will only import a maximum 12 months of data.

- The dates in this table can be formatted as either "DD/MM/YYYY" or "YYYYMM"

- The table must have the following columns in the order as displayed below.

11.3.1 From an External File

To import data from an external Excel or CSV file, it must be organised in one of the compatible data import formats, but also must follow these conditions if it is an Excel file:

1. The data must be located on the first worksheet of the Excel file starting from cell A1.

2. Only the data as per the format above must be on this worksheet – no other data can exist on this sheet, otherwise the data import will be corrupted.

To use the function:

1. Go to [Management Tools] ➔ [Import CashFlow Actuals] ➔ [From External Excel or CSV File].

2. Browse to the file that contains the accounting data.

3. Select the format that the data is in; either pivot table format or standard table format. If Standard Table format is selected, you can also indicate whether the first row of the table range you have selected are column headers (so the actual data begins in the second row) or the actual first row of data.

4. The data will be validated and then imported into the Cash Flow.

11.3.2 From a Worksheet

To import data from an inserted worksheet, it must be organised in one of the compatible data import formats.

To use the function:

1. Go to [Management Tools] ➜ [Import CashFlow Actuals] ➜ [From Inserted Worksheet].

2. A form will appear showing the currently selected range. You can select any sheet and range of cells, and it will update to show the selected range that you intend to import.

3. Go to the worksheet and highlight the cells containing the data and click [OK] on the form. Up to 12 time periods of data can be imported into the Cash Flow at a time.

A	B	C	D	E
2	PC2004	Jan-07	Feb-07	Mar-07
3	4090	94,441	79,536	78,697
4	4095	45,081	65,011	73,884
5	5010	50,541	30,704	6,225
6	5030	54,500	36,534	67,512
7	5500	6,055	27,091	87,532
8	6010	71,327	51,721	71,093
9	6020	23,439	61,513	71,148
10	8110	54,555	95,261	70,697
11	9200	19,260	32,032	45,914

Pivot Table Format: Selecting to update a single period of data

A	B	C	D	E
2	PC2004	Jan-07	Feb-07	Mar-07
3	4090	94,441	79,536	78,697
4	4095	45,081	65,011	73,884
5	5010	50,541	30,704	6,225
6	5030	54,500	36,534	67,512
7	5500	6,055	27,091	87,532
8	6010	71,327	51,721	71,093
9	6020	23,439	61,513	71,148
10	8110	54,555	95,261	70,697
11	9200	19,260	32,032	45,914

Pivot Table Format: Selecting to update multiple periods of data (max 12)

A	B	C	D	E
2	ProjectCode	CostCode	Date	Amount
3	PC2004	5010	Jan-07	60,834
4	PC2004	5010	Feb-07	51,865
5	PC2004	5010	Mar-07	67,331
6	PC2004	5030	Jan-07	48,177
7	PC2004	5030	Feb-07	31,262
8	PC2004	5030	Mar-07	20,590
9	PC2004	4090	Jan-07	11,719
10	PC2004	4090	Feb-07	13,600
11	PC2004	4090	Mar-07	13,693

Standard Table Format: Selecting to update all data in table (single or multiple periods)

4. Select the format that the data is in; either Pivot Table format or Standard Table format. If Standard Table format is selected, you can also indicate whether the first row of the table range you have selected are column headers (so the actual data begins in the second row) or the actual first row of data.

5. The data will be validated and then imported into the Cash Flow.

11.3.3 Direct from Accounting System

ARGUS EstateMaster DM is integrated with the following accounting systems to allow you to import cost and revenue transaction data directly into the cash flow table:

Intuit QucikBooks Online

Microsoft SQL Server

MYOB Exo

MYOB AccountRight Live

MYOB AccountRight Premier

MRI JobCost

Workbench

Xero

To use this feature, an Accounting System Integration Module needs to be purchased and activated for each ARGUS EstateMaster DM licence requiring the feature. For assistance, please contact our Sales Team.

Using the Integration

1. Go to [Management Tools] ➔ [Import CashFlow Actuals] ➔ [From Accounting System].

2. A form will appear, prompting you to select an 'Import Source' (i.e. one of the integrated accounting systems)
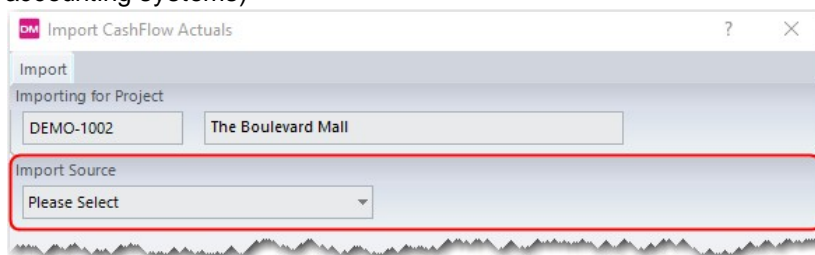
3. Once your preferred 'Import Source' has been selected:

   a. Additional date and data options appear on the 'Import' tab

   b. A 'Connection Settings', 'Cost Codes' and 'Data Viewer' tab appears.

   c. Where applicable, a 'Database Query' tab appears (only for SQL/ODBC based imports)
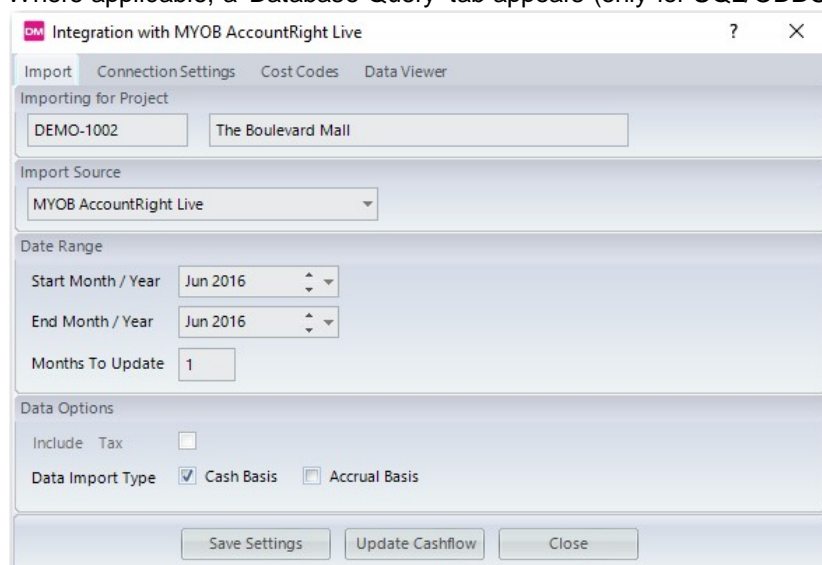
4. Once all the settings have been configured, click [Save Settings].

5. When you are ready to import the data into the Cash Flow, click on [Update Cashflow] on this form, or for quicker access in the future, click on the [Import Actuals - Accounts Data] button that is available on the 'CashFlow' sheet to run the import process using the saved settings.

Integration Settings

Import

Importing Data for	Displays the Project Account Code and Project Title (as entered on the 'Intro' sheet).
	The import function uses this data to filter out transactions for specific projects, when a single accounting system is used to manage the accounts for multiple projects.
Start Month / Year	This is the <u>start</u> of the date range that you want to import transactions for. By default, it is set and locked to the 'Current Month' on the Cash Flow sheet.
	If you wish to import actuals starting from a future date, you will need to roll the Cash Flow forward first.
End Month / Year	This is the <u>end</u> of the date range that you want to import transactions for. By default, the End Month/Year will be the same as Start Month/Year, indicating one months worth of data to update.
	The end date is always the <u>last</u> day of the month selected (i.e. if you click on the ⌄ button to select a date from the calendar popup, if you select say the 13th day of the month, that will be ignored, and the end will always be the last day of the month, e.g. 30th, 31st, etc)
	<u>Please Note:</u> The date selected for 'End Month/Year' must:
	• Be equal to or greater than the date selected for 'Start Month / Year'
	• Must be less than 12 'periods' after the date selected for "Start Month / Year", where periods are either 'months', 'quarters, 'half-years' or 'years', as defined in the Preferences for that model.
	• If the rest periods in the model are set to anything other than 'Monthly', (i.e 'Quarters', 'Half-years' or 'Years'), then the 'Month' selected for the 'End Month / Year' must correspond to last month of each rest period. For example, if your cash flow Start Date is Nov-2010 and the rest periods are 'Quarters', the periods are 'Nov-Jan', 'Feb-Apr', May-Jul' and 'Aug-Oct', therefore you can only select 'January', 'April', 'July' or 'October' for the 'End Month'.
Periods to Update	A maximum of 12 time 'periods' can be imported at any one time, where periods are either 'months', 'quarters', 'half-years' or 'years', as defined in the Preferences for that model.
Include Tax	This checkbox allows you to decide if you want to import transactions inclusive of tax (e.g. GST, VAT or Sales Tax).

If you have selected 'Nil' as either the Taxation Format or the Tax Rate Type in the Preferences, then this option is disabled and all transactions will be imported exclusive of any tax.

Please Note:

- Depending on the Accounting System used and its limitations it may have in relation to Tax data, this option may be pre-defined and disabled so the user has not option to change it.

- If you deselect this option (i.e you wish to import data excluding tax), but your Taxation Format or Tax Rate Type in Preferences are not set to 'Nil Tax', then a warning will appear for the user, as it is recommended that your model is set to 'Nil Tax' if you do not wish to import tax inclusive transactions.

- If you select this option, (i.e you wish to import data including tax), it is recommended you make sure that any tax input credit and liability payment transactions are also imported under separate account codes so that in the Cash Flow table the tax inclusive cost and revenue will be offset by a tax input credit and liability respectively.

Data Import Type

Select if you wish to import transactions on a:

- Cash basis: Transaction basis which recognises revenue/sales when the cash is received and costs/expenses when the cash is paid, or

- Accrual basis: Transaction basis which recognises revenue/sales when they are invoiced to the customer (not when the cash is received) and costs/expenses when the supplier invoices are received (not when they are paid).

Please Note:

- Depending on the Accounting System used and its limitations it may have in relation to Cash and/or Accrual data, this option may be pre-defined and disabled so the user has not option to change it.

o Where the 'Accrual basis' option is selectable, it is not actually recommended, as ARGUS EstateMaster DM is a cash flow forecasting model. To accurately calculate funding requirements, interest expense and project performance indicators such as NPV and IRR, importing data on a 'cash basis' is recommended.

Connection Settings
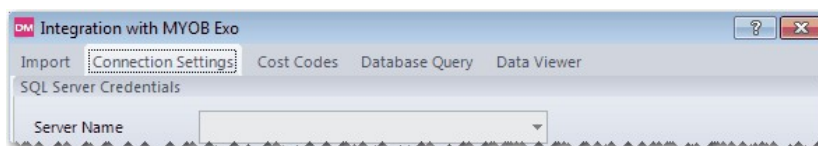
This tab will change depending on what Accounting System 'Import Source' was selected, and displays the settings that the user must define to be able to connect to the import source.

Database Query
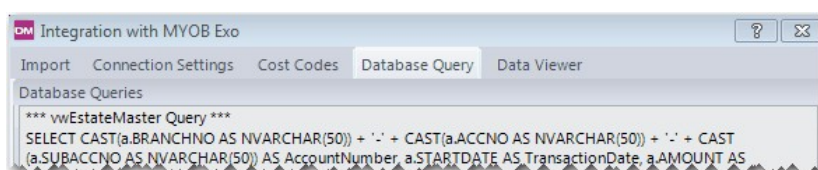
This tab will be visible depending on what Accounting System 'Import Source' was selected, and displays any SQL/ODBC data queries that are used to import data from the import source. It is read-only, and is only provided as a reference for the user to see what are the dependent tables/fields in the data source.

A [Check Syntax] button is provided to conduct a test connection to the import source and run the query to ensure all settings are correct.

Cost Codes
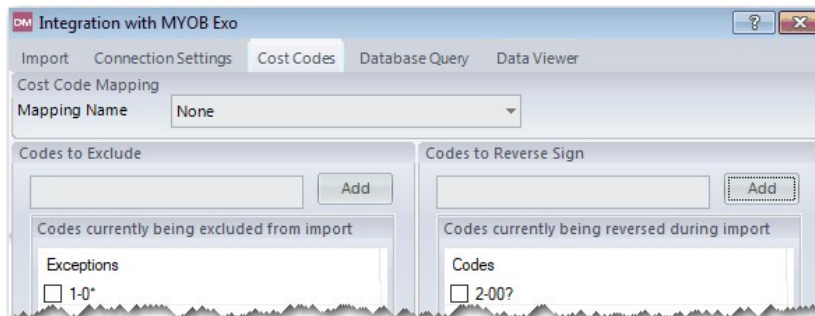
Cost Code Mapping

This is an optional setting that allows you to adopt a Cost Code Mapping that has been configured, providing flexibility and control over how actuals are imported in the CashFlow.

- If you do not want to adopt a Mapping, select 'None'. This will then assume there is an identical one-to-one relationship between the cost codes defined for each line item in the CashFlow, and the cost codes against the actuals being imported.

- If you want to adopt a Mapping, select one from the list. During the import process, the actuals being imported from the accounting systems will be reassigned to different cost codes, as per the

defined mapping.

Cost Codes to Exclude/Reverse

This allows you to define any Cost Codes that should:

- Have any of their transactions excluded from the import process. For example, their may be non-cash flow items that you want to ignore and not import, so their related Cost Code could be entered here.

- Have their transaction amounts reversed. For example, some accounting software will use minus signs or parentheses to indicate credit balances in revenue accounts. Therefore since ARGUS EstateMaster DM expects positive numbers, the transactions under the related cost codes may need the 'reversed' from a negative to a positive amount.

The following wildcard characters can be used here:

? Single character; for example 2-00? would mean "any code that starts with '2-00' and has any single character after it".

* Multiple characters; for example 1-0* would mean "any code that starts with '1-0' and has any number of characters after it".

Data Viewer

This tab allows the user to preview the data, based on the settings defined in the 'Import' tab, prior to the data being imported into the CashFlow worksheet.

Command Line Automation

ARGUS EstateMaster DM supports importing actuals from an Accounting System via the Windows command line, using the **IMPORTACTUALS** command.

The command utilises the following switches and parameters:

Switch and Parameter	Required	Description	Example

/F: *DataFile*	✔	• The path to the ARGUS EstateMaster DM data file (emdm) to import actuals into.
		• Note:
		  o The file must be saved in the same version of ARGUS EstateMaster DM that is installed on the machine running the command line action.
		  o The file must not be in use, and the the user must have read and write permissions to it.
		  o If the path contains spaces, it should be enclosed in double quotes.
			/F: "C:\MyData\SampleFile.emdf"

/P: *Password*		• The password required to open the data file (if applicable) • Note: If the password contains spaces, it should be enclosed in double quotes.	/P "password1"

/M:		• Determines whether a newer version of the Project Milestone should be retrieved from the EstateMaster Database (if it exists) when the data file is open. It is only applicable if:
		  o Project Milestones have been used in the selected data file, and
		  o ARGUS EstateMaster DM is currently connected to the Enterprise Database.
		• If this switch is not used, it will use the Project Milestone Profile that was last saved with the data file.
			/M:

/ACCOUNTS: *ImporterName*	✔	• The Accounting System to import acutals from.
		• To get a list of compatible Accounting System 'Importer Names' to be used as the parameter for this switch, run the IMPORTACTUALS command with the HELP switch.
		• Note:
		  o The ARGUS EstateMaster DM data file must be already configured to import from this source.
		  o If there are any data validation issues during the import process (i.e. Cost Codes not existing in the Cash Flow, duplicate Cost Codes, invalid Cost Code Mapping, etc), an error message will be displayed to the user and no data will import.
			/ACCOUNTS: ImportSourceXero

Switch and Parameter	Required	Description	Example
/SETBUDGET:		• Sets the Previous Forecast before importing actuals.	/SETBUDGET:
/ROLLFWD:		• Roll Forward to the next time period in the Cash Flow after importing actuals. • If this switch is not used, it will remain in the current time period.	/ROLLFWD:
/SAVEAS: *DataFile*		• Path to save the ARGUS EstateMaster DM data file, after importing actuals. • If this switch is not used, it will continue saving over the existing file. • Note: o The file must not be in use, and the the user must have write permissions to it.	/SAVEAS: "C:\MyData\SampleFile_2.emdf"

/EXPORTDB:		• Export the ARGUS EstateMaster DM data file to the database after actuals have been imported.
		• If this switch is not used, the file will continue being saved, but not exported to the database.
		• Note:
		   o The ARGUS EstateMaster DM application must have an active connection to a database, and it must be up-to-date.
		   o If the Project Number/Name allocated to the file already exists in the database, the file will be automatically appended to that existing Project in the database.
		   o If the Project Number/Name allocated to the file doesn't yet exists in the database, a new Project will be automatically created in the database, and the file will be append to it.
		   o If the Project Number allocated to the file in the database but with a different Project Name, the file will not be able to be exported.
			/EXPORTDB

Example

• Importing actuals from Xero, rolling forward, saving the file as a new file, and then exporting it to the database:

```
C:\Program Files\Estate Master\DM7\EstateMasterDM.exe
ImportActuals /F:"C:\MyData\SampleFile.emdm" /ACCOUNTS:ImportSourceXero
ROLLFWD: /SAVEAS:"C:\MyData\SampleFile_June19.emdm" /EXPORTDB:
```

11.4 Method 3b - Import Sales Data

In addition to importing accounting data into the Cash Flow table, there is an additional integration function to import anticipated and contracted settlement data into the various inputs.

This is usually used in conjunction with importing accounts data (actual costs and revenues) as the process in which it imports data and updates the CashFlow is different:

• It is only focusing on one part of the application (Sales Revenue).

- It updates not only actuals (i.e. settled/closed sales), but also forecasts (i.e. anticipated sales) as well.

- It updates not only the cash flow values, but also Input Assumptions (quantity of units/lots, area, avg sale price, settlement dates, tax) and the Stock Summary (quantity and area sold by period)

Data Requirements

To enable the importing of sales data, it is assumed that you can extract the following from your Sales CRM system:

- All stock being sold in a project (unit, dwelling, lot, etc).

- If it is a multi-stage project, the **stage** the stock is being developed and sold in.

- Its **area** (land size for lots, building area for other types).

- Its **anticipated sale price** (i.e. list price) and **forecasted settlement/sale date**.

- Its **actual sale price** (i.e contracted price) and its **closing date**.

- The **tax** component of the sale price (if it is applicable).

- The **current status** of the stock (whether it is still '**available**' for sale, or if it has been '**contracted**' to sell)

Initial Mapping

Similar to the accounting integration, there needs to be a one-for-one relationship between each sale line item to the data from your Sales CRM system via two sets of codes:

1. **Project Account Code** (Intro sheet): The unique code allocated for the entire project or stage that is modeled in the cash flow.

2. **Lot/Unit Number** or **Stage-Status** Codes (Cash Flow sheet). There are two ways you can track sales when using the Sales CRM integration, and depending on which one you select, you will have to set the Sales Revenue section in the CashFlow sheet accordingly:

   a. **Track by individual Lot/Unit**, then the unique number for each Lot/Unit is entered on a separate sales line in the 'Code' column.

   b. **Track by Stage-Status**, then the unique Stage number and the Status code ("C" for Contracted Sales or "A" for Available Sales), separated by a hyphen, is entered in the 'Stage' column.

These codes:

- Can be alpha-numeric.

- Must be unique (no two cash flow lines can have the same cost code allocated to it).

- Cannot be a formula (these input cells are formatted as 'text' to allow greater flexibility of code conventions, and therefore do not allow formulas to be entered in them).

Intro tab

CashFlow tab

Importing Options

There is currently only one method to import anticipated and contracted settlement data in the Cash Flow table:

1. **Direct from Sales CRM:** There is an integration function to import data directly from various supported Sales CRM systems into ARGUS EstateMaster DM.

11.4.1 Direct from Sales CRM System
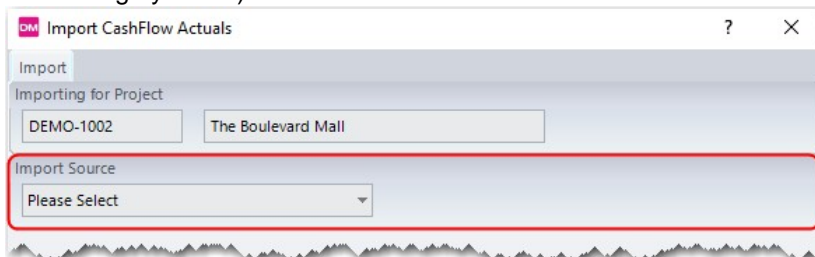
ARGUS EstateMaster DM is integrated with the following Sales CRM systems to allow you to import sales and settlement data, both actuals and forecasts, in various parts of the Cash Flow:

- Propertybase

- Salesforce

- Microsoft SQL Server

- Presence Systems Lot Manager

To use this feature, a Sales CRM Integration Module needs to be purchased and activated for each ARGUS EstateMaster DM licence requiring the feature. For assistance, please contact our Sales Team.

Using the Integration

1. Go to [Management Tools] ➔ [Import CashFlow Actuals] ➔ [From Sales CRM System].

2. A form will appear, prompting you to select an 'Import Source' (i.e. one of the integrated accounting systems)

3. Once your preferred 'Import Source' has been selected:

a. Additional date and data options appear on the 'Import' tab.

b. A 'Connection Settings' and 'Data Viewer' tab appears.

c. Where applicable, a 'Database Query' tab (for SQL based imports) and/or a 'Field Mapping' tab may appear.

4. Once all the settings have been configured, click [Save Settings].

5. When you are ready to import the data into the Cash Flow, click on [Update Cashflow] on this form, or for quicker access in the future, click on the [Import Actuals - Sales Data] button that is available on the 'CashFlow' sheet to run the import process using the saved settings.
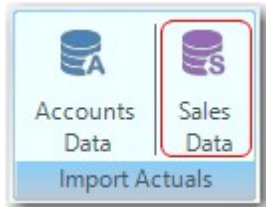
Integration Settings

Import

Importing Data for	Displays the Project Account Code and Project Title (as entered on the 'Intro' sheet).
	The import function uses this to filter data for specific projects, when a single system is used to manage the sales contracts for multiple projects.
Cash Flow Detail	This indicates how the Lots/Units have been entered in the Sales Revenue section of the CashFlow sheet.
	If 'By Lot/Unit' is selected, then the sales line items must be entered as below:

- Each Lot/Unit is entered on a separate line

- The unique Lot/Unit number is entered in the 'Code' column

- The stage that the lot belongs to (if applicable) is entered in the 'Stage' column

If 'By Stage' is selected, then the sales line items must be entered as below:

- Lots/Units are grouped in their Stage and broken up by their Status (Contracted or Available)

- The unique stage number and the status code (C or A), separated by a hyphen, is entered in the 'Stage' column.

- The 'Code' column is ignored

Available Stock Sales Rate	This is the number of Lots/Units foretasted to be sold per rest period (e.g Months) for the 'Available Stock'. Refer to the 'Update Process' to understand more about how this setting is used. Note: This is only applicable if the 'By Stage' option is selected for the 'Cash Flow Detail' preference.
Available Stock Settlement Period	This is used to the adjust the forecasted settlement dates for 'Available Stock' that have been initially set in the Sales CRM system to account for a notional settlement period. Refer to the 'Update Process' to understand more about how this setting is used. Note: This is only applicable if the 'By Stage' option is selected for the 'Cash Flow Detail' preference.

Include Tax	This checkbox allows you to decide if you want to import sales prices inclusive of tax (e.g. GST, VAT or Sales Tax).
	
	If you have selected 'Nil' as either the Taxation Format or the Tax Rate Type in the Preferences, then this option is disabled and all transactions will be imported exclusive of any tax.
	
	Please Note:
	
	- If you deselect this option (i.e you wish to import data excluding tax):
	  o If your Taxation Format or Tax Rate Type in Preferences are not set to 'Nil Tax', then a warning will appear for the user, as it is recommended that your model is set to 'Nil Tax' if you do not wish to import tax inclusive transactions.
	  o The tax exclusive sale price is determined by subtracting the tax value that is returned by the Sales CRM data.
	
	- If you select this option, (i.e you wish to import data including tax):

       ○ It assumes the Sales Prices entered in the Sales CRM database are all inclusive of tax.

       ○ If tracking 'By Stage', all units/lots in a particular Stage must have the same tax percentage rate.

Connection Settings
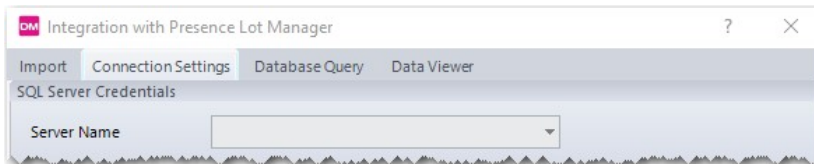
This tab will change depending on what Sales CRM System 'Import Source' was selected. It displays the settings that the user must define to be able to connect to the import source.

Database Query
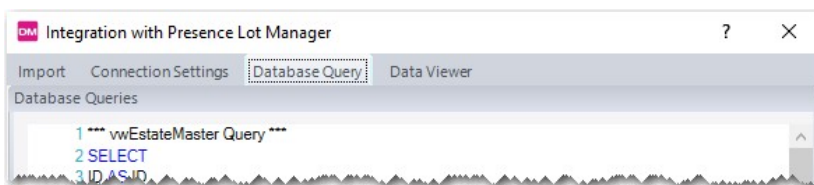
This tab will be visible depending on what Sales CRM System 'Import Source' was selected. It displays any SQL/ODBC data queries that are used to import data from the import source. It is read-only, and is only provided as a reference for the user to see what are the dependent tables/fields in the data source.

A [Check Syntax] button is provided to conduct a test connection to the import source and run the query to ensure all settings are correct.
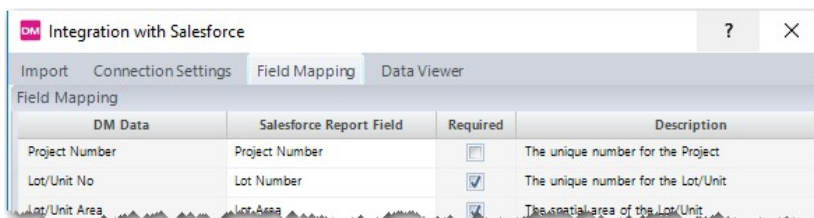
This tab will be visible depending on what Sales CRM System 'Import Source' was selected. It allows the user to map data fields between ARGUS EstateMaster DM and the selected Import Source.

A [Validate] button is provided to conduct a test for mandatory fields and correct data types (e.g a correctly formatted date where a date is expected)

Data Viewer
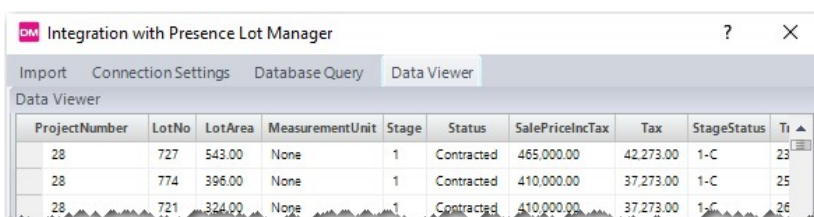
This tab allows the user to preview the data, based on the settings defined in the 'Import' tab, prior to the data being imported into the CashFlow worksheet.

Validation

These relevant codes (Lot/Unit Number or Stage-Status) must be evident in both the Sales CRM system and the ARGUS EstateMaster DM model. If these codes have not been set up correctly in either system, there is no way a relationship can be made and data will not be imported.

- **Setup Validation**

  - If the unique Lot/Unit Number or Stage-Status Codes exist in the Sales CRM system, but are missing from the ARGUS EstateMaster DM 'Cash Flow' sheet (or vice versa), no data will be updated and a printable error report will be shown allowing the user to make any corrections. There is also the option to ignore these errors and continuing on importing data for all the other existing data.

  - If there are duplicate Lot/Unit Number or Stage-Status Codes in the ARGUS EstateMaster DM 'Cash Flow' sheet, then no data will be updated and a printable error report will be shown allowing the user to make any corrections. There will be no option to ignore the error in this scenario.
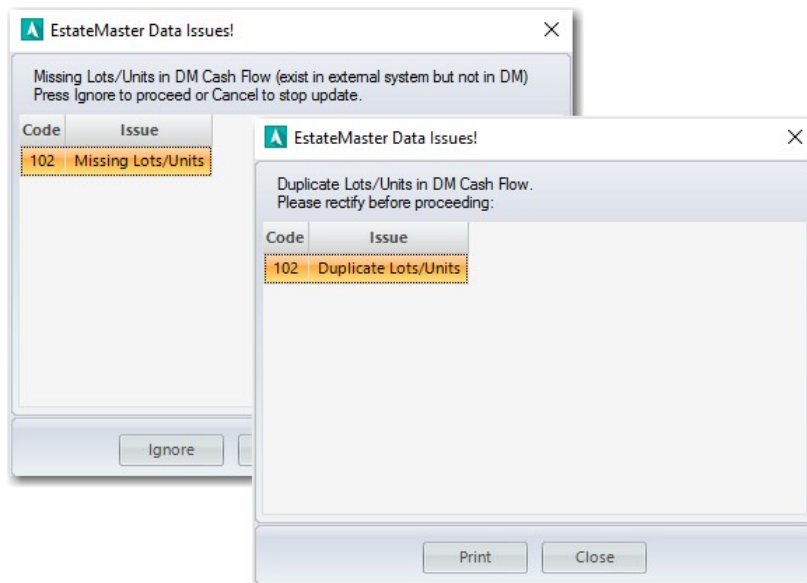
- **Data Validation**

  - If there are any issues with the data itself, such as missing mandatory data or incorrect data types, then no data will be updated and a printable error report will be shown allowing the user to make any corrections. There will be no option to ignore the error in this scenario.
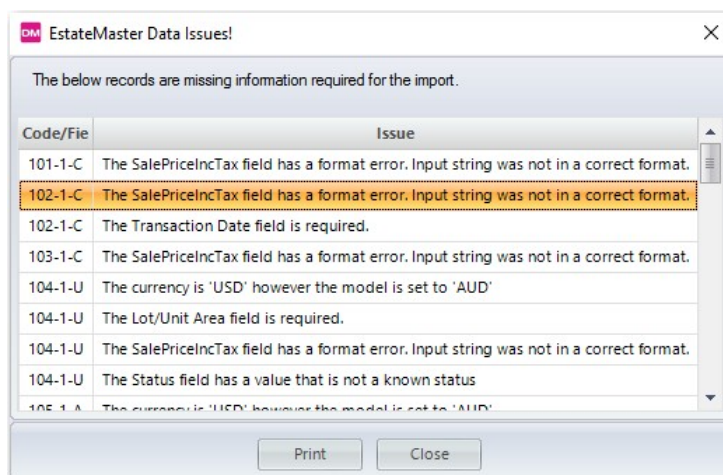
Update Process

If there are no validation issues (or the user has decided to 'ignore' them), the update process will do the following:

1. Update the Sales Revenue input assumptions, based on how the project has been set up (tracking by individual Lot/Unit or Stage-Status)

Input Field	Tracking By Lot/Unit	Tracking By Stage-Status
Area	Area for that particular Lot/Unit only	Sum of Lot/Unit Area of each Lot/Unit in that particular Stage-Status
No. Units	1	Total number of Lots/Units in that particular Stage-Status
Current Base Rate/Unit	Sale Price for that particular Lot/Unit only.	Average Sales Price for all Lots/Units in that particular Stage-Status.
	Can be inclusive or exclusive of tax, depending on your data and settings.	
Sales Calc Method	*This must be manually set as 'Per Unit' for all items*	

Settlement Start	The Period number (according to the Cash Flow table periods), that corresponds to the Settlement Date for that Lot/Unit	• For Contracted Sales: The Period number (according to the Cash Flow table periods), that corresponds to the *earliest* Settlement Date for for all Lots/Units in that particular Stage-Status
		
		• For Available Stock: The greater of:
		
		  ○ The Period number that corresponds to the *earliest* Settlement Date for for all Lots/Units in that particular Stage-Status
		
		  --or--
		
		  ○ The Current Month Period, plus the 'Available Stock Settlement Period'

Settlement Span	1	• For Contracted Sales: This is the number of periods between the first and last Settlement Date for for all Lots/Units in that particular Stage-Status. • For Available Stock: The total number of Lots/Units in that Stage-Status divided by the 'Available Stock Sales Rate' preference on the 'Import' tab of the Integration Interface.
Tax	The equivalent tax percentage applicable on the sale for that particular Lot/Unit only.	The equivalent tax percentage applicable for all Lots/Units in that particular Stage-Status.

Greenhills Estate Project Budget 2017					Current Base Rate / Unit	Month Start	Month Span	Cash Flow Period	GST Tax on on Sales
Code	Stage	Description							
11000		**SALES REVENUE**	Area (SqM)	No. Units					
	1-A	Stage 1 - Available	130	1	150,000	25	1	Feb-17 - Feb-17	10.0%
	1-C	Stage 1 - Contracted	490	4	120,000	24	2	Jan-17 - Feb-17	10.0%
	2-A	Stage 2 - Available	567	3	193,333	26	3	Mar-17 - May-17	10.0%
	2-C	Stage 2 - Contracted	294	2	185,000	26	3	Mar-17 - May-17	10.0%
	3-A	Stage 3 - Available	807	5	162,198	31	5	Aug-17 - Dec-17	N

2. Update the Sales Revenue Cash Flow values

Greenhills Estate Project Budget 2017			24 Jan-2017	25 Feb-2017	26 Mar-2017	27 Apr-2017	28 May-2017
Code	Stage	Description					
11000		SALES REVENUE					
	1-A	Stage 1 - Available	-	150,000	-	-	-
	1-C	Stage 1 - Contracted	330,000	150,000	-	-	-
	2-A	Stage 2 - Available	-	-	193,333	193,333	193,333
	2-C	Stage 2 - Contracted	-	-	185,000	-	185,000
	3-A	Stage 3 - Available	-	-	-	-	-

3. Update the Stock Summary Quantity and Area 'Handed Over' values

HANDOVER SUMMARY							
Units Handed Over			3.00	2.00	2.00	1.00	2.00
	1-A	Stage 1 - Available	-	1.00	-	-	-
	1-C	Stage 1 - Contracted	3.00	1.00	-	-	-
	2-A	Stage 2 - Available	-	-	1.00	1.00	1.00
	2-C	Stage 2 - Contracted	-	-	1.00	-	1.00
	3-A	Stage 3 - Available	-	-	-	-	-
	3-C	Stage 3 - Contracted	-	-	-	-	-
SqM Handed Over			360.00	260.00	336.00	189.00	336.00
	1-A	Stage 1 - Available	-	130.00	-	-	-
	1-C	Stage 1 - Contracted	360.00	130.00	-	-	-
	2-A	Stage 2 - Available	-	-	189.00	189.00	189.00
	2-C	Stage 2 - Contracted	-	-	147.00	-	147.00
	3-A	Stage 3 - Available	-	-	-	-	-
	3-C	Stage 3 - Contracted	-	-	-	-	-

Important Notes

- Only data for the 'Current Month' (as highlighted yellow in the ARGUS EstateMaster DM cash flow table) or future months in the ARGUS EstateMaster DM Cash Flow table can be updated. You can not import data for a historic month (any month before the 'Current Month') in the ARGUS EstateMaster DM Cash Flow table

- When tracking 'By Stage', in order to forecast more accurately, whole numbers are calculated for the quantity of 'Available' sales for each cash flow period, affecting cash flow price values and the Stock Summary Units and Area 'Handed Over'. Therefore, if the total number of units/lots is not divisible by 'Available Stock Sales Rate', then the number of units/lots forecasted to be sold in the final period, is based on the calculated remainder.

  o For example, if there are 10 'available' lots in a Stage, and the 'Available Stock Sales Rate' is 3 lots/month, then the calculated span would be 4 months, with the first 3 months selling 3 lots, and the final 4th month selling only 1 lot.

- Importing data from a Sales CRM system should be run <u>after</u> any actuals have been imported from an accounting system. This will override any sales revenue actuals that have been imported from the accounting system with data from the Sales CRM system instead.

Command Line Automation

ARGUS EstateMaster DM supports importing actuals from an Sales CRM System via the Windows command line, using the **IMPORTACTUALS** command.

The command utilises the following switches and parameters:

Switch and Parameter	Required	Description	Example
/F: *DataFile*	✔	• The path to the ARGUS EstateMaster DM data file (emdm) to import actuals into. • <u>Note</u>:	/F: "C:\MyData\SampleFile.emdf"

Switch and Parameter	Required	Description	Example
		o The file must be saved in the same version of ARGUS EstateMaster DM that is installed on the machine running the command line action. o The file must not be in use, and the the user must have read and write permissions to it. o If the path contains spaces, it should be enclosed in double quotes.	
/P: *Password*		• The password required to open the data file (if applicable) • <u>Note</u>: If the password contains spaces, it should be enclosed in double quotes.	/P "password1"
/M:		• Determines whether a newer version of the Project Milestone should be retrieved from the EstateMaster Database (if it exists) when the data file is open. It is only applicable if: o [Project Milestones](#) have been used in the selected data file, and o ARGUS EstateMaster DM is currently connected to the Enterprise Database. • If this switch is not used, it will use the Project Milestone Profile that was last saved with the data file.	/M:
/SALES: *ImporterName*	✓	• The Sales CRM to import acutals from. • To get a list of compatible Sales CRM System 'Importer Names' to be used as the parameter for this switch, run the IMPORTACTUALS command with the HELP switch. • <u>Note</u>: o The ARGUS EstateMaster DM data file must be already configured to import from this source. o If there are any data validation issues during the import process, an error message will be displayed to the user and no data will import.	/SALES: ImportSourceSalesforce
/SETBUDGET:		• Sets the Previous Forecast before importing actuals.	/SETBUDGET:
/ROLLFWD:		• Roll Forward to the next time period in the Cash Flow after importing actuals. • If this switch is not used, it will remain in the current time period.	/ROLLFWD:
/SAVEAS: *DataFile*		• Path to save the ARGUS EstateMaster DM data file, after importing actuals. • If this switch is not used, it will continue saving over the existing file. • <u>Note</u>: o The file must not be in use, and the the user must have write permissions to it.	/SAVEAS: "C:\MyData\SampleFile_2.emdf"
/EXPORTDB:		• Export the ARGUS EstateMaster DM data file to the database after actuals have	/EXPORTDB

Switch and Parameter	Required	Description	Example
		been imported.	
		• If this switch is not used, the file will continue being saved, but not exported to the database.	
		• Note:	
		o The ARGUS EstateMaster DM application must have an active connection to a database, and it must be up-to-date.	
		o If the Project Number/Name allocated to the file already exists in the database, the file will be automatically appended to that existing Project in the database.	
		o If the Project Number/Name allocated to the file doesn't yet exists in the database, a new Project will be automatically created in the database, and the file will be append to it.	
		o If the Project Number allocated to the file in the database but with a different Project Name, the file will not be able to be exported.	

<u>Example</u>

- Importing actuals from Salesforce, rolling forward, saving the file as a new file, and then exporting it to the database:

- C:\Program Files\Estate Master\DM7\EstateMasterDM.exe ImportActuals **/F:"C:\MyData\SampleFile.emdm"** **/SALES:**ImportSourceSalesforce **ROLLFWD:** **/SAVEAS:"**C:\MyData\SampleFile_June19.emdm**"** **/EXPORTDB:**

11.5 Managing Budget Transfers, Commitments and Accruals

Budget Transfers

This feature allows you to transfer an amount from one input section/row (by indicating a negative transfer amount) to another section/row on the 'Cash Flow' sheet (by indicating a positive transfer amount). These +/- amounts offset any variations.

Budget Transfer Example

Say there are two cost items that were original budgeted at $30,000, but a saving on one cost is required to be used to fund an overrun of another cost.

Commitments

This feature allows the user to input any costs or revenues that may not have been paid or received yet but are entirely committed to. Commitments can be split into the following 3 types:

1. **Purchase Orders**: The official confirmation of an order, sent from a purchaser to a vendor that authorises a purchase.

2. **Contracts**: A document that describes the products being sold, sets agreed prices and defines terms and conditions.

3. **Change Orders**: Work that is added to or deleted from the original scope of work of a contract. It may or may not alter the original contract amount and/or completion date.

These commitments are are summed in the 'Total Committed column, and then any remaining balance compared to the Current Forecast, are summed in the 'Total Uncommitted' column.

	Current Forecast Jun-2016	Funds Committed				
		Purchase Orders	Contracts	Change Orders	Total Committed	Total Uncommitted
CONSTRUCTION COSTS						
Car Parking	909,308	-	900,000	-	900,000	9,308
Construction	46,030,477	-	45,000,000	1,000,000	46,000,000	30,477
Mechanical & Electrical Costs	17,097,035	1,000,000	-	-	1,000,000	16,097,035
Local muncipality fees	51,374	-	-	-	-	51,374
Dewa Utilities servicing and connection fee	15,413	-	-	-	-	15,413

Warnings can be set via the Preferences to alert the user if the Total Commitments entered by the user exceed the 'Current Forecast' or 'Forecast to Complete' amounts.

Accruals

This feature allows the user to take into account accrued as well as actual expenses and revenue during the relevant accounting period. Entering an Accrual will adjust the 'Total Cost to Date' and 'Forecast to Complete' columns.

	Actual Cost to Date Jun-16 to Aug-16	Accruals	Total Costs to Date
CONSTRUCTION COSTS			
Car Parking	909,307	750,000	1,659,307
Construction	1,200,000	195,000	1,395,000
Mechanical & Electrical Costs	250,000	-	250,000
Local muncipality fees	51,373	-	51,373
Dewa Utilities servicing and connection fee	15,412	-	15,412

Part XII

12   Setting Forecasts and Progressing in Time

Once one of the above methods is used to update the forecast and/or actuals in the project cash flow, the user has several options in proceeding to the next time period using the 'Management Tools'

- **Setting Budgets:** The user can set the Current Forecast as either the Original, Project or Previous forecast at any time while tracking the project

- **Rolling Forward:** This is used once a user has completely entered in the actuals and updated any forecasts for the current time period and they wish to move to the next time period.

- **Rolling Back:** If an error is made when updating the cash flow with actuals and the time period in question is now historical data, then the user will have to use the 'Roll Back' feature to go back top that time period and update the data.

For more information in relation to these features, refer to the following Management Tools section.

12.1   Management Tools

The Management Tools are accessed via the Ribbon Menu. They include the following:

Set Budgets
Set Original Budget
Set Project Budget
Set Previous Forecast

Roll CashFlow Forward and Back
❯ Roll Forward (Once)
❯❯ Roll Forward (Multiple)
❮ Roll Back (Once)
❮❮ Roll Back (Multiple)

Import CashFlow Actuals
From External Excel or CSV File
From Inserted Worksheet
From Accounting System
From Sales CRM System
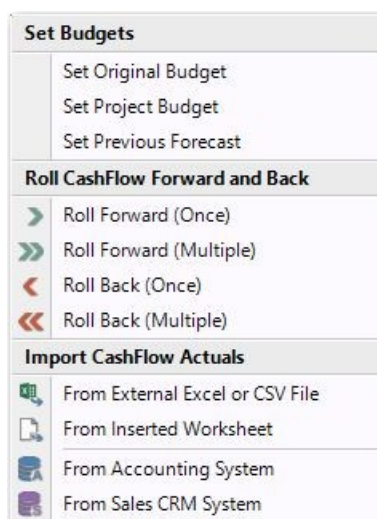
Original Budget

The Original Budget is the budget that is set at the beginning of the project to reflect the feasibility/forecast that was approved to commence the project.

- **Set as Original Budget:** Store the Current Forecast as the Original Budget (eg. feasibility) on the Cash Flow, Summary and Chart reports for comparison purposes.

Project Budget

A Project Budget is a secondary budget that can be used for any purpose by the user and can be hidden if not required using the Cash Flow 'View Options'.

- **Set as Project Budget:** Store the Current Forecast as the Project Budget on the Cash Flow, Summary and Chart reports for comparison purposes.

Disabling the ability to Set or Clear Budgets
In the Preferences, there are options to prevent the user from overriding the Original and Project Budgets.   If these have been set to 'Allow' then the user will be allowed to Set or Clear a budget.   Original Budget Override   ☑ Allow user to set Original Budget   Project Budget Override   ☑ Allow user to set Project Budget
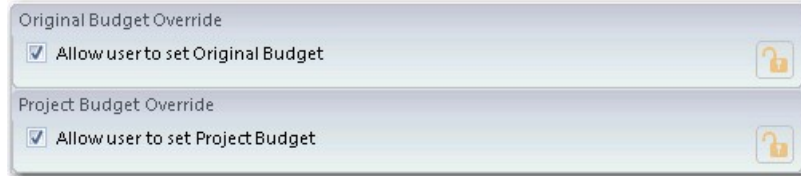
Previous Forecast

This can be set either manually in the same way as the Original Budget, or it can be set to rollover automatically via the Preferences. The user selects the frequency of the rollover (i.e. Monthly, Quarterly, Yearly) and the time period in which it is to start. When the cash flow is then roll forward, these settings are checked to see if the storing of the Previous Forecast is triggered.

- **Set as Previous Forecast:** If 'Manual Rollover' is selected in the Preferences, then this function allows the user to store the Current Forecast as the Previous Forecast on the Cash Flow, Summary and Chart reports for comparison purposes. If 'Manual Rollover' is not preferred, there is also an automatic feature for this tool, where the Previous Forecast is stored during the 'Roll Forward' process on a predefined basis (i.e every month, quarter, etc).

Clearing Budgets
Once a Budget has been set, it can be cleared via the Edit - Reset Inputs function in the Ribbon Menu   Reset ▾   All Inputs and Preferences   Original Budget   Project Budget   Previous Budget   Cash Flow Manual Budget   Summary Report Manual Budget
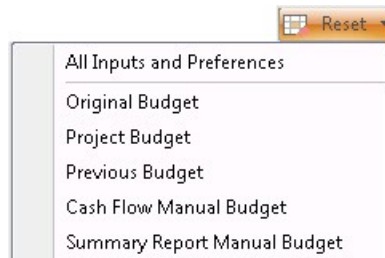
Roll Forward

The 'Roll Forward' feature is used once a user has completely entered in the actuals and updated any forecasts for the current time period and they wish to move to the next period.

Roll Forward options in the menu include:

- **Once**: Move one time period forward.

- **Multiple:** Move multiple time periods forward.

The 'Roll Forward' procedure includes the following tasks:

- Completes a full calculation update of the model.

- Checks to see if the Previous Forecast is in 'Auto' mode and stores the Current as Previous if necessary.

- Locks the yellow column (current time period) in the detailed cash flow (if Cash Flow History Override is locked via the Preferences).

- Moves the yellow column forward (right) one time period in the cash flow.

- Updates the 'Projected Profit' chart
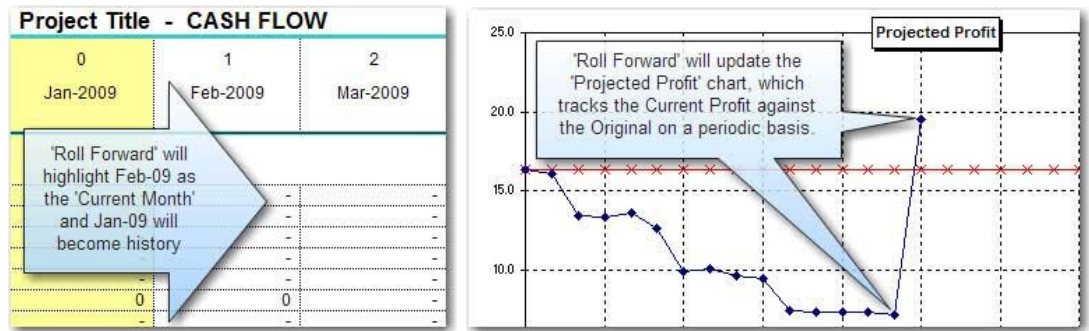
Roll Back

If an error is made when updating the cash flow with actuals and the time period in question is now historical data (left of the yellow column on the detailed cash flow), then the user will have to use the 'Roll Back' feature to go back to that time period and update the data.

The 'Roll Back' funciton is basically an 'Undo' procedure for the roll forward, moving the yellow column on the cash flow one time period to the left, and also restoring any reports (such as Charts, Previous Forecast, etc) that were changed from the last Roll Forward. Roll Back is only available if Cash Flow History Override in the Preferences is allowed.

Roll Back options in the menu include:

- **Once**: Move one time period forward.

- **Multiple:** Move multiple time periods forward.

The 'Roll Back' procedure includes the following tasks:

- Check to see if the last time period it is rolling back to has a Previous Forecast stored, and if so, reverses the procedure and rolls back to the preceding Previous Forecast.

- Prompts the user if the formulas are to be replaced in the current time period. If so, any input line that is in 'A', 'S' or 'N' 'Reforecast Mode' will have the default cash flow formula replaced in the relevant cell, while any input line that is in 'M' 'Reforecast Mode' will be left as is.

- Rolls back one time period and unlocks the previously locked cells.

- Prompts the user if the formulas are to be replaced in the new current time period.

Using the Roll Back Procedure
Please note that the 'Roll Back' feature only replaces formulas in the current and previous time period that the user is rolling back to. It does not undo any input updates or manual cash flow overrides that affected future time periods while the user was rolling forward. These stay static and the user can 'undo' them manually if they need to roll back to a time period with the cash flow exactly the way it was.

Update Cashflow with Accounts Data

This tool is used to import data into the cash flow from outputs generated by external accounting systems (see Method 3 - Import Accounts Data)

Part XIII

13   Reviewing a Project

13.1   Tracking Performance

Tracking project performance refers to comparing the Current Forecast with Previous and Original cases. This can be achieved in various parts of the program.

13.1.1   Development Finanacial Summary

The 'Summary' sheet shows a summary of costs, revenues and performance indicators.

Performance Indicators

Gross Development Profit Total Project Revenue less Total Project Costs (after GST/VAT/Sales Tax paid and reclaimed, but before any profit share/split has been made to either the land owner or lender at the completion of the project).

Net Development Profit Gross Development Profit less any profit share/split to either the land owner or lenders.

Development Margin (profit/risk margin) The ratio of Development Profit to:

- Development Costs (inc Selling and Leasing Costs), or

- Development Costs (inc Selling Costs), or

- Development Costs (net of Selling and Leasing Costs), or

- Total Revenue net of GST/VAT/Sales Tax, or

- Total Sales Proceeds (net of Selling Costs and GST/VAT/Sales Tax).

These options can be chosen on the 'Hurdle Rates' tab of the Preferences.

Net Present Value The project cash flow (excluding equity) discounted to present value at the nominated discount rate (Target IRR).

NPV of Future Cash Flows The Net Present Value of all future cash flows from the current period (or the month the forecast was set). It excludes all historical cash flow items.

Benefit Cost Ratio The ratio of discounted revenue to discounted costs.

Internal Rate of Return The return on the development or the discount rate at which the NPV equals zero.

Equity IRR The return on the developer's equity investment into the project. It is calculated from the 'Equity Cash Flow' line on the Cash Flow sheet.

It is calculated from the 'Equity Cash Flow' line on the Cash Flow sheet.

Equity Contribution The sum of all developer equity contributions (injections) into the project.

Peak Debt Exposure The maximum cash flow exposure after equity and including capitalised interest.

Equity to Debt Ratio The ratio of equity funding to debt funding in the project.

Weighted Average Cost of Capital (WACC) The rate that a company is expected to pay to finance its assets. It is based on the following formula:

$$\textbf{WACC} = \frac{D}{(D+E)} * R_D + \frac{E}{(D+E)} * R_E$$

Where:
D = Total Debt
E = Total Equity
R_D = Cost of Debt (risk free rate of return plus debt premium based on the credit rating of the company); and

R_E = Cost of Equity (required return on equity)

T_R = Corporate Tax Rate

Breakeven Date for Cumulative Cash Flow	The date the cumulative cash flow first turns positive.
Yield on Cost	Current Net Annual Rent divided by Total Costs (before GST reclaimed), including all Selling Costs.
Rent Cover	The total Net Development Profit divided by the Current Net Annual Rental expressed as a a number of years/months. It is only applicable for developments with rental income.
Profit Erosion	The period of time post practical completion that it can remain unsold (but leased out) until finance and land holding costs erodes the profit for the development to zero. It is only applicable for developments with rental income.

Return on Funds Invested

Funds Invested	The total amount of equity/debt funding injected into the project.
Peak Exposure	The maximum cash flow exposure of the equity/debt loan balance (including capitalised interest).
Weighted Average Interest Rate	The weighted average interest rate of the equity/debt facilities, weighted by the size of their loan balances.
Interest and Fees Charged	The total interest, application and line fees that have been charged by the financier to the project.
Profit Share Received	Profit share entitlements to any of the debt financiers for Loans 1 to 10.
Total Profit to Funders	The total repayments less funds invested, including profit share paid or received.
Margin on Funds Invested	Margin is Total Profit to Funder divided by Funds Invested (Cash Outlay).
Payback Date	The last date when total equity/debt is repaid.
IRR on Funds Invested	The IRR of the financier's cash flow.
	Refer to the Cash Flow sheet to view the cash flow data for each financier that is used to calculate their IRR.
Equity to Debt Ratio	The ratio of equity funding to debt funding in the project.
Loan to Value Ratio	Loan to Value ratio is the Peak Equity/Debt Exposure divided by Total Sales Revenue.
Loan Ratio	Loan Ratio is the total funds invested (cash outlay) divided by the nominated ratio calculation method.
	Use the Finance Preferences to determine if 'funds invested' includes or excludes capitalised interest for the purposes of this calculation.

Important Notes about the calculation of IRR and NPV's

To help understand how the NPV's and IRR's are calculated, please be aware of the following:

- The 'Project' IRR is based on the project's cash flow, including inflows (revenues) and outflows (costs).

- You can choose whether financing costs, interest expenses and corporate tax are included in the project cash flow to calculate the 'Project' NPV and IRR, using the settings on the 'Hurdle Rates' tab of the Preferences.

- It is based on the data in the 'Project IRR & NPV' section of the Cash Flow table, which summarises the cash flow lines that are included in the cash flow to calculate the Project NPV and IRR

PROJECT IRR & NPV				
Cash Flow that includes financing costs but excludes interest and corp tax.	(1,005,000)	(188,012)	(12,893)	(833)

- The 'Equity' IRR is different to the 'Project' IRR, as it looks at the return on <u>equity contributor's</u> cash inflows (injections) and outflows (repayments). It is based on the 'Equity Cash Flow' line in the Financing section in the Cash Flow table.

Equity Balance	(18,614,755)	(10,000,000)	(10,300,234)	(16,614,755)	(17,614,755)
Equity Cash Flow	(18,614,755)	(10,000,000)	(300,234)	(6,314,521)	(1,000,000)

- The 'Lenders' IRR is different to the 'Project' and 'Equity' IRR, as it looks at the return on <u>lenders</u> cash inflows (principal and interest repayments) and outflows (drawdowns). It is based on the 'Loan x Cash Flow' line for each lender in the Financing section in the Cash Flow table.

Loan Balance	-	-	-	(7,637,835)	(8,078,131)	(8,627,104)	(12,949,192)
% of Land Purchase Price.				47.7%	50.0%	52.9%	79.4%
Profit Share	-	-	-	-	-	-	-
Loan 1 Cash Flow	8,735,158	-	-	(7,637,835)	(363,917)	(468,192)	(4,235,818)

- All these indicators use the standard 'NPV' and 'IRR' functions (not XNPV or XIRR).

- When calculating the NPV, it assumes time period zero is not discounted .

- You can choose whether all NPV's and IRR's noted above are calculated on an Effective or Nominal basis, using the settings on the 'Hurdle Rates' tab of the Preferences.

'Current' or 'Variation' View

You can change the way the Summary Report is displayed by toggling the 'Show Current/Variation' buttons:

Show Current
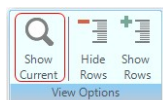
Shows the summary and performance indicators of the Current Forecast only, including the following columns:

- The 'Current Forecast'

- The 'Total Cost to Date' and 'Forecast to Complete'

- Additional Revenue Metrics by Use (Qty, Area, etc)

- Additional Cost and Revenue Metrics, configurable via the 3 drop-down options ($/Lot, $/Site Area, $/Total Revenue or Cost)

Additional Revenue Metrics by Use (Qty, Area, etc) — Current Forecast — Additional Cost and Revenue Metrics ($/Lot, $/Site Area, etc) — Total Cost to Date and Forecast to Complete

Show Variation

Shows the summary and performance indicators of the Current, Previous, Project and Original cases and their variances, including the following columns:

- The 'Current Forecast'

- The stored Budgets (Original Budget, Project Budget and Previous Forecast), and their variations to the Current Forecast, displayed as a % and/or absolute variation (configurable via the Reporting Preferences)

- The 'Manual Budget' and its variation to the Current Forecast. These columns are configurable via the Updating Budgets Preferences.

- Comments, which can be entered by the user to explain any of the variations.

Manual Budget — Stored Budgets (Original, Project and Previous) — Current Forecast — Variations to the Stored Budgets (% or Amount) — Variations to the Manual Budget — Comments

Manual Budget

The 'Manual Budget' is a customisable budget where the user can set their own name and date for the budget and enter in their own cost, revenues and performance indicators. Once a Manual Budget has been set, the 'Variance to Manual Budget' will then track the variances between the Current Forecast and this new budget.

The user can enter their own budget in this column

In the Preferences, the user can hide the Manual Budget from the Summary report, and also prevent users from editing it.

Other Functions

 You can customise the rows that are displayed in the Summary Report:

- **Hide Rows:** This will hide the rows that have been set to 'Hide' using the dropdown lists on the left of the report.

- **Show Rows:** This will unhide all rows on the report. Any rows that were hidden will have their dropdown set back to 'Show'.

13.1.2 Cash Flow Table

The 'Forecast Summary' section of the 'Cash Flow' sheet shows the Original, Previous, Project and Current Forecasts and their respective variations for each cost and revenue item. This section also indicates the actual costs to date and forecast amounts to complete.

Forecast Summary

This is a summary of all budgets stored in the model, and their variances to the Current Forecast. Using the 'Cash Flow Tools', you can hide the Budget Transfers and Project Budget columns if not used.

FORECAST SUMMARY

Original Budget Jun-2016	Budget Transfers	Project Budget Sep-2016	Previous Forecast Mar-2017	Current Forecast Apr-2017	Variation to Previous	Variation to Project	Variation to Original
909,307	-	909,307	1,258,412	1,258,412	-	349,105	349,105
46,030,476	-	46,030,476	63,849,462	63,849,462	-	17,818,986	17,818,986
17,097,034	-	17,097,034	23,558,250	23,558,250	-	6,461,216	6,461,216
51,373	-	51,373	68,803	68,803	-	17,430	17,430
15,412	-	15,412	20,641	20,641	-	5,229	5,229

In addition, the Forecast Summary displays the 'Current Period Cost', 'Costs to Date' and 'Forecast to Complete' data. Using the Preferences, you can decide whether the current period's costs are included in the 'Cost to Date' column or remains in the 'Forecast to Complete' data.

Current Month Cost Apr-2017	Actual Cost to Date Jun-16 to Mar-17	Accruals	Total Costs to Date	Forecast to Complete Apr-17 to Feb-25	Retention/Holdback	
					Retained to Date Calculated	Released to Date Actual
-	-	750,000	750,000	508,412	-	-
-	-	195,000	195,000	63,654,462	-	-
-	-	-	-	23,558,250	-	-
-	-	-	-	68,803	-	-
-	-	-	-	20,641	-	-

The Forecast Summary report can be printed in either Full Detail (each cost and revenue line item) or Summary format. There are also several other reports than can be generated from data in this section using the Print Menu:

- **Original Budget Variance Report:** Prints a report that shows only line items that have an variance to the Original budget, collapsing all other line items.

- **Project Budget Variance Report:** Prints a report that shows only line items that have an variance to the Project budget, collapsing all other line items.

- **Previous Budget Variance Report:** Prints a report that shows only line items that have an variance to the Previous budget, collapsing all other line items.

Detailed Cash Flow

This is the full periodic cash flow for all costs and revenues. There are several options to chose from when printing this report via the [Print Menu](#):

- **Full Cash Flow:** Prints this report for each cost and revenue line item.

- **Cash Flow + Current Forecast:** This is a full cash flow report, with the Current Forecast as the first column in the report.

- **Cash Flow + Forecast Summary:** This is a full cash flow report, with the Forecast Summary section as the first set of columns in the report.

Cash Flow Summary

This is a summary version of the full cash flow report.

Stock Summary

The Stock Summary is located on the Cash Flow sheet between the Detailed Cash Flow and the Cash Flow Summary. It reports on stock that has been 'Sold' and 'Handed Over' via the revenue inputs from the Sales section and the Capitalised Sales calculated from the Rental Income section.

- **Sales Summary:** Stock is **'Sold'** at the defined 'Pre-Sale Exchange' date for a sale item, or if no pre-sale is nominated, then at the defined 'Settlement' date.

- **Handover Summary**: Stock is **'Handed Over'** at the defined 'Settlement' date for a sale item (i.e. when the stock has been settled and ownership has been transferred to the purchaser)

STOCK SUMMARY				
SALES SUMMARY				
Units Sold	16.78	16.78	16.78	16.67
Cumulative Units Sold	117.44	134.22	151.00	167.67
% Units Sold	58.4%	66.8%	75.1%	83.4%
SqM Sold	1,477.78	1,477.78	1,477.78	1,400.00
Cumulative SqM Sold	10,344.44	11,822.22	13,300.00	14,700.00
% SqM Sold	59.1%	67.6%	76.0%	84.0%
USD Sold	12,185,833	12,185,833	12,185,833	11,669,167
Cumulative USD Sold	85,300,833	97,486,667	109,672,500	121,341,667
% USD Sold	59.0%	67.4%	75.8%	83.9%
HANDOVER SUMMARY				
Units Handed Over	16.78	16.78	16.78	16.67
Cumulative Units Handed Over	117.44	134.22	151.00	167.67
% Units Handed Over	58.4%	66.8%	75.1%	83.4%
SqM Handed Over	1,477.78	1,477.78	1,477.78	1,400.00
Cumulative SqM Handed Over	10,344.44	11,822.22	13,300.00	14,700.00
% SqM Handed Over	59.1%	67.6%	76.0%	84.0%
USD Handed Over	12,185,833	12,185,833	12,185,833	11,669,167
Cumulative USD Handed Over	85,300,833	97,486,667	109,672,500	121,341,667
% USD Handed Over	59.0%	67.4%	75.8%	83.9%

GST Liability Summary

This section is only enabled when the 'GST Taxation Format is selected in the Preferences. It reports the GST Liability that is calculated on all revenue, and then the GST on Sales that are withheld by Purchasers. The difference is the developer's Net Liability:

- A **positive** Net Liability indicates that the purchasers have withheld a tax amount greater than actual tax liability, and therefore the developer is entitled to a credit for that amount.

- A **negative** Net Liability indicates that the purchasers have withheld a tax amount less than than actual tax liability, and therefore the developer is liable to pay that amount.

The Net Liability is then summarised in the 'GST Payments' Cash Flow Row in the Revenue section, impacting the 'Total Net Revenue' accordingly.

13.1.3 Cash Flow Charts

The 'Chart' sheet shows the following graphs:

- The Project Cash Flow for the Current Forecast.

- The Cumulative Net Cash Flow for all Forecasts.

- Project Profit Report, comparing the Current Margin to the Original Margin.

Current Forecast Cash Flow

Highlighting the position of equity and debt draw downs and repayments through the project life.
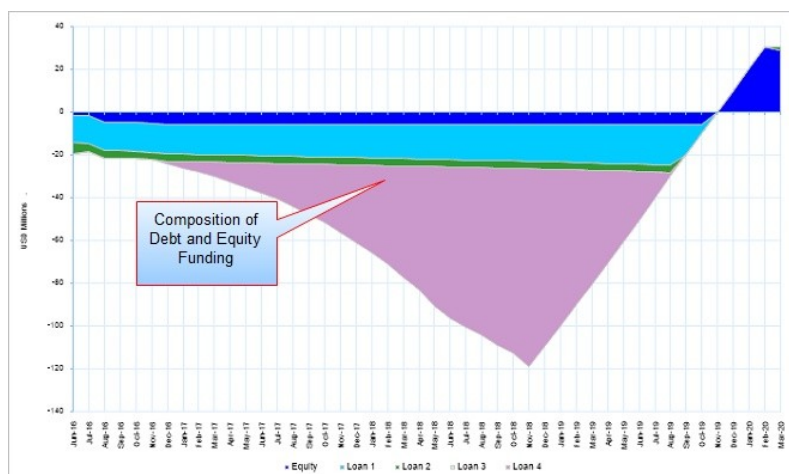
Project Cumulative Cash Flow

This chart depicts the Cumulative Net Cash Flow (after Interest) for each budget/forecast stored (e.g Original, Previous, etc) as well as the Current Forecast.
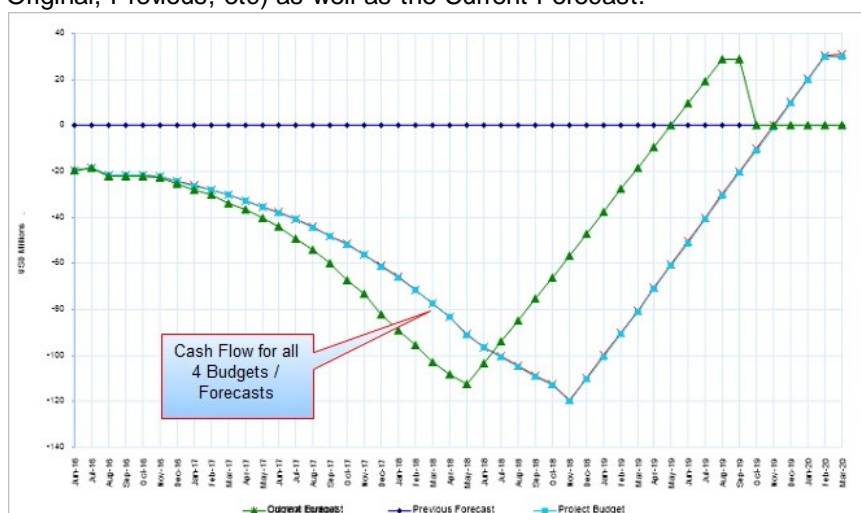
Project Net Cash Flow

This chart depicts the Net Cash Flow (after Interest) for each budget/forecast stored (e.g Original, Previous, etc) as well as the Current Forecast.
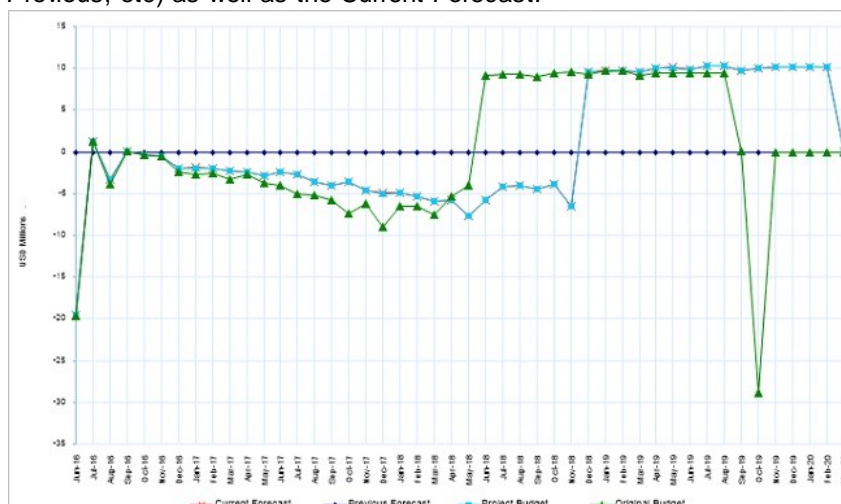
Projected Profit Report

This chart tracks the Current Forecasted profit against the profit line of the Original Budget. It is updated during the Roll Forward process.
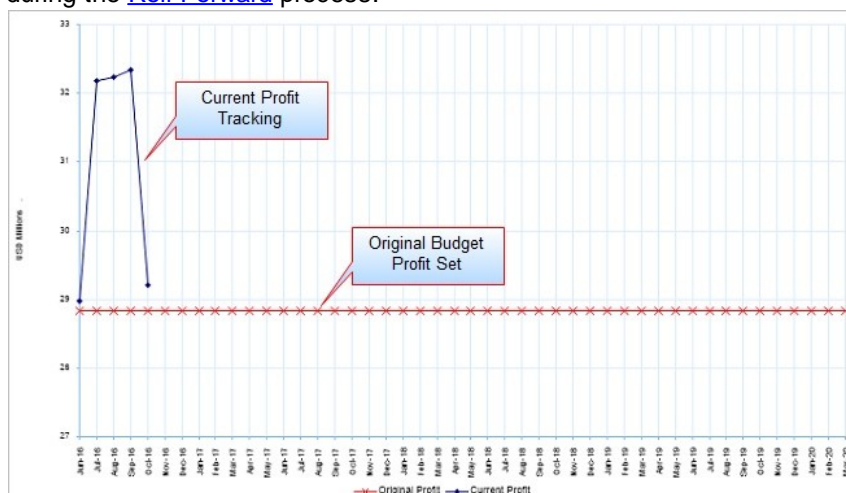
Sources of Funding

- Contribution Share: A pie chart that displays the % contribution by each lender.

- Contribution vs Profit: A stacked column chart showing the amount of debt/equity contributed by each lender, and their profit composition (interest, fees, and profit share)
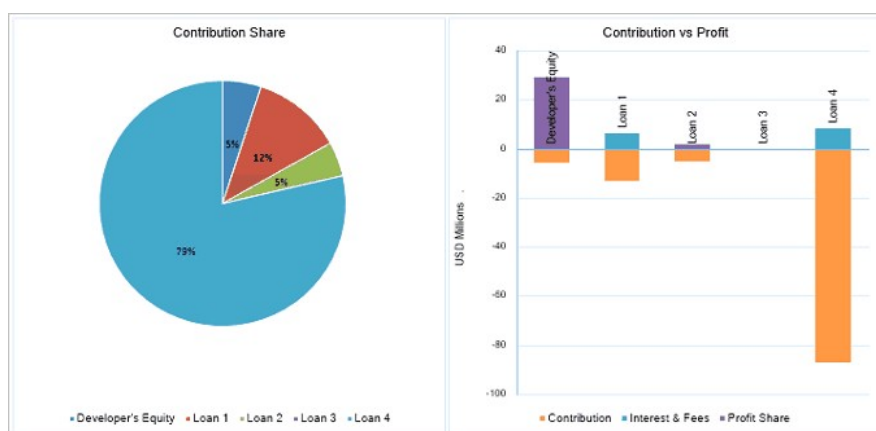
- Contribution by Budgets: Displays the contribution by each lender for each budget/forecast stored (e.g Original, Previous, etc) as well as the Current Forecast.

- Debt and Equity Requirements (Next X Periods): Displays the amount fo equity/debt require in the next 24 rest periods (e.g. months, quarters, etc), or the balance of the project (the lesser of the two), and tracks it agaisnt the net cash flow to be funded (i.e. all negative 'net cash flow before interest ' amounts).

Contribution by Budget

Debt and Equity Requirements - Next 24 Months
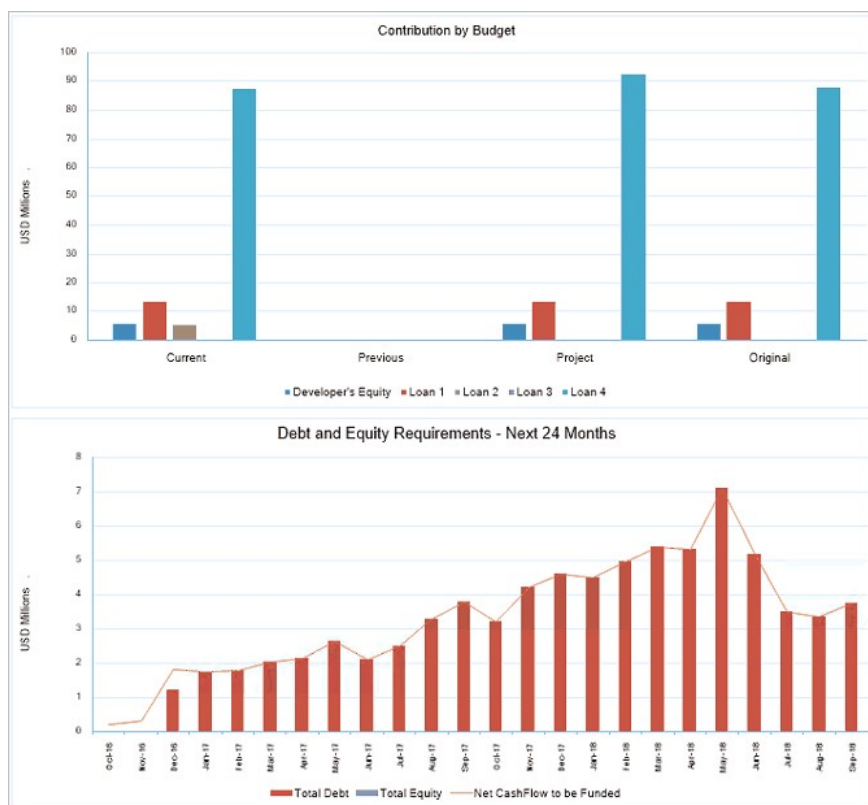
13.2 Stage Reporting

For multi-staged projects, where the entire project is modelled in a single ARGUS EstateMaster DM file, the 'Stage CF' and 'Stage Summary' reports provide the user with a stage-by-stage break-up of all the costs and revenues and the ability to allocate 'global' costs across the stages.

Assigning Costs & Revenues to a Stage

Before you can use the Stage Reporting, you need to ensure that the costs and revenue inputs for the project have been properly set up. To do this, all the costs and revenues must broken-up by stage, and then the appropriate stage code/number entered in the in 'Stage' column for each cost and revenue item.

If a cost/revenue is related to the entire project, then it can be assigned as a 'global' cost, and therefore the code 'G' should be entered in the 'Stage' column. If a cost/revenue line item does not have Stage input, then it is treated as a global cost for the purpose of the 'Stage CF' report.

Construction Costs

Stage	Description	Cost Type	Units	Base Rate / Units
1	Villas	-	1,020	470,000
1	Houses	-	770	550,000
1	McMansions	-	210	630,000
2	Villas	-	720	470,000
2	Houses	-	205	550,000
2	McMansions	-	124	630,000
G	Contingency	-	1	1,000,000

Default 'Global' Costs

The following Costs and Revenues by default are categorised as a 'Global' in ARGUS EstateMaster DM because their is no way to accurately allocate them to a Stage directly. Therefore, they must be apportioned to a Stage using the allocation percentage rates:

- **Revenues**
  - Capitalised Sales
  - Sales Commissions
  - Outgoings, Vacancy Allowances, Incentives and Letting Fees
  - Interest Received on Deposits
  - GST/VAT/Sales Tax Payments
- **Costs**
  - Project Contingency
  - Construction Contingency
  - Loan Fees and Interest Charges
  - Pre-Sale Commissions
  - Corporate Tax
  - GST/VAT Input Credits

Toggle Stages on the Reports

By default, the 'Stage CF' and 'Stage Summary' reports will not display any data until the user selects what stages they want to report on. To do this, click on the 'Stages' button in the menu, select the stages to display in the popup dialog, and press 'OK'
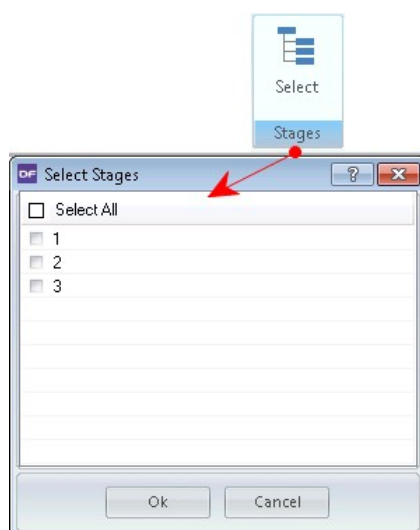
Both reports will refresh, and every cost and revenue section will then be grouping the data by that stage.

13.2.1 Stage Cash Flow

The 'Stage CF' report is broken up into 5 key components.

Stage Costs & Revenues

The costs and revenues that have been allocated to a Stage, will be grouped by their Stage under each cost and revenue heading.

Stage Costs				
Land and Acquisition				
Stage: 1	485,281	433	433	433
Stage: 2	494,372	866	866	866
Stage: 3	503,463	1,299	1,299	1,299
Professional Fees				
Stage: 1	6,453,170	97,819	115,682	135,332
Stage: 2	6,517,702	98,797	116,839	136,685
Stage: 3	6,582,233	99,775	117,996	138,039
Construction Costs (exc Contingency)				
Stage: 1	1,000,000	83,333	83,333	83,333
Stage: 2	1,100,000	91,667	91,667	91,667
Stage: 3	10,802	00,833	00,833	00,833

Stage Revenue				
Gross Sales Revenue (inc Capitalised Sales)				
Stage: 1	6,794,782	1,000,000	1,000,000	1,000,00
Stage: 2	7,479,768	1,100,000	1,100,000	1,100,05
Stage: 3	8,233,899	-	1,210,000	1,210,00
Selling Costs (exc Commissions)				
Stage: 1	(9,002,948)	(23,161)	(36,471)	(51,111)
Stage: 2	(9,821,398)	(25,266)	(39,786)	(55,758)
Stage: 3	(10,639,848)	(27,372)	(43,102)	(60,404)
Gross Rental Income				
Stage: 1	45,000	7,500	7,500	7,500
Stage: 2	49,995	8,333	8,333	8,333
Stage: 3	14			9,257

Global Revenues & Costs

Any cost or revenue that has been allocated as 'global', either by the user entering the code 'G' for the Stage input, or the items that are treated as global by default, will be summarised in the 'Global Revenues & Costs' section

Global Revenues & Costs	Cash Flow Line Items where Stage = G			
Gross Sales Revenue (inc Capitalised Sales)	-	-	-	
Selling Costs (inc Commissions)	(102,983,621)	-	-	
Gross Rental Income	-	-	-	
Leasing Costs (inc Rent Frees, OG's, Letting Fees & Fitout)	-	-	-	
Other Income	-	-	-	
Interest Received	-	-	-	
Nil Tax Payments (Liabilities)	-	-	-	
TOTAL GLOBAL NET REVENUE	(102,983,621)	-	-	
Land and Acquisition	-	-	-	
Project Contingency	74,595,757	147,204	147,204	147,
Professional Fees (inc Development Management)	-	-	-	
Construction Costs (inc Contingency)	-	-	-	
Statutory Fees and Contributions	-	-	-	
Miscellaneous Costs 1	-	-	-	
Miscellaneous Costs 2	-	-	-	
Miscellaneous Costs	-	-	-	
Land Holding Costs	-	-	-	
Financing Costs (exc Fees)	-	-	-	
Application and Line Fees	-	-	-	
Interest Expense	181,211,027	-	-	
Pre-Sale Commissions	-	-	-	
Nil Tax Refunds (Input Credits)	-	-	-	
Corporate Tax	-	-	-	
TOTAL NET COSTS	255,806,784	147,204	147,204	
	8,790,495			(1

Unallocated Revenues & Costs

If any cost or revenue has not been properly allocated to a Stage, a summary of that data will be displayed in the 'Unallocated Revenues & Costs' section. The user will need to go back to the input assumptions and make any necessary fixes to ensure that the 'Unallocated Net Cash Flow' line shows a zero balance.

Unallocated Revenues & Costs	Cash Flow Line Items where Stage = hyphen or blank			
Gross Sales Revenue (inc Capitalised Sales)	3,432,787,378	-	-	
Selling Costs	(34,327,874)	-	-	
Gross Rental Income	-	-	-	
Leasing Costs (exc Rent Frees, OG's, Letting Fees & Fitout)	-	-	-	
Other Income	-	-	-	
TOTAL UNALLOCATED REVENUE	3,398,459,504	-	-	
Land and Acquisition	225,000,000	-	-	
Professional Fees (inc Development Management)	47,001,207	92,738	92,738	92,7
Construction Costs	-	-	-	
Statutory Fees and Contributions	208,299,269	-	-	
Miscellaneous Costs 1	-	-	-	
Miscellaneous Costs 2	-	-	-	
Miscellaneous Costs	-	-	-	
Land Holding Costs	195,985	-	-	
Finance Costs	3,500,000	-	-	
TOTAL UNALLOCATED COSTS	483,998,460	92,738	92,738	92
UNALLOCATED NET CASH FLOW	2,914,463,043	(92,738)	(92,738)	(92,

Global Cost & Revenue Allocation

At the bottom of the report, the user has the ability to allocate the global costs and revenues across the various Stages. To do this, the user will need to enter in an appropriate percentage in the 'Allocation' column of the 'NCF After Allocation' section. Once this is done, the KPI's such as IRR, Margin, NPV and Profit, can be reported on a stage-by-stage basis.

Stage Profit & Loss Statement

This provides an alternative to the Profit and Loss Statement on the Financials tab, as it calculates profit realisation on a stage basis, rather than on the project as a whole.

Important Note: This Profit & Loss Statement adopts the same Revenue Recognition preferences as use on the Financials tab (i.e. '% Completed' or 'On Completion'), however it will only calculate the '% Sold' based on the Revenue Sold.

13.2.2 Stage Summary

The 'Stage Summary' report is a concise view of the Stage Cash Flow data. It provides similar outputs to the 'Stage CF' report, but with the following subtle differences:

- All the Revenues, Costs and KPIs are grouped in their respective Stage columns, so side-by-side comparison is easier.

- For each Stage:

  o The Stage Commencement Date (first period of cash flow activity) and Stage Completion Date (last period of cash flow activity) are calculated.

  o The Cost and Revenue amounts represent a blend of the Cost and Revenues that were directly allocated to that Stage, as well as their allocation of Global Costs (based on the Global Cost Allocation % as entered in the 'Stage CF' report).

o An additional 'Yield Analysis' is provided, breaking down Sales quantities and Tenancy areas by Stage.

13.3 Financial Reporting

13.3.1 Revenue Recognition

Costs for WIP Calculation

This section summarises all the costs in the development and determines if they are treated as Work In Progress, Expensed or Operating Costs, as selected in the Preferences.

- **Expensed:** Directly expense the cost at the date it is incurred in the 'Cost of Sales' section of the Profit and Loss statement, impacting how the Project Margin is calculated.

- **WIP:** Add it to the Work in Progress. This defers the recognition of the cost in the Profit and Loss statement until such time that the defined threshold levels are reached. Until the thresholds are reached, these costs appear as a 'Current Asset' in the Balance Sheet called 'Work in Progress'.

- **Operating:** Define the cost as an Operating Cost. These are expensed to the Profit and Loss statement in the 'Operating Expenses' section. The difference between an Operating expense and a Cost of Sales expense (as defined above) is that an Operating expense is not included in the Project Margin calculation. It is however included in the overall Profit and Loss calculation.

If Land and Acquisition is included in the '% Completed' Revenue Recognition method through the Preferences, then it will be summarised under the 'Development Costs for WIP Calculation heading, otherwise it will be under 'Other Costs'.

Cost Accrual/Adjustments

This section allows the user to manually input any Accruals, Retentions or Prepayments to adjust the '% Completed' to reflect actual work completed as opposed to cash expended.

Ultimately this will impact:

- Work in Progress, Account Payables and Prepayments in the Balance Sheet.

- Revenue Recognition will also be affected if using the '% Completed' basis.

Adjustments in this section will need to be entered on a <u>cumulative</u> basis and reversed out by adjusting the cumulative amounts entered. At the end of the project all numbers in the section should be zero.

Revenue Accrual/Adjustments

This section allows the user to manually adjust revenue recognition in the Profit & Loss both in advance and in arrears. For example, if you have pre-sales deposits (collected by the developer) or sales collections during the construction, you may want to delay this income in the P&L until the building construction is completed or a stage is completed.

A negative sum entered in the top line of the "Revenue Accruals/Adjustments (Cumulative) will delay the revenue recognised in the Profit & Loss. The amount is cumulative, so if you want to delay recognition for 6 months you need to copy that sum across for 6 months. The line below (Net Movement) shows the net movement for the cumulative total. If a revenue amount is negated in the P&L by the Revenue Accrual this amount is take up in the Balance Sheet by a corresponding "Deferred Income" in the Liabilities Section. For a positive revenue accrual adjustment, the reverse is true, that is you bring forward revenue recognition in the P&L and the Balance Sheets shows a accrued income amount as opposed to Deferred Income.

13.3.2 Profit Realisation

% Complete Calculations

% Complete Calculations				
Total Dev Costs Post Adjust. (inc. Land and exc. Op Costs)	112,005,597	17,901,500	17,964,636	26,488,133
Total Expected Development Costs		106,950,656	106,950,656	106,950,656
% Cumulative Development Costs Incurred		16.74%	16.80%	24.77%
Total Expected Revenue		140,350,000	140,350,000	140,350,000
Total Expected Area Sold		17,500	17,500	17,500
Total Sold based on Revenue Sold		140,350,000	140,350,000	140,350,000

These are the calculations that are used when the '% Completed' Revenue Recognition method through the Preferences is adopted. If the 'On Completion' method is adopted, then this section will be hidden.

- **Total Expected Development Costs:** These are the development costs as defined in the 'Revenue Recognition section.

- **Total Expected Revenue:** This is the sales revenue collected, as per the 'Handover Summary' on the Cash Flow sheet.

- **Total Expected Area Sold:** This is the area of all sales settled, as per the 'Handover Summary' on the Cash Flow sheet.

- **Total Sold based on Area / Revenue Sold:** This line will change depending on whether the user has selected the '% Sold Method' for Revenue Recognition purposes to be based on either Revenue or Area in the Preferences.

Thresholds

Profit Realisation				
Revenue Collected Threshold	30.00%			
Cumulative Cash Collected	144,680,000	-	-	-
Collections as a % of Total Revenue		0.00%	0.00%	0.00%
Threshold Achieved		FALSE	FALSE	FALSE
% Sold Threshold	30.00%			
% Sold based on % Revenue Sold		0.00%	0.00%	0.00%
Threshold Achieved		FALSE	FALSE	FALSE
Construction Completion Threshold	30.00%			
Total Cumulative Development Costs ex Interest	112,005,597	17,901,500	17,964,636	26,488,133
% Complete		15.98%	16.04%	23.65%
Threshold Achieved		FALSE	FALSE	FALSE
Profit Realisation Thresholds OK		FALSE	FALSE	FALSE
Profit Realisation Analysis				
% Sold based on % Revenue Sold		0.00%	0.00%	0.00%
% Cumulative Development Costs Incurred		16.74%	16.80%	24.77%
Profit Realised		0.00%	0.00%	0.00%
Cumulative Profit Realised		0.00%	0.00%	0.00%

(Threshold Inputs)

Thresholds can be set to effectively delay the recognition of revenues until the project is substantially sold or under construction.

- If a **Revenue Collection Threshold** is utilised the model will delay the recognition of revenue until the specified % of revenue is collected.

- If a **% Sold Threshold** is utilised the model will delay the recognition of revenue until the specified % of sales have been achieved.

- If a **Construction Completion Threshold** is utilised the model will delay the recognition of revenue until the specified % of construction is completed.

13.3.3 Fixed Assets

This section allows the user to manually add inputs to cater for items that are capitalised as 'Fixed Assets' (i.e. held and not sold on completion). All inputs are to be entered exclusive of GST/VAT/Sales Tax. Fixed Assets appear on the Balance Sheet.

- **Additions:** Fixed Assets are added to model (at cost) when they are completed and are ready to be used. Amounts entered in the Tangible Fixed Assets 'Additions (Cost)' line will reduce the Work in Progress by the same amount and will also impact on the Revenue Recognition calculations.

- **Disposal:** If a fixed asset item is subsequently sold, the cost of the item sold needs to be input into the Tangible Fixed Assets 'Disposal (Cost)' line and the area of the item sold into the Tangible Fixed Assets 'Disposals (Area)' line. In addition, the 'Proceeds of Sale' need to be manually input into the respective line so the model can calculate the profit or loss on the sale of the fixed asset.

- **Asset Revaluation Adjustment:** Asset revaluation adjustment is a manual adjustment line for fixed asset revaluation. For example you may have recognised out of your WIP, an asset for investment income. You recognise its cost in the Fixed Asset Register, but its value may be above or below that cost. The asset revaluation is the incremental change to that cost price. Upon sale of that asset you should negate out the asset revaluation for that asset.

- **Depreciation :** 'Depreciation Expense' is manually entered (we suggest that that the user adds in a depreciation schedule through the use of a user inserted worksheet to assist with these calculations) and flows directly to the Profit and Loss statement as a non-cash item. In addition, the accumulated

'Depreciation Recovered' on an item sold needs to be manually inputted into the respective line so the model can calculate the profit or loss on the sale of the fixed asset.

- **Profit (Loss):** Proceeds of Sale of Fixed Asset *less* Disposal (Cost) *plus* Depreciation Recovered on Fixed Asset Disposal

Fixed Asset Example
In the below example:

- A Fixed Asset with an area of 50sqm and a cost of $100,000 is added in Period 1.

- This is depreciated at $1,000 per month.

- In Period 4, the Asset is sold for $150,000

13.3.4 Profit and Loss Statement

The Profit and Loss Statement (P&L) is a financial statement that summarises the revenues, costs and expenses incurred during a specific period of time. The P&L statement is also known as a "statement of profit and loss", an "income statement" or an "income and expense statement".

Both 'Revenue' and 'Cost of Sales' are treated in accordance with Preference settings set by the user.

Amortization Expense (Write-Back)

Amortization expense is a manual line in the P&L that allows you negate a cash flow item from the P&L and latter amortiSe (recognize) that expense/revenue according to your accounting or tax over a period of time. For example, expenditure relating to the raising of capital cannot be expensed immediately but rather for taxation purposes can be amortized at 20% per annum for years.

13.3.5 Corporate Tax

The model allows the user to calculate Corporate Tax, using the following inputs:

- **Depreciation:** In this line, the model defaults to the 'accounting' depreciation (as per the Profit and Loss statement). However if your 'tax' depreciation is different to your 'accounting' depreciation, the user can overwrite these amounts to estimate the tax.

- **Corporate Tax Rate:** Enter in a single tax rate to calculate tax on profits after depreciation. This can also be adjusted for each period. Please note, that if the Tax Rate for a period is set to zero, it will not calculate a tax loss or benefit for that period.

- **Tax Liability:** By default, the model will calculate the tax liability in this line, based on the inputs above and the various tax treatment preferences. However, there is also the option to manually override the tax liability, if a more customised calculation is required. If any manual adjustments are made, the remaining tax liability calculations will automatically re-forecast any bonus/shortfall to the next tax payment period.

Funding Tax through the Project Cash Flow

Any tax liability is calculated on the Financials sheet is carried through to the Project Cash Flow, allowing it to be funded by either Equity or a Debt facility, just like any other project cost.

13.3.6 Cash Flow and IRR

The Cash Flow and IRR Statement summarises the following cash flows, and calculates their respective IRR:

- Project Cash Flow before Interest, Finance Costs and Corporate Tax

- Project Cash Flow after Interest and before Corporate Tax

- Project Cash Flow after Interest and Corporate Tax

- Equity Cash Flow

13.3.7 Balance Sheet

The Balance Sheet is a financial statement that summarises a company's assets, liabilities and shareholders' equity at a specific point in time to give investors an idea as to what the company owns and owes, as well as the amount invested by the shareholders.

The balance sheet follows the following formula: Assets - Liabilities (called Net Assets) = Shareholders' Equity

Balance Sheet			
Assets			
Current Assets			
Cash and Bank	-	-	-
Accrued Income	-	-	150,000
Work In Progress	17,801,500	18,885,634	27,702,351
Prepayments,Deposits and Other Receivables			
Total Current Assets	17,801,500	18,885,634	27,852,351
Long Term Assets			
Tangible Fixed Assets - Cost (Owned Assets)	100,000	100,000	-
Tangible Fixed Assets - Revaluation Adj. (Owned Assets)	-	-	-
Less - Acc.Dep (Owned Assets) & Amortisation	(1,000)	(2,000)	-
Long Term Assets Total	99,000	98,000	-
TOTAL ASSETS	17,900,500	18,983,634	27,852,351
Liabilities			
Current Liabilities			
Accounts Payables	-	-	-
Deferred Income	-	-	-
Accrued Expenses	-	-	-
Total Current Liabilities	-	-	-
Long Term Liabilities			
Long Term Loans	12,801,500	13,885,634	22,717,351
Intercompany Loans	-	-	-
Total Long Term Liabilities	12,801,500	13,885,634	22,717,351
TOTAL LIABILITIES	12,801,500	13,885,634	22,717,351
NET ASSETS	5,099,000	5,098,000	5,135,000
Shareholders' Equity			
Project Capital	5,100,000	5,100,000	5,100,000
Asset Revaluation Reserve	-	-	-
Dividends	-	-	-
Retained Earnings (Accumulated Deficit)	-	(1,000)	(1,000)
P&L - Current Year	(1,000)	(1,000)	36,000
TOTAL SHAREHOLDERS' EQUITY	5,099,000	5,098,000	5,135,000
Check Balance	-	-	-

Shareholders' Equity

Depending on preference selected by the user for Project Equity Treatment in the Preferences,the Shareholder's Equity section will appear in the Balance Sheet as one of the below:

- **Shareholders Equity (Project Capital):** Developer's equity contributions appear as 'Project Capital' in the 'Shareholders Equity' section of the Balance Sheet.

Shareholders' Equity			
Project Capital	5,100,000	5,100,000	5,100,000
Asset Revaluation Reserve	-	-	-
Dividends	-	-	-
Retained Earnings (Accumulated Deficit)	-	(1,000)	(1,000)
P&L - Current Year	(1,000)	(1,000)	36,000
TOTAL SHAREHOLDERS' EQUITY	5,099,000	5,098,000	5,135,000
Check Balance	-	-	-

- **Long Term Liabilities (Intercompany Loan):** If using this option, the Developer's equity contributions are treated as an Intercompany Loan and appear in the Balance Sheet under the 'Long Term Liabilities' section. If this option is selected, the user will also need to input in the Balance Sheet the paid up Share Capital of the company.

Shareholders' Equity				
Share Capital	100,000	100,000	100,000	100,000
Asset Revaluation Reserve		-	-	-
Dividends		-	-	-
Retained Earnings (Accumulated Deficit)		-	(1,000)	(1,000)
P&L - Current Year		(1,000)	(1,000)	36,000
TOTAL SHAREHOLDERS' EQUITY		99,000	98,000	135,000
Check Balance	-	-	-	-

13.4   Risk Assessment

13.4.1   Sensitivity Analysis

The Sensitivity Analysis is a risk assessment mechanism and allows the user to examine the impact on development performance indicators resulting from changes in a series of input variables.

There are 3 Sensitivity Analysis features available in the ARGUS EstateMaster DM program:

1. Scenario Analysis

2. One-Way What-If Analysis

3. Two-Way What-If Analysis

Rules About Sensitivity Analysis in ARGUS EstateMaster DM

The Sensitivity Analysis tool does not apply variations in the following areas:

- **Manual Overrides in the Cash Flow:** This includes where the default formula in the Cash Flow has been manually overwritten by the user with either a value or a custom formula.
- **Historical Data:** This is any data that is before the 'Current Month' period in the Cash Flow.

Basically, only data that is generated by the 'Input Assumptions' and has not been manually overridden in the cash flow and is either in the 'Current Month' period or in the future (past the 'Current Month'), will be tested in the analysis.

If you apply a sensitivity variation after manually overwriting a cash flow forecast driven by the input assumptions with values or custom formulae, then the sensitivity function may reforecast your cash flow automatically (based on the Reforecast mode for that line item).
For example:
- Say you have set input assumptions for a $1m Construction Cost item, starting in month 6 and spanning for 10 months.

No. Units	Current Base Rate / Unit	Term (Y,BA,Q BM,M)	Month Start	Month Span
1	1,000,000		6	10

- $500k has been spent to date (say the 'Current Month' is 10) with the remaining $500k being spread over 5 months as manually overwritten 'values' (Month 16 onwards still have the default formulae intact).

9 Mar-2007	10 Apr-2007	11 May-2007	12 Jun-2007	13 Jul-2007	14 Aug-2007	15 Sep-2007	16 Oct-2007
- 100,000	- 100,000	100,000	100,000	100,000	100,000	100,000	-

- If you then put a 10% variation for Construction Costs in the Sensitivity sheet, it will do the following
  - Looks that your input assumption of $1m and subtracts cost to date, being $500k.
  - It takes the balance of $500k and escalates that by 10%, being $50K.
  - It then places the $50K variation in month 16, so the total forecasted cost is $1.05m

10 Apr-2007	11 May-2007	12 Jun-2007	13 Jul-2007	14 Aug-2007	15 Sep-2007	16 Oct-2007
- 100,000	- 100,000	100,000	100,000	100,000	100,000	- 50,000

Scenario Analysis

On the 'Sensitivity' sheet, the 'Scenario Analysis' allow you to input variations to each of the variables listed on the table. The 'Variation' column in the 'Scenario Analysis' table affects the calculation cells in the cash flow. You can put any combination of variations and see their impact on the various performance indicators. No function is required to be run as this alters the model directly.

Variable	Variation	Base + Variation
Land Acquisition Costs	0.00%	900,000,000
Construction Costs	5.00%	1,236,510,710
Construction Period	0.00%	Months 6 to 25
End Sale Values	-5.00%	3,261,148,009
Capitalisation Rate	0.00%	0.00%
Sales Span Period *	0.00%	Months 25 to 42
Rental Levels	0.00%	-
All Loan Interest Rates	0.50%	8.50%
* Includes Pre-Sale Exchange and Settlement Spans		

Performance Indicator *	Result
Development Profit	335,614,473
Development Margin	11.47%
Maximum Debt Exposure	1,824,641,245
Date of Peak Exposure	Jul-2009
Breakeven Date of Cash Flow	Dec-2010
Project NPV	(604,370,201)
Project IRR	9.25%
Equity IRR	9.68%
WACC	5.55%
* Based on Gross Development Profit before Profit Share	

Before commencing with further work, the values in the variations should be set back to zero. When you run the 'Sensitivity Analysis' function, the values in the 'Variation' column will return to zero automatically.

One-Way What-If Analysis

In the One-Way What-If Analysis table, put low, mid and high forecast variations for each of the variables.

- Using the 'Enable' dropdown options to select the variables you wish to test before running the sensitivity procedure. If 'No' is selected, the inputs will be greyed out and that rows for that variable will be hidden on the Sensitivity Table.

- Check for any warnings that the variations have caused the model to exceed the maximum time periods or that the variations have resulted in negative interest or capitalisation rates.

Sensitivity to Changes in:	Enable	Warnings	Low	Mid		High
Land Acquisition Costs	Yes		-5.0%	-3.0%	3.0%	5.0%
Construction Costs	No		-10.0%	-5.0%	5.0%	10.0%
Construction Period	Yes	Model exceeds 60 periods	-20.0%	-10.0%	10.0%	40.0%
End Sale Values	Yes		-5.0%	-3.0%	3.0%	5.0%
Capitalisation Rate	Yes		-0.5%	-0.2%	0.2%	0.5%
Sales Span Period	Yes		-30.0%	-20.0%	20.0%	30.0%
Rental Levels	Yes		-20.0%	-10.0%	10.0%	20.0%
All Debt Interest Rates	Yes		-2.0%	-1.0%	1.0%	3.0%
Developer's Discount Rate	Yes		18.0%	19.0%	20.0%	21.0%

Note that these variations do not affect the cash flow - only the outputs on the Sensitivity Table, which is generated when the 'Sensitivity Analysis' function is run.

	Change %	Gross Dev. Profit	NPV	Dev. Margin	Project IRR	Equity IRR	WACC
Base Case (No Variation)	0.00%	596,678,361	(470,055,583)	21.04%	12.97%	15.80%	5.15%
Construction Costs	-10.00%	754,921,694	(366,583,085)	28.19%	15.50%	19.04%	4.99%
	-5.00%	675,843,944	(418,319,334)	24.51%	14.22%	17.46%	5.07%
	5.00%	517,073,426	(521,791,832)	17.73%	11.73%	13.93%	5.23%
	10.00%	437,468,491	(573,528,081)	14.61%	10.51%	12.12%	5.30%
Construction Period *	-20.0%	673,617,925	(355,845,359)	20.72%	14.49%	17.59%	5.06%

Two-Way What-If Analysis

In the 'Two-Way What-if Analysis' section there are drop down boxes for setting parameters.

	Two-Way Chart 1	Two-Way Chart 2	Three-Way RLV Tables
Performance Indicator	Development Profit	Development Margin	RLV (Target Margin)
Variable 1 (X-Axis)	Land Cost	Land Cost	Construction Cost
Variable 2	Construction Cost	Construction Cost	Construction Period
Variable 3			Target Margin

There are two charts each with three drop down boxes:

- **Performance Indicator:** Select either 'Development Profit' or 'Net Present Value' for Chart 1 and either 'Project IRR', 'Equity IRR', WACC' or 'Development Margin' for Chart 2;

- **Variable 1:** Select either Construction Costs, End Sale Values, Construction Period, Selling Span Period, Rental Income, Debt Interest Rates, and Discount Rate (only relevant for Chart 1 if selecting net present value as your performance indicator); and

- **Variable 2:** Select either Construction Costs, End Sale Values or Rental Income.

These are translated into charts on the 'Sensitivity' sheet when the 'Sensitivity Analysis' function is run.

Construction Cost	▼10%	▼5%	no change	▲5%	▲10%
▼5%	799,921	720,843	641,678	562,073	482,468
▼3%	781,921	702,843	623,678	544,073	464,468
no change	754,921	675,843	596,678	517,073	437,468
▲3%	727,921	648,843	569,678	490,073	410,468
▲5%	709,921	630,843	551,678	472,073	392,468
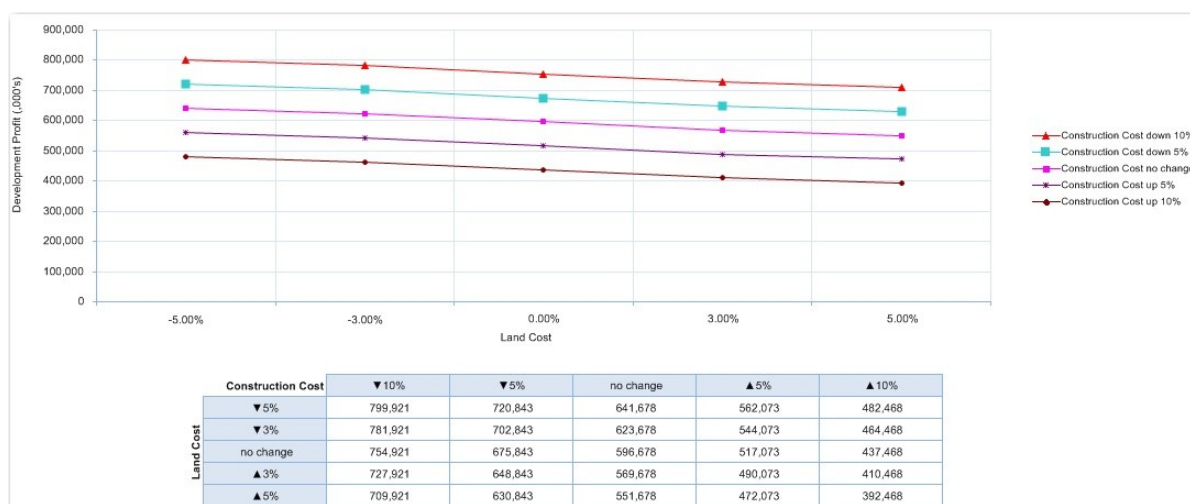
Running the Sensitivity Function

Once you have finished making all input entries, click the Sensitivity Analysis ▦ button on the Ribbon Menu. The sensitivity function performs four functions:

1. It resets the values in the 'Variation' column of the 'Scenario Analysis' to zero.

2. It updates the One-Way What-If sensitivity table on the developer's and land owner's (in the case of a joint venture) 'Sensitivity' sheets;

3. It generates the Two-Way What-If charts on the developer's 'Sensitivity' sheet;

4. It resizes the time scale on the developer's and land owner's (in the case of a joint venture) cash flow chart to the life of the project; and

The length of the operation will be dependant on the memory and speed of your PC, and may take from several seconds to several minutes to complete. You can improve waiting time by keeping as much memory free and closing unnecessary applications.

Variations to Time

The sensitivity analysis varies the period/span variables by adjusting the timing of the cash flow.

Varying the time for the Construction Period has the following impact on the cash flow:

- **Construction Costs, Professional Fees, Statutory Contributions and Miscellaneous Costs:** Extends their starting period (exc Construction) and extends their span time periods.

- **Land Holding Costs:** Extends their span periods.

- **Sales and Rental Income:** Delays the starting date for settlements and the lease start for rentals.

- **Land Costs and Financing Costs:** No direct changes, except for any indirect impact on interest costs by varying debt exposure and funding requirements.

Varying the Sale Span Period only affects the span periods for pre-sale exchanges and settlements, but not the starting dates for each sale item.

Exceeding Time Periods During Sensitivity
If you put too high a variation for construction and/or sale span period you will get an error message just to the right of the input cells. This occurs where the variation causes the cash flow to exceed the maximum time periods (the maximum number for the purpose of sensitivity analysis). You will need to reduce the variation (high forecast percentage), select a longer rest period (eg quarters instead of months) or insert more time periods by using the 'Resize Model' function.

Reports

The Sensitivity Report consists of two sections:

1. **One-Way What-If Analysis Table:** The sensitivity table shows the effects on Profit, Development Margin, NPV, Equity IRR, Project IRR and WACC to the high, mid and low variations (as selected in the Sensitivity settings towards the top of the sheet) for the various variables.

2. **Two-Way What-If Charts:** The two charts below the sensitivity table illustrate the sensitivity of the performance indicators to changes in the combinations of two variables as selected by the user in the relevant drop down boxes.

13.4.2 Monte Carlo (Probability) Analysis

The Probability Analysis provides a further tool for undertaking risk assessment and perhaps re-assessment of the hurdle rates.

Whilst the sensitivity testing provides a range of returns based on different scenarios it does not tell you the likelihood (or probability) of those returns or the effect of several scenarios occurring. The probability analysis overcomes this limitation by assigning probability profiles to the variables in the One-Way What-If table ('Sensitivity' sheet) and running multiple simulations to derive a probability range for the Development Margin and the IRR.

Running the Probability Function

Before running the Probability function, use the 'Enable' dropdown options to select the variables you wish to test. If 'No' is selected, the profile of that variable will not be factored into the results (i.e. it assumes that those variables remain fixed).

Profile	Profile Name	100%?	Enable	Random Value
1	Land Acquisition Costs	OK	No	0.0%
2	Construction Costs	OK	Yes / No	0.0%
3	End Sale Values	OK		0.0%
4	Construction Period	OK	Yes	0.0%

To run the simulations, click on the Probability Analysis ▦ button on the Ribbon Menu. A message box appears asking you how many simulations you wish to run. The higher the number of simulations the more statistically significant the results will be. However the more simulations the longer it will take to generate the results. The length of the operation will also be dependant on the memory and speed of your PC.

When you run the analysis, the model assigns an approximate normal distribution curve for each of the variables in the 'Scenario Analysis' table (Construction Costs, End Sale Values, Construction Period, Selling Span Period, Rental Income, Debt Interest Rates, and Discount Rate). It assumes that there is a 10% chance the low forecast that you assigned in the One-Way What-If table will occur and that there is a 10% chance the high forecast will occur. You can scroll down the 'Probability' sheet to see the 'Probability Profiles of Variable Inputs'. In some cases the profiles will be skewed depending upon your inputs in the One-Way What-If table.

You can change the low and high forecasts in the One-Way What-If table on the 'Sensitivity' sheet before running the Probability Analysis. Alternatively, you can assign your own probability profile to each of the risk variables.

Probability Profile No. 2 Construction Costs			Normal Distribution
Prob(%)	Values		It assumes that there is a 10% chance the low forecast that you assigned in the One-Way What-If table will occur and that there is a 10% chance the high forecast will occur
5%	-15%		
10%	-10%		
20%	-5%		
30%	0%		
20%	5%		
10%	10%		
5%	15%		
0%			
TOTAL	100%		

Probability Profile No. 2 Construction Costs			Custom Distribution
Prob(%)	Values		The Probability Profile has been customised so that there is a higher chance (12%) that the higher forecast will be achieved than the lower forecast (5%)
3%	-15%		
5%	-10%		
10%	-5%		
35%	0%		
30%	5%		
12%	10%		
5%	15%		
0%			
TOTAL	100%		

After the simulations are run you can scroll down to view the statistics and charts of the probability distribution of the Development Margin and the IRR. Note that in many cases the average Development Margin and IRR levels may be different from the development margin and IRR results on the 'Summary' Sheet.

Please note that despite its more sophisticated methodology there are limitations with the probability analysis. Firstly there is the limitation with the assigning of the probability profiles to the variables. Secondly the methodology assumes that the variables are totally independent.

Advanced Probability Users

The program provides an additional probability profile for advance users of Excel. Here the user can link input cells to each other and to the random value (MyProb) of the table in the 'Summary of Probability Variables'. Having done that you will need to provide a most likely estimate for the variable and assign a probability profile to the variable in the tables in the 'Probability Profile of Variable Inputs'. Before running the simulator you can elect to select which variables to set the random generator to.

1. Go to the 'Summary of Probability Variables' table. This will show a table for all the variables.
2. In the last row of the table it will have an item marked 'For Advanced Excel Users'. It will consist of:
   - **Profile Name:** Type in the description of the custom variable you want to add in the Probability function.
   - **Most Likely Estimate:** This allows you to enter a specific % variation, rather than randomly select a % in a specified range.
   - **Random Generator:** This allows you to select f you want to apply the random generator to the variable, and thus include it in the analysis. If the variable is not applicable or is assumed to be fixed, the check-box for that variable should be deselected.
   - **Random Value:** This is the random % variation that will be applied to the variable. It is a fixed field that is dependant on the 'Probability Profile' that is set for a variable. The name for this cell is **MyProb**

Profile	Profile Name	100%?	Enable	Random Value
1	Land Acquisition Costs	OK	Yes	-2.5%
2	Construction Costs	OK	Yes	-5.0%
3	End Sale Values	OK	Yes	2.5%
4	Construction Period	OK	Yes	-20.0%
5	Sales Span Period	OK	Yes	0.0%
6	Capitalisation Rate	OK	Yes	0.3%
7	Rental Income	OK	Yes	-20.0%
8	All Debt Interest Rates	OK	Yes	0.0%
9	For Advanced Excel Users	OK	Yes	3.0%

'MyProb' cell

3. Go to the actual input variable that you want to include in the analysis.
4. If the input variable has been initially entered as a number (rather than a formula), then you will have to turn it into a formula to include the random variable value. For Example: If you have an amount of 1,000,000 entered in the Construction Cost section for a particular input, you would edit the cell so it would read: =1000000*(1+MyProb)
5. This shows that the 1,000,000 input would vary according to the random value being applied. So if in one probability scenario, -5% was the Random Value for that variable, then by editing the cell to include the formula as above, then it would affectively reduce the 1,000,000 by 5% for that scenario.
6. Once the input cell is linked to the Random Value, you can then edit the probability profile for that variable. Each variable has its own probability profile and includes the following fields:
   - **Prob(%):** This is the probability of the certain % variation being applied (indicated by the 'Values' column) to that variable when it runs a simulation.
   - **Values:** This is the Random Value that is being applied to the variable. The probability of this % value being applied is based on the first column (Prob(%)).
7. When amending the probability profiles, you must ensure that the % in the Prob(%) total to 100.
8. Once the profiles have been set, scroll down to the 'Run Monte Carlo Simulations' button, and click it and it will perform the probability analysis function with your custom variable included in the analysis.

Reports

The Probability Report consists of three sections:

1. **Statistics Tables:** For both the Development Margin and Project IRR, the following is summarised:

   - **First Decile:** This is the result where the lowest 10% of data in the simulation results gathered is cut-off. Also known as the the 10th percentile.

   - **First Quartile:** This is the result where the lowest 25% of data in the simulation results gathered is cut-off.

   - **Median:** The median is the value that has just as many values above it as below it. If there are an even number of values, the median is the average of the two middle values. The median is a measure of central tendency. Also defined as the 50th percentile.

   - **Third Quartile:** This is the result where the lowest 75% of data in the simulation results gathered is cut-off.

   - **Last Decile:** This is the result where the lowest 90% of data in the simulation results gathered is cut-off. Also known as the the 90th percentile.

   - **Average**: This is quite simply the average of the probability distribution results.

   - **Standard Deviation:** This is a measure of the variability or dispersion of the probability distribution. A low standard deviation indicates that the data points tend to be very close to the same value (the mean), while high standard deviation indicates that the data are "spread out" over a large range of values.

2. **Probability Distribution for Development Margin:** This shows the probability of achieving a certain Development Margin, based on the results from the simulations performed.

3. **Probability Distribution for Project IRR:** This shows the probability of achieving a certain Project IRR, based on the results from the simulations performed.

PROBABILITY OF RETURNS

EstateMaster | Development Feasibility

Sample Project
Land Servicing Only
Service and Sell Vacant Land as Master Developer

Estate Master Licensed to: Estate Master Administration

Development Margin	
First Decile	11.79%
First Quartile	17.52%
Median	21.78%
Third Quartile	26.61%
Last Decile	30.07%
Average	21.65%
Standard Deviation	6.79%

Internal Rate of Return	
First Decile	9.56%
First Quartile	11.45%
Median	12.83%
Third Quartile	14.99%
Last Decile	17.29%
Average	13.21%
Standard Deviation	2.88%

Statistical Results

Probability Distribution of Development Margin

Probability Distribution of Project IRR

Probability Distribution curves for Development Margina and Project IRR

Part

XIV

14   Printing Reports

Conducting a Final Check

There are numerous output report sheets in the ARGUS EstateMaster DM program that provide you with the performance indicators upon which the property's feasibility is assessed. You should do a reality check of these to make sure that there are no errors. Check the graphs to make sure that they look reasonable and make sure there are no numbers in the cash flow or summary reports, which appear to be unrealistic or wrong. If there are obvious errors, amend them accordingly and update the model if necessary.

Printing

- To print the reports, load the Print Menu by clicking on one of the 🖶 Print buttons on the toolbars.

- When the Print Menu is activated, a series of check boxes will appear for each report.

- Select the reports that you wish to print, the paper size and the number of copies and then click [Print].

- If any results need to be updated, such as the Sensitivity, Probability or Residual Land Value analysis, the software will run these functions automatically before printing their respective reports.

Auto Page Breaks

On the Inputs, Gantt Cart, Cash Flow and Financials reports, 'Auto Page Breaks' can be set to apply page breaks at the start of certain cash flow sections so they start on a new page rather than have a continuous flow. Using Auto Page Breaks will provide neater report layouts, but may print out on more pages.

Selecting your Printer

Before printing any reports, check that the printer you wish to print to is the currently active printer (ie 'Currently Printing on..........'). If you need to select a different printer, then click on the [Select Printer] button.

PDF

ARGUS EstateMaster DM has its own built-in PDF writer. When you initially installed the software, a printer would have been added to your list if Printers called "EstateMaster PDF Printer". This is used to generate PDF files of the selected reports. When [PDF] is clicked:

- If multiple reports are selected, a single PDF file will generated containing all those reports in the orders as selected in the 'Print Sorting' tab.

Warnings

A warning may appear if it relates to data that needs to be updated on any of the selected reports. The program will provide a warning in the following circumstances:

⚠ Variations in the Scenario Analysis are affecting cash flow.

- Variations in the Scenario Analysis are affecting the cash flow.
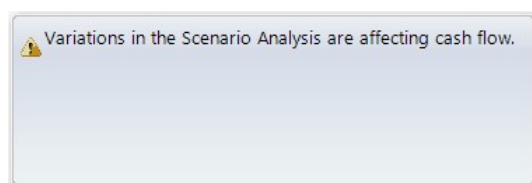
- The cash flow exceeds the maximum time periods or if the variations in the sensitivity test will extend the cash flow beyond the maximum time periods.

If you wish to ignore the warnings, click on the 'Proceed to Print' button, otherwise select 'Cancel' to rectify any of the issues before attempting to print again.

Print Sorting

Using the 'Move Up/Down' buttons, the user can sort the printing order of the selected reports.
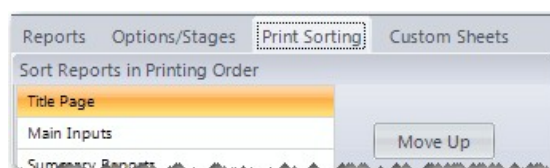
Custom Sheets

If there are any custom worksheets in the model, the user can select to print them here. They will be printed in the order they appear, after the standard reports are printed. If once of the custom worksheets are greyed out in this list, it indicates there is nothing to print on that sheet.

Before printing custom worksheets, it is advised that the Print Area and Page Setup be set for them via the options in the context menu of each custom sheet.
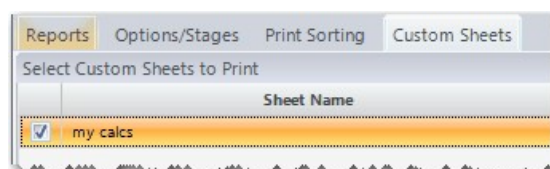
14.1   Custom Worksheets

If using User-Inserted Worksheets, printing functionality is provided to customise how these worksheets are printed. This is available via the Sheet Context Menus. When right-clicking on a User-Inserted Worksheet, the following options are provided:
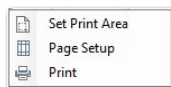
Set Print Area   Define what part of the worksheet to print by setting the currently selected range as the 'Print Area'.

Page Setup   Change the settings for how the page is to be printed, such as:

- Orientation (portrait or landscape)

- Zoom (percentage or 'Fit to Page')

- Paper Size

- Margins and Page Centring

- Headers and Footers

- Print Area

- Title Rows and Columns to repeat

- Page Order.
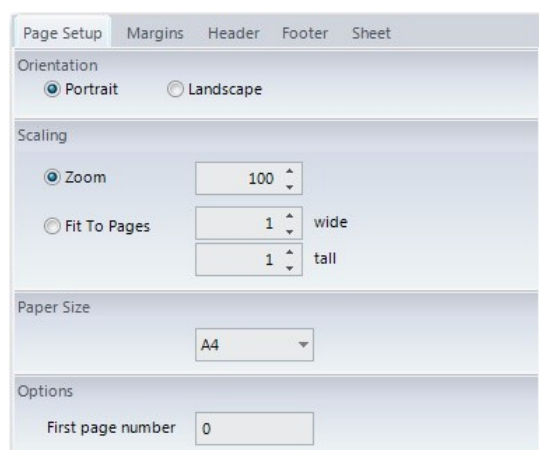
Print   Print the active User Inserted sheet.

Part

XV

15 Using the Enterprise Database

15.1 Introduction to the Enterprise Database

The ARGUS EstateMaster Enterprise Database is a central data management tool that allows the user to archive development cash flows created in the ARGUS EstateMaster DF (Development Feasibility), DM (Development Management), IA (Investment Appraisal) and HF (Hotel Feasibility) software.

It is available to all users of ARGUS EstateMaster DF and DM version 3.xx and above, ARGUS EstateMaster IA 2.xx and ARGUS EstateMaster HF 2.xx and above.

When using it in conjunction with ARGUS EstateMaster CC (Corporate Consolidation), it allows users to generate consolidate or comparison reports for selected cash flows, projects or portfolios to calculate forecasted and actual investment returns including, development profit, internal rate of return and net present value.

The ARGUS EstateMaster Enterprise Database can be used to:

- Archive all input and cash flow data from ARGUS EstateMaster DF, DM, IA and HF files.

- Generate comparison summary and cash flow reports for unlimited number of development options (when used with EM CC).

- Generate consolidated summary and cash flow reports for unlimited number of development stages (when used with EM CC).

15.2 Preparing Data for Exporting

The ARGUS EstateMaster Enterprise Database is a powerful data repository and a robust framework for high level reporting. It is therefore recommended that the data that is exported to it is accurate and meaningful.

Before exporting your ARGUS EstateMaster DM file into the Enterprise Database, please ensure that the following key areas are set:

Intro Sheet

1. Project Introduction

This is information that will be used in the Enterprise Database to identify your Project, please insure it is completed. The 'Project Number' and 'Project Title' are distinctive: This will be the most unique identifier of this Project that the cash flow belongs to. Any cash flows with the same Project Number and Project Name will grouped together in the Enterprise Database.

Setup/CashFlow Sheets

2. 'Type' and 'Status' Fields

The Type and Status fields will also be referenced in the Enterprise Database and used as search filters, so please take note of your choices and update them accordingly.

3. Revenue Data

For more feature-rich and detailed reporting, it is advised that revenue data is entered in detail and categorised using the 'Land Use Codes'.

Easier data entry, but lacks detail !

Recommended Option: More input detail leads to more meaningful and effective reporting.

15.3 Exporting to the Database

To export all the input data in your ARGUS EstateMaster DM file to the Enterprise Database, follow these steps:

1. Ensure that your data is ready and prepared to be exported and the file is saved. If this file has not been saved since the last change, the following message will appear.
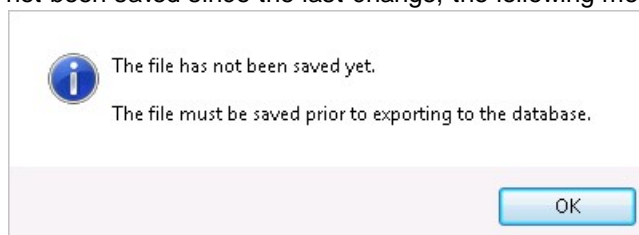
2. Go to 'Data' in the Ribbon Menu and select 'Export to Database'

 .

3. If the database configuration file (EMDB.ini) is not found on the system (and hence a connection to the Enterprise Database cannot be established), then the following error message will appear. It will prompt the user to run the Enterprise Database Management Utility to assist in setting up a connection. Please refer to the Enterprise Database Operations Manual for more information

about configuration.
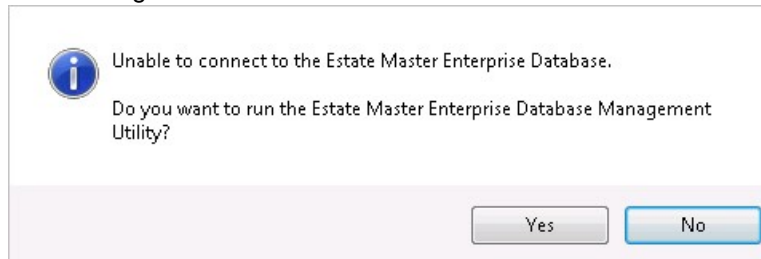
4. Once the connection is successful, an Export Wizard will appear.

Step 1 - Project Allocation

1. Using the Project Name and Project Number on the Intro sheet of the DM file, it will attempt to find any records of that Project Name or Number in the database. If the project is already in the database, it will skip Step 2 and continue to Step 3. Otherwise, the following messages may appear on the wizard:

- **Project Number and Name Doesn't Exist**
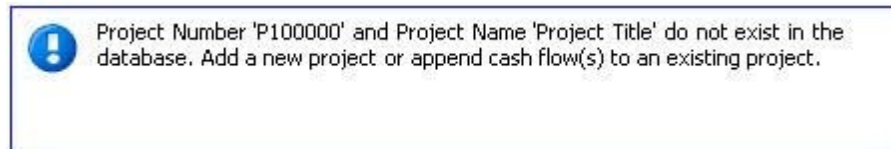
- **There is a mismatch between the details on the file and in the database**

2. If any of these messages appear, two options are available to the user:

- **Add New Project to Database:** If this option is selected, by default, it will use the details on the Intro sheet of the DM file as the Project Number and Name. The user can edit this if necessary directly in the wizard, and the Intro sheet will be automatically updated.

- **Append to Existing Project:** If this option is chosen, the Project Number and Name fields are disabled, and the user is required to select a project that is already in the database. Once selected, the Intro sheet will be automatically updated.
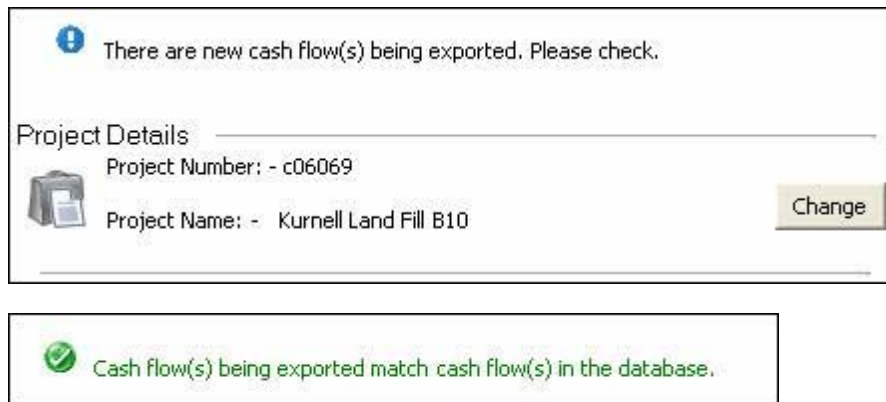
Step 2 - Confirm Export Details

1. If the project is already in the database, it will go then the following messages may appear. The user has the ability to change the project the cash flow is being exported to if required. It will also inform the user if this is a new cash flow being exported, or if the cash flow already exists in the database.
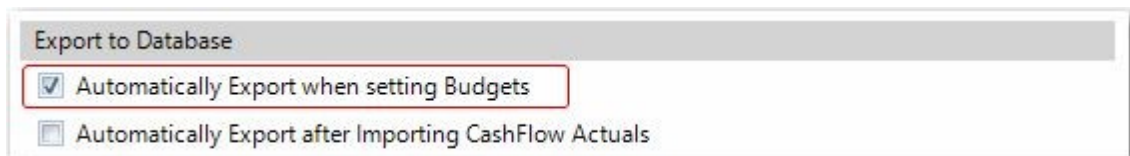
Step 3 - Export Data

1. Once satisfied with the details, click 'Export' to begin the data transfer process.

15.3.1 Exporting when Setting Budgets

When setting the Original, Project or Previous Budgets in a DM model you can elect to have it also automatically store the budget into the Enterprise Database at that point in time. This is controlled via the application settings.
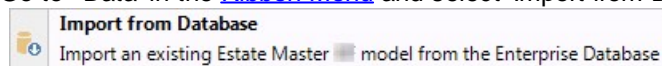
If this option is enabled, then when budgets are set, the data export wizard will appear, and once all data is exported into the database, the cash flow will be marked/flagged it accordingly in the database with the budget type (ie Previous Budget, Original Budget, etc). **This is very important for the DM-type reports in the ARGUS EstateMaster CC software where different budgets are reported.**

If this option is disabled, then if they ever export to the Enterprise Database manually through the 'Management Tools', then the cash flow will be marked as 'Current Budget' in the cash flow.

15.4 Importing from the Database

To import input data in your ARGUS EstateMaster DM file from the Enterprise Database, follow these steps:

1. Go to 'Data' in the Ribbon Menu and select 'Import from Database'

2. If the database configuration file (EMDB.ini) is not found on the system (and hence a connection to the Enterprise Database cannot be established), then the following error message will appear. It will prompt the user to run the Enterprise Database Management Utility to assist in setting up a connection. Please refer to the Enterprise Database Operations Manual for more information

about configuration.
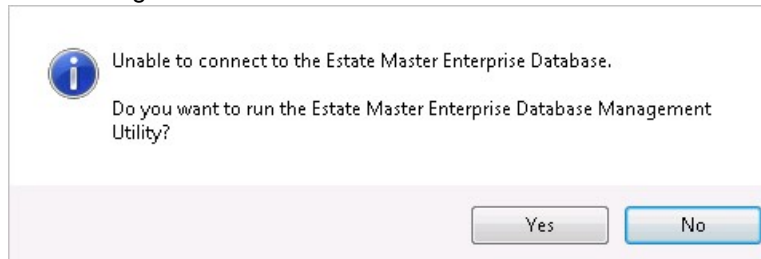
3. Once the connection is successful, an Import Wizard will appear.

Step 1 - Select Project

1. The first step will display a list of the Projects that exist in the Enterprise Database. If their is an extensive list, you can filter it either by Project Number or Name.
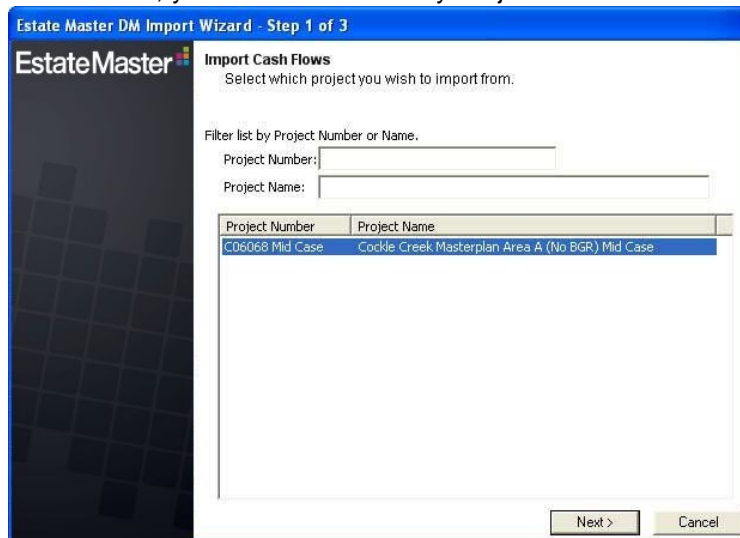
2. Select the appropriate project and click on 'Next'.

Step 2 - Select Cashlow

1. The next step will display <u>all</u> the cash flows that exist in the selected Project in the database. You can sort the list by clicking on the column headers.
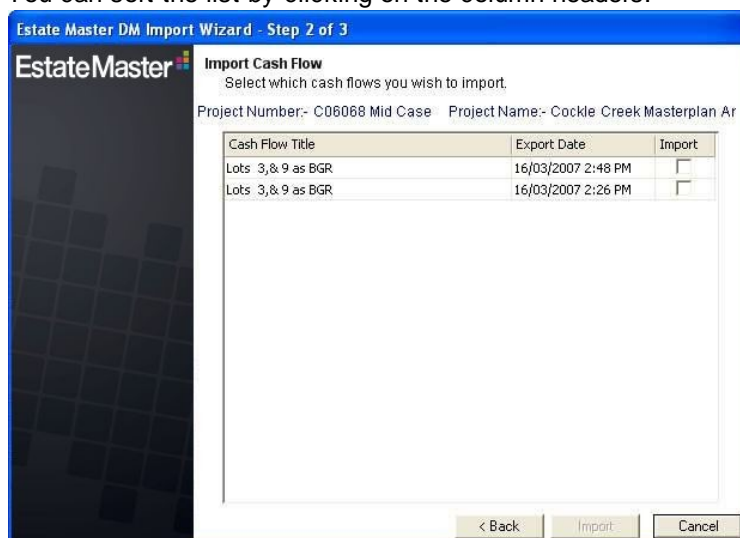
2. Select the cash flows you wish to import. There is a maximum of **1** cash flows you can import into a DM file from the database at any one time.

Step 3 - Import

1. Once the cash flows have been selected, click on 'Import' to begin the file transfer process.

Part

XVI

16   Troubleshooting

16.1   Maximum Cash Flow Periods

For every payment and revenue item it is necessary to put a start date and span period else the program will not add the payment to the cash flow. The start date must be a number between zero (0) (which represents the first or current period) and the maximum time periods as shown on the bottom of the 'Setup' sheet. The span period must be one (1) or more.

The start and span numbers must not add up to more than the maximum time periods. If you exceed the maximum time periods a warning will be displayed.

If you find that the number of time periods are not enough for the project, re-examine the interval period nominated and adjust it to a greater interval period eg from months to quarters or insert more time periods by changing the 'Resize Time Periods' preference.

If you put too high variation for construction and/or sale span period in the sensitivity input table you will get an error message just to the right of the input cells. This occurs where the variation causes the cash flow to exceed the maximum number for the purpose of sensitivity analysis (15 more time periods than the cash flow depicts). You will need to either reduce the variation (high forecast percentage) or else select a longer interval period (eg quarters instead of months).

16.2   Entering the Correct Data

If you find that once all data has been entered and calculated, the performance indicators in the financial summary are returning a #VALUE or #NUM value. The reasons for this could be either of the following:

1. Incorrect data entered in the input cells. There is a safeguard built into the program against entering text in a cell that requires a numerical entry. If this is the case the cell will return 'Error Input' in red font or the cell will have a red background. The contents of the cell should be examined and edited appropriately.

    Examples of User Input Error Warnings

Text entered in a numerical cell

Incorrect code entered

Incorrect unit of measurement used

2. The estimate of IRR in the 'Hurdle Rates' section of the 'Setup' sheet may be too far off and should be adjusted to a rate closer to the expected IRR.

16.3 Opening a Previous Version

If the structure of any of the standard worksheets in ARGUS EstateMaster DM change between versions, then any custom formulas that users enter in the input cells in the previous version, *may* not reference the same intended row/column when they open it in the new version. This is only an issue in certain circumstance, not every time an update is released. If an update is released and there are no structural changes to the standard worksheets, then the integrity of custom formulas in input cells will remain intact.

For example:

- If the user had a custom formula in an input cell that was referring to cell BE100 on the 'CashFlow' sheet, say it was the Total Construction Cost cell, then the formula "=BE100", as well as the value that it calculates, is then saved to the ARGUS EstateMaster DM data file.

- If a new version of ARGUS EstateMaster DM is released, and say 1 row was entered *above* the Total Construction Cost row in the spreadsheet interface template (possibly due to a new feature or update), then the Total Construction Cost cell/row is now BE101, instead of BE100.

- When we load the custom formula "=BE100" that was saved in the previous version data file into the input cell of the newer version, then the formula would be wrong and the value it calculates wrong also.

- Unfortunately, given that our user input interface is spreadsheet-based and we allow the user to enter in custom formulas anywhere in the model, there is no easy solution for this.

Example showing how a cell reference to an item can change between versions of the software

Option to Load Formulas or Values

When the software detects the user is opening a file saved in a previous version *and* a structural change has been made to a standard worksheet, It will then give the user the following options:

1. **Load Formulas:** Open the file with any custom formulas used in the inputs. This option should only be selected if the user is confident that their custom formulas used in inputs will not be affected by the structural change or that they are able to easily adjust them to their correct cell referencing once the file is opened. The downside to this option is that their is a risk that the user is unaware of where all their custom formula inputs are, and forgets to adjust all of them correctly.

   Since the message shows a description of *what* the structural change is and *where* it is located, the user is aware and can decide if or how it will impact their custom formulas. If the user does decide to open the file with formulas, there is no guarantee that the integrity of these formulas will be intact (as per the example demonstrated above), so it is recommended that the user check these formulas and amend them if necessary. The user at least knows what to look for when auditing their custom formula inputs to see if the structural change has affected them. In some cases the structural change may have no impact on the user's custom formulas, but nevertheless, it is still recommended to check them.

2. **Load Values:** Open the file with inputs as 'values' only. This is the **safest option** to ensure that all results are calculating correctly when the file is opened. The downside to this option is all custom formulas used in inputs will be lost, and the user will have to reset them if required.

Part XVI
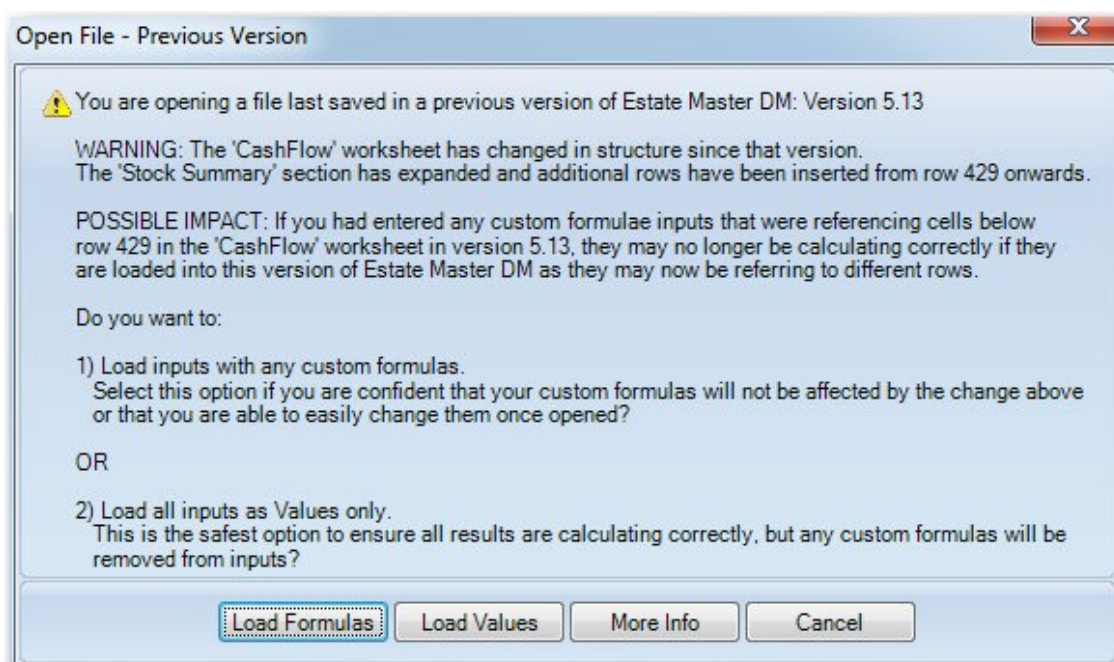
17 Appendix 1 - Accounting System Integrations

17.1 Intuit QuickBooks Online

ARGUS EstateMaster DM is integrated with the Intuit QuickBooks Online accounting software to allow you import accounting data directly into the cash flow table.

Which Versions of QuickBooks Online?

The integration is compatible with **Intuit QuickBooks Online Plus** only. It is not compatible with the Desktop versions of QuickBooks or any of the 'Reckon' branded accounting software.

Important Note: There is often confusion when referring to 'QuickBooks', as 2 different accounting software vendors (Intuit and Reckon) use the same product name for completely different solutions. For more information, please refer to the following articles: A Quick Primer: Intuit, Reckon and QuickBooks

17.1.1 Initial Configuration

Before you can integrate your QuickBooks Online with ARGUS EstateMaster DM, you will need to decide how you are using QuickBooks Online to manage multiple development Projects, as this will impact how ARGUS EstateMaster DM will import data from it:

- Do you have **1 single QuickBooks Online Company** for all your projects? You will need to create 'Classes' in your QuickBooks Online Company so that cost and revenue transactions can be assigned to specific projects. If an 'Account Code' is then specified in the ARGUS EstateMaster DM file, then all matched items get filtered out that don't have a Class that has the same value as the Account Code.

- Do you have a **multiple QuickBooks Online Companies**, being one for each project? No further configuration in QuickBooks Online is required. By ensuring that the 'Account Code' in the ARGUS EstateMaster DM file is blank, it will not attempt to filter transactions for a specific Class.

Set Account Numbers in Chart of Accounts

In order to map transactions in QuickBooks Online with cost and revenue line items in ARGUS EstateMaster DM, you will need to assign Account Numbers to your Chart of Accounts in QuickBooks Online. To do this:

1. Go to [Settings > Account and Settings > Advanced] and ensure 'Enable account numbers' is turned 'On'
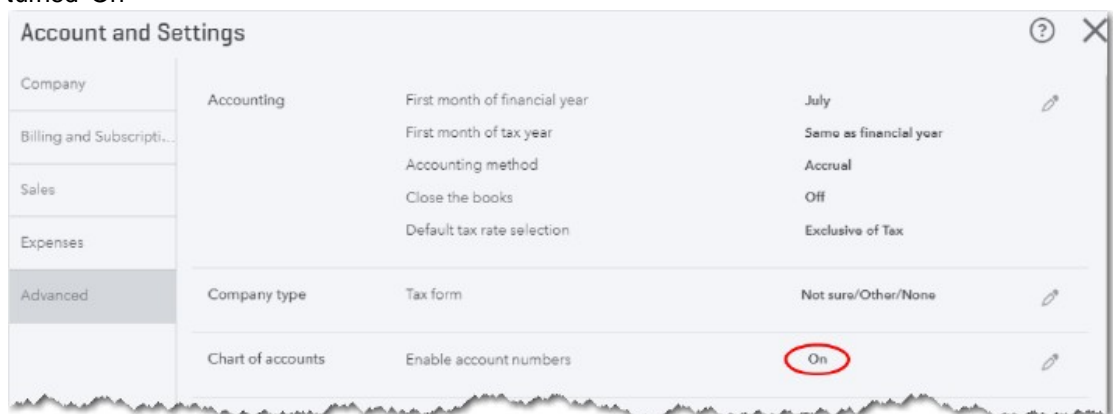
2. Go to [Settings > Chart or Accounts]. Edit and assign a number to every account that will have cost and revenue transactions recorded against it.

Create a Custom Class

If you are using a single QuickBooks Online Company to manage the accounts for multiple development projects, then you will need to utilise Classes to allocate transactions to different projects in QuickBooks Online.

Classes are administered in your QuickBooks Online 'Lists' (only available in the 'Plus' version, not 'Basic'). When creating a Class to be used for this integration, it is recommended that a parent Class is created first (named something like 'Project', 'Project Number', 'Job Number', etc) and then the child Classes added under it, containing the unique Project Accounts Codes that are assigned to each project, and are entered in the 'Account Code' field for each project's ARGUS EstateMaster DM file.

On individual transactions, assigning the correct Project Accounts Codes from the list will then ensure that the transaction will be imported into a ARGUS EstateMaster DM file that matches the same Project Account Code.

17.1.2 Connection Settings

Since QuickBooks Online is a cloud application, it utilises the OAuth online authentication protocal to allow the user to securely log into their account. The user is prompted to log into their QuickBooks Online account via this process and select the Company they want to import data from when they either:
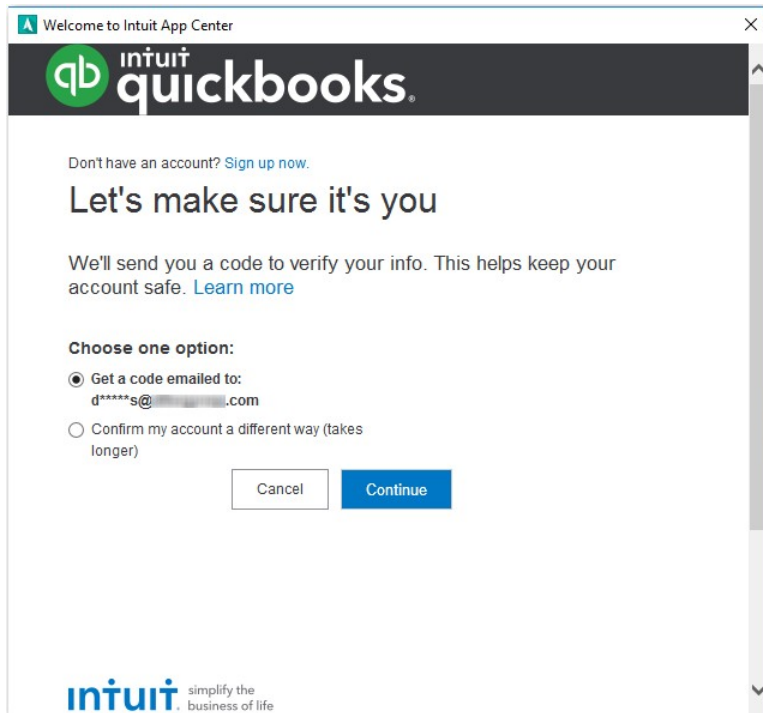
1. Click on the [Connect] button on the Connection Settings tab, or

2. Initiate an import request, via clicking on the [Update CashFlows] button on the Integration form, or clicking on the [Accounts Data] button on the ribbon menu.

Online Authentication

The first login screen prompts the user for their QuickBooks Online email login and password.

The next screen requests account verification via a code that is emailed to the main account email address.
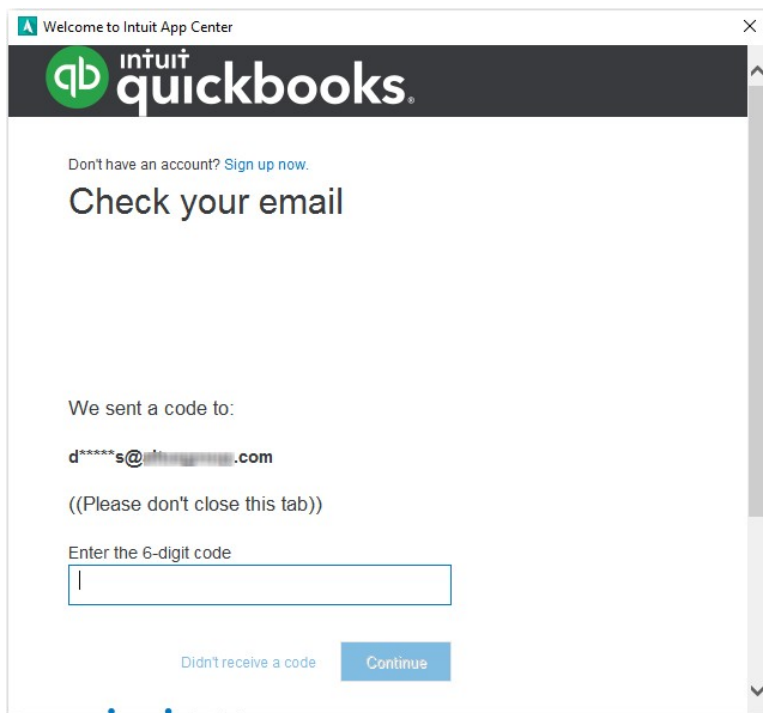
Enter the code once it is received.

The next screen will then prompt the user to select what QuickBooks Online 'Company' to import data from.
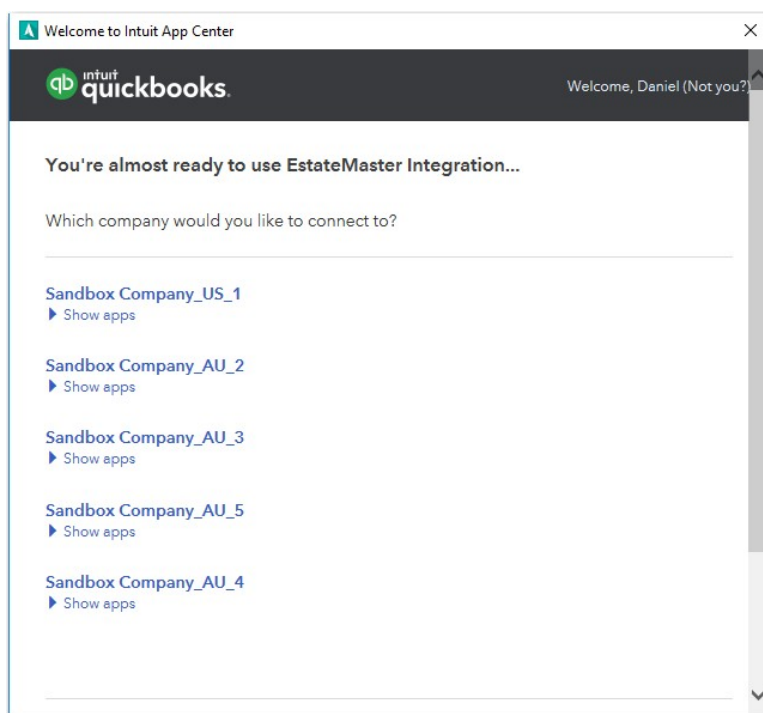
Click [Authorize] to allow the EstateMaster Integration to import data from your selected QuickBooks Online Company File.
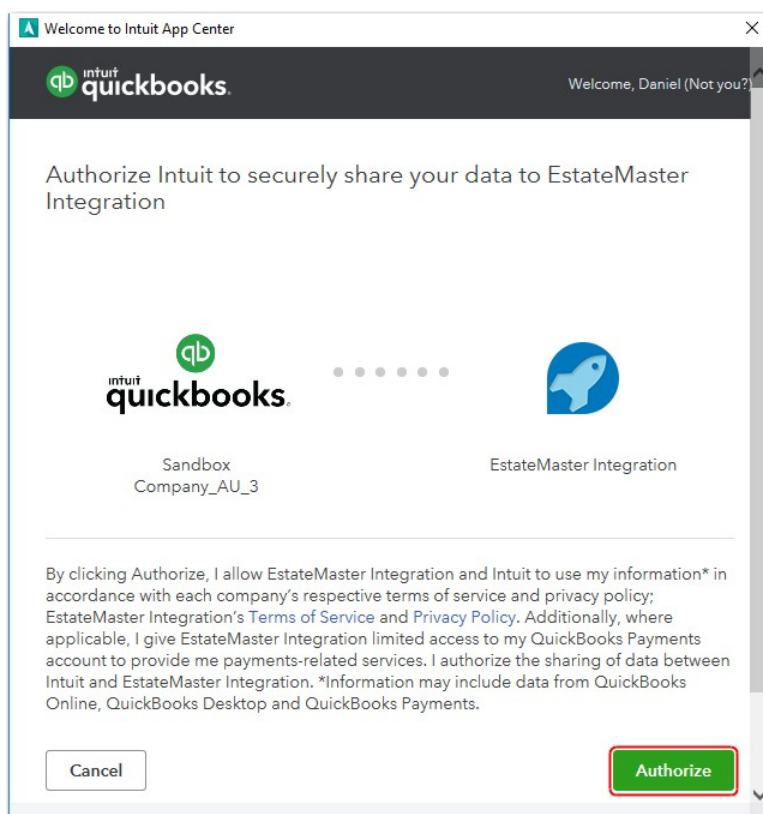
17.1.3   Data being Imported

In summary, this is the data that is being imported from QuickBooks Online:

- All transactions that are of type:

- o Expense (Purchase)

- o Bill (Accrual-basis only)

- o Bill Payment (Cheque)

- o Supplier Credit (Accrual-basis only)

- o Sales Receipt

- o Invoice (Accrual-basis only)

- o Payment

- o Adjustment Note (Accrual-basis only)

- o RefundReceipt

- o JournalEntry

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✓
Import Tax Exclusive Data	✓
Import Data on Cash Basis	✓
Import Data on Accruals Basis	✓

Data Source

Data is sourced from the following tables and fields:

Table	Fields	Comments on Logic
Accounts	*AcctNum*	• User-defined account number to help identify the account within the chart-of-accounts. • This is used to retrieve the unique Cost Code used for that transaction.
TaxCodes	*ID*	• The Tax Code ID.
	SalesTaxRateList	• List of references to tax rates that apply for sales transactions.
	TaxRateDetail:TaxRateRef	• Reference to the tax rate that is stored in the TaxRates table
	PurchaseTaxRateList	• List of references to tax rates that apply for purchase transactions
	TaxRateDetail:TaxRateRef	• Reference to the tax rate that is stored in the TaxRates table
TaxRates	*ID*	• The Tax Rate ID.
	RateValue	• The Value of the tax rate.
Purchase (Expense) **Bill** **Vendor (Supplier) Credit** **Invoice** **Credit Memo** **Sales Receipt** **Refund Receipt**	*TxnDate*	• The date entered by the user when this transaction occurred.

Table	Fields	Comments on Logic
Journal Entry		
	Line	
	Amount	• Transaction amount for that line item.

	DetailType	• Indicates whether the line detail has been entered as a:
		  ○ Item-Based Transaction or
		  ○ Account-Based Transaction
		• if it is an 'Item Based Expense', the Item table is checked to find the related Account for that Item
		• Sales Receipts and Invoices are always 'Item' based, and therefore always set to SalesItemLineDetail
		• Journal Entries are always set to JournalEntryLineDetail

	DetailType: ItemRef	• Applies to Item-Based Transactions only and is the reference to an Item object. • The Item table is checked to find the related Account for that Item
	DetailType: ClassRef	• The Class associated with the expense (used to filter transactions for a specific project).
	DetailType: AccountRef	• Only applicable if the line detail is entered as an 'Account Based Expense' • The Expense account ID associated with this item. • The ID used to find the AcctNum (Cost Code) in the Accounts table. • Also used for Journal Entries to check if the Account Type is is an Expense or a Sales transaction, and therefore used to apply the correct Tax Code.
	DetailType: TaxCodeRef	• The Tax Code ID associated with this item. • Used to track the taxable or non-taxable status of products, services, and customers • The ID used to lookup the TaxCodes table, and then subsequently the TaxRates table, to determine the tax rate applied to that item.
	DetailType: PostingType	• Applies to Journal Entries only • Indicates whether this JournalEntry line is a debit or credit. ○ If Credit: Amount is multiplied by -1
Payment **Bill Payment**	*TxnDate*	• The date entered by the user when this transaction occurred.
	Line	
	Amount	• Payment amount for that line item. • To facilitate part-payments and the allocation of tax across those payments, the ratio between the actual payment amount and the linked transaction amount is calculated.
	LinkedTxn	• Transaction to which the payment is related to (e.g. Bill, Invoice, etc)
	LinkedTxn:TxnId	• ID of the linked Transaction
	LinkedTxn: TxnType	• Will indicate if the linked Transaction is an Invoice, Bill, Credit Memo or Vendor Credit' • If Credit Memo or Vendor Credit, the payment amount is multiplied by -1

17.2 Microsoft SQL Server

ARGUS EstateMaster DM can be integrated with any SQL Server-based accounting system to allow you to import accounting data directly into the cash flow table. You may need to consult your Database Administrator or the vendor of the accounting software to assist with this integration as it requires developing a custom SQL Query.

17.2.1 Initial Configuration

Before you can integrate your SQL Server database with ARGUS EstateMaster DM, you will need to:

1. Ensure that the following data is available in the database and can be returned for every cost/revenue transaction:

Project Number / Job Number (Optional)	• The unique number/code where all transactions for that Job/Project are grouped under.
	• This is required where multiple projects are tracked in the same database, and we use this unique identifier (which must be entered on the Intro tab of the ARGUS EstateMaster DM file) to filter transactions for a specific project only.
	• If there is only 1 project tracked in the database (and no Project/Job number in the database to filter data against) then the database query you create to retrieve the data would need to ignore trying to check for the existence of a Project/Job number field.
Cost Code (Mandatory)	• The cost code / account code that identifies that transaction type based on the Chart of Accounts
Transaction Date (Mandatory)	• The actual date the sale or purchases occurred (i.e money was received or a payment was made).
	• For the SQL Server integration, there is no differentiation between Cash or Accrual basis, and therefore it is recommended that the data being imported, is configured to be on a Cash basis.
Amount Inc Tax (Mandatory)	• Actual cost/revenue amount spent/received including Tax
	• This data would be selected to be imported into the CashFlow table if the 'Include Tax' checkbox is selected on the on the Import tab
	• If there is no tax applicable for the entire project, then this data can be defined as being the same as the 'Amount Exc Tax' data.
Amount Exc Tax (Mandatory)	• Actual cost/revenue amount spent/received excluding Tax
	• This data would be selected to be imported into the CashFlow table if the 'Include Tax' checkbox is deselected on the on the Import tab

2. If the above data is sourced from multiple Tables in the database, it might be ideal to create a custom 'SQL View' on the database. A View is virtual table based on the results of an SQL

statement. It contains rows and columns, just like a real table, and come from one or more real tables in the database.

3. Create a SQL Query that will be entered in the 'Database Query' tab. If a SQL View has been created as per the above suggestion, or all the required data is already available in a single database Table, then this could end up being be a relativity simple SELECT 'x' FROM 'y' WHERE 'z' query. Otherwise it could be quite complex and require advanced SQL logic.

Important Note: You may need to consult your Database Administrator or the vendor of the accounting software to assist with items 2 and 3 above.

17.2.2 Connection Settings

These are the settings that the user must define to be able to connect to the SQL Server Database.

Server Name	The SQL Server where the accounting database is located
Windows Authentication	If selected, it will attempt to connect to the SQL Server using Windows Authentication (i.e. the current logged on user)
SQL Username and Password	The credentials required to connect to the selected server and access the database.
Database Name	The name of the accounting database.
	The [Test Connection] button will conduct a test connection to the selected database to ensure all credentials are correct.

17.2.3 Database Query

For the SQL Server integration, the Database Query tab contains a SQL Syntax Editor, where you can enter and validate the SQL Query that will be used to fetch the data.

A default query is displayed to show how it should be structured. At any time, you can press the [Reset Query] button to undo all edits and revert back to the default query.

Checking Syntax

The Syntax Editor will highlight any errors in relation to syntax as your are entering the query, and the [Check Syntax] button will also run further validation, such as:

- Ensuring that the Table/View indicated in the FROM statement actually exists in the database.

  o This Table/View can have any name and doesn't have to be the same as indicated in the default query.

- Ensuring that the columns indicated in the SELECT statement include the 'Mandatory' data as specified in the Initial Configuration and actually exist in the Table or View indicated in the FROM statement.

  o If the columns in the database Table/View are named exactly the same as the default query, then you can leave the defaults.

  o If the columns in the database Table/View are named differently to the default query, then you will need to use 'Aliases' (e.g. if the column is named 'AccCode', and the Query expects 'CostCode', then an alias such as `a.AccCode AS CostCode` would need to be entered)

- Ensuring that the data is filtered by the following parameters in the WHERE statement:

  o **{ProjectAccountCode}**

    ▪ This is the Account Code entered on the Intro tab of the ARGUS EstateMaster DM file.

    ▪ It should be used to filter against the column (which can have any name) in the Table/View that contains the Job/Project number related to each transaction (if multiple projects are tracked in

ARGUS EstateMaster
Appendix 1 - Accounting System Integrations

the same database) or hard-coded.

Filtering against a Database Column	Filtering against a Hard-coded Value
8 WHERE 9 ProjectCode = '{ProjectAccountCode}'	8 WHERE 9 '123' = '{ProjectAccountCode}'

- o **{StartDate}** the **{EndDate}**

  - These are the Start and End Dates as entered on the Import tab

  - It should be used to filter against the column (which can have any name) in the Table/View that contains the Transaction Date data.

```
8 WHERE

10   AND a.DatePaid >= '{StartDate}'
11   AND a.DatePaid <= '{EndDate}'
```

© 2019 Altus Group

301

17.3   MYOB Exo

ARGUS EstateMaster DM is integrated with the MYOB Exo accounting software to allow you to import accounting data directly into the cash flow table.

17.3.1   Initial Configuration

Before you can integrate your MYOB Exo database with ARGUS EstateMaster DM, you will need to:

1. Create a separate MYOB Exo SQL database for each development project. Unlike with other integrations, ARGUS EstateMaster DM will not filter transactions based on the Project 'Account Code' entered on the 'Intro' sheet, as it is assumed that the SQL database being connected to, only contains transactions for a single particular Project. This needs to be confirmed, before proceeding to use this integration.

2. Have a custom 'SQL View' installed on your MYOB Exo database(s).

3. Enter in Cost Codes against each line in the ARGUS EstateMaster DM CashFlow in the correct format.

Custom SQL View

To extract the data required to populate the ARGUS EstateMaster DM CashFlow form the MYOB Exo database, the following custom View has been developed. It will need to be added to your MYOB Exo database(s). How to Create Views

View Name	dbo.vw EstateMaster

SQL Query	`SELECT    dbo.GLMOVEMENTS.BRANCHNO ,`
	`          dbo.GLSUBACCS.ACCNO ,`
	`          dbo.GLACCS.NAME ,`
	`          dbo.GLSUBACCS.SUBACCNO ,`
	`          dbo.GLSUBACCS.NAME AS SUBACCOUNTNAME ,`
	`          CAST(dbo.GLMOVEMENTS.AMOUNT AS DECIMAL(20, 5)) AS AMOUNT ,`
	`          CAST(dbo.GLMOVEMENTS.AMOUNT_FC AS DECIMAL(20, 5)) AS AMOUNT_FC ,`
	`          dbo.PERIOD_STATUS.PERIODNAME ,`
	`          dbo.PERIOD_STATUS.STARTDATE ,`
	`          dbo.PERIOD_STATUS.STOPDATE`
	`FROM      dbo.GLSUBACCS`
	`          LEFT OUTER JOIN dbo.GLACCS ON dbo.GLSUBACCS.ACCNO =`
	`dbo.GLACCS.ACCNO`
	`          INNER JOIN dbo.GLMOVEMENTS ON dbo.GLSUBACCS.ACCNO =`
	`dbo.GLMOVEMENTS.ACCNO`
	`                                    AND dbo.GLSUBACCS.SUBACCNO =`
	`dbo.GLMOVEMENTS.SUBACCNO`
	`          LEFT OUTER JOIN dbo.PERIOD_STATUS ON dbo.GLMOVEMENTS.PERIOD_SEQNO =`
	`dbo.PERIOD_STATUS.SEQNO`
	`WHERE     ( dbo.PERIOD_STATUS.LEDGER = 'G' )`

Cost Codes

The Cost Code inputs for each cost and revenue item in the ARGUS EstateMaster DM file must be correctly defined before data can be imported from MYOB Exo, using the following naming convention:

{Branch Number}-{Account Number}-{Sub Account Number}

17.3.2 Connection Settings

These are the settings that the user must define to be able to connect to MYOB Exo data.

Server Name	The SQL Server where the MYOB Exo database is located
SQL Username and Password	The credentials required to connect to the selected server and access the MYOB Exo database.
Database Name	The MYOB Exo database.
	The [Test Connection] button will conduct a test connection to the selected MYOB Exo database to ensure all credentials are correct.

17.3.3 Data being Imported

In summary, this is the data that is being imported from MYOB Exo:

- All transactions in the 'General Ledger Movements' table.

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✓ *
Import Tax Exclusive Data	✓

Option	Fields
Import Data on Cash Basis	✖
Import Data on Accruals Basis	✔

* Tax exclusive data is imported from MYOB Exo, and then tax is applied to it based on the input assumptions for each line item in DM to calculate 'tax inclusive' data.

Data Source

Data is sourced from the following tables and fields:

Table	Fields	Comments on Logic
GLACCS	*NAME*	• The name/description of the parent/header account
GLSUBACCS	*ACCNO*	• The parent/header cost code number
	SUBACCNO	• The child/sub cost code number
	NAME	• The name/description of the child/sub account
GLMOVEMENTS	*ACCNO*	• The account that the transaction is associated with.
	BRANCHNO	• The Branch Number the transaction is associated with (A branch is usually a separate profit centre within the business, e.g. 'Stage 1 Costs', 'Stage 2 Costs', etc)
	AMOUNT	• The transaction amount record in the General Ledger. • These amounts are exclusive of Tax, and therefore if the 'Include Tax' checkbox is selected on the 'Import' tab, tax is applied to it based on the input assumptions for each line item.
	PERIOD_SEQNO	• The reporting period ID for a transaction. • The actual reporting period date is sourced from the Period_Status table.
PERIOD_STATUS	*SEQNO*	• The unique ID for the reporting period. • This is used to match a transaction in the GLMovements table to a specific reporting period.
	PERIODNAME	• The reporting period, displayed in date format mmm-yy (e.g Sep-09)
	STARTDATE	• The start of the reporting period, displayed in date-time format yyyy-mm-dd hh:mm:ss (e.g 2009-09-01 00:00:00.000) • This is the date field that is used to determine which period in the ARGUS EstateMaster DM CashFlow is to be updated. • It is also used for the 'Start Month' filter on the 'Import' tab.
	STOPDATE	• The end of the reporting period, displayed in date-time format yyyy-mm-dd hh:mm:ss (e.g 2009-09-01 00:00:00.000) • This is the date field that is used for the 'End Month' filter on the 'Import' tab.
	LEDGER	• The ledger that the reporting period is related to. • Only periods where the 'Ledger' = "G" are considered

17.4 MYOB AccountRight Premier

ARGUS EstateMaster DM is integrated with the MYOB AccountRight Premier accounting software to allow you import accounting data directly into the cash flow table.

Which Versions of MYOB?

The integration is compatible **AccountRight Premier** (ODBC-based version) up to version 19.

Important Note: The MYOB ODBC Driver is a 32-bit Driver, and will only work with the 32-bit version of ARGUS EstateMaster DM. MYOB has ceased support for their ODBC driver since MYOB AccountRight 2011, as they have transitioned to their API (used by the latest versions of MYOB AccounbtRight), and therefore there is no plan by them to develop a 64-bit ODBC Driver. If you want to use the 64-bit version of ARGUS EstateMaster DM and integrate it with MYOB, you will need to use the latest version of AccountRight Live.

17.4.1 Initial Configuration

Earlier versions of MYOB AccountRight (v19 and earlier) relied on ODBC Drivers to allow other applications to connect to the MYOB Company Files (*.myo). If you use such version of MYOB, before being able to integrate with ARGUS EstateMaster DM, you will need to:

1. Register each MYOB Company File (*myo) for ODBC access. This is a requirement from MYOB, not ARGUS EstateMaster.

2. Ensure that the PC/Server that the ARGUS EstateMaster DM is installed on has the appropriate MYOB ODBC Drivers installed. The installation files for the MYOB ODBC Drivers are usually placed in the MYOB Program Files folder.

3. Ensure that all transactions that need to be imported into ARGUS EstateMaster DM have an appropriate Job Number allocated to them in MYOB.

Registering a Company File for ODBC Access

In MYOB, information about your company's MYOB software license is held within the company data file itself. To connect ARGUS EstateMaster DM to your company file you must update that licence.

In order to connect ARGUS EstateMaster DM to MYOB, please follow the steps below:

1. Take note of the following numbers that will be required during the call:

    a. This Add-on Solution Activation Number: **3,675,725**

    b. *Your* MYOB serial number.

2. Call:

    For Australia: 1 300 555 123 or activate online at
    https://my.myob.com.au/Pages/ODBCActivation.aspx
    Do not enter your Serial Number into the phone when prompted by the voiceover. Select option 6 for "ODBC Direct/Premier Enterprise". You will be required to quote your MYOB Serial Number and the Add-on Solution Activation Number

    For New Zealand: 0800 60 69 62
    Select the option for "Sales Assistance". You will be required to quote the Add-on Solution Activation Number and your MYOB serial number.

    For Hong Kong: 34029888
    Ask the operator to connect an Add-on Solution with ODBC. You will be required to quote the Add-on Solution Activation Number and your MYOB serial number.

For Singapore: 6479 2409   **For Malaysia:** 03 8991 0166   **For areas of Asia outside the above:** +603 8991 0166

> Select the option "to connect an add-on solution to MYOB". You will be required to quote the Add-on Solution activation number and your MYOB serial number.

3. In MYOB, open the company file and login using the Administrator ID and Password. In the case of a multi-user system, you should use the 'Single User' option

4. Once logged in, from the 'Setup' menu select 'Company Information'.
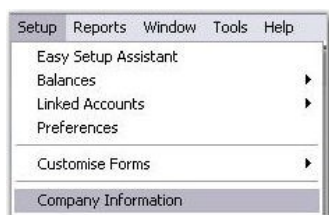
5. Choose the 'License' button at the bottom left of the Company Information screen.

6. Follow the onscreen instructions to update the license information held within the company file.

Allocating Jobs to Transactions

ARGUS EstateMaster DM relies upon 'Job' codes being assigned to Cost and Revenue Transactions in MYOB, in order to filter out transactions for specific Projects. Based on the Project Code that is entered on the ARGUS EstateMaster DM 'Intro' tab, when the application attempts to connect to the selected MYOB Company File, it will begin to search for all Transactions with a matching 'Job' code

To create Jobs in MYOB, this is done through the 'List' menu, where you can build up a list of all your development projects that are being tracked in ARGUS EstateMaster DM and managed via MYOB.
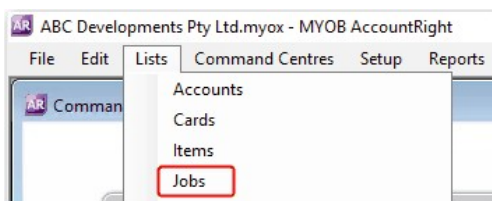
7. Once these steps have been completed, the file will be activated for your Add-on Solution and ARGUS EstateMaster DM will be able to integrate with your MYOB company data file.

17.4.2 Connection Settings

These are the settings that the user must define to be able to connect to MYOB AccountRight Premier data.

MYOB ODBC Driver	Select the MYOB driver to use to make the connection to the MYO file. This list will display all MYOB ODBC Drivers installed on the current PC/Server.
	The user must select the correct driver that matches the version of MYOB that the MYO file is compatible with.
	<u>Please Note:</u> The version number of the ODBC driver is not necessarily the same as the MYOB Software version number.
	Important Note: If this list is empty, and you are certain that the MYOB ODBC Driver has been installed, you are most likely running the 64-bit version of ARGUS EstateMaster DM, which is not compatible with the 32-bit MYOB ODBC Driver. MYOB has ceased support for their ODBC driver since MYOB AccountRight 2011, as they have transitioned to their API (used by the latest versions of MYOB AccounbtRight), and therefore there is no plan by them to develop a 64-bit ODBC Driver. If you want to use the 64-bit version of ARGUS EstateMaster DM and integrate it with MYOB, you will need to use the latest version of AccountRight Live.
File Location (*myo)	Click on [Browse] to browse for and select the MYOB Company File to import data from.
Username	The username of the Company File
Password	The password of the Company File
	The [Test Connection] button will conduct a test connection to the Company File to ensure all credentials are correct.

17.4.3 Data being Imported

In summary, this is the data that is being imported from MYOB AccountRight Premier:

- All 'Money Spent' and 'Money Received' transactions .
- All 'Sale' (i.e Sales Invoices) and 'Purchase' (i.e. Purchase Orders) transactions .

<u>Note:</u> Transactions entered as a General Journal type will not be imported.

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✓
Import Tax Exclusive Data	✓
Import Data on Cash Basis	✓
Import Data on Accruals Basis	✓

Data Source

Data is sourced from the following tables and fields:

Table	Fields	Comments on Logic
Jobs	*JobName*	• These fields are used to ensure the selected MYO file matches the Account Number entered on the Intro sheet for the selected Project.
	JobNumber	
Accounts	*AccountNumber*	• These are essentially the cost codes that the transactions belong to. They need to match the cost codes entered in the CashFlow sheet for the selected Project.
	AccountClassificationID	• This defines what type of Account it is. Certain accounts have their transactions stored in MYOB as a negative number, so before they are imported into ARGUS EstateMaster DM they may need to be converted to a positive. ○ For MoneyReceived and Sales, if the *AccountClassificationID* = "A" (Assets), "COS" (Cost of Sales) or "EXP" (Expenses) or "OEXP" (Other Expenses), the amounts need to have their polarity reversed. ○ For MoneySpent and Purchases, if the *AccountClassificationID* = "L" (Liabilities), "I" (Income) or "OI" (Other Income), the amounts need to have their polarity reversed.
MoneyReceived	*TransactionDate*	• The *TransactionDate* value is used for both Cash and Accrual based data imports
MoneyReceivedLines	*TaxExclusiveAmount*	• The data from these two fields are used when the user has selected to either include tax on costs or revenues or not in the 'Import' tab.
	TaxInclusiveAmount	
	AccountID	• This links the transaction back to the relevant Account Number
	JobID	• This links the transaction back to the relevant Job
MoneySpent	*TransactionDate*	• The *TransactionDate* value is used for both Cash and Accrual based data imports
MoneySpentLines	*TaxExclusiveAmount*	• The data from these two fields are used when the user has selected to either include tax on costs or revenues or not in the 'Import' tab.
	TaxInclusiveAmount	
	AccountID	• This links the transaction back to the relevant Account Number
	JobID	• This links the transaction back to the relevant Job
Sales	*InvoiceDate*	• The transaction date on a Cash basis is determined by the following logic: If *TotalPaid* > 0 and *OutstandingBalance* = 0 then *InvoiceDate* + *DaysTillPaid*
	DaysTillPaid	
	TotalPaid	• The transaction date on an Accrual basis is determined by the following logic: *InvoiceDate*
	OutstandingBalance	
SalesLines	*TaxExclusiveAmount*	• The data from these two fields are used when the user has selected to either include tax on costs or revenues or not in the 'Import' tab.
	TaxInclusiveAmount	

Table	Fields	Comments on Logic
Purchases	*PurchaseDate* *DaysTillPaid* *TotalPaid* *OutstandingBalance*	• The transaction date on a Cash basis is determined by the following logic: If *TotalPaid* > 0 and *OutstandingBalance* = 0 then *PurchaseDate* + *DaysTillPaid* • The transaction date on an Accrual basis is determined by the following logic: *PurchaseDate*
PurchaseLines	*TaxExclusiveAmount* *TaxInclusiveAmount*	• The data from these two fields are used when the user has selected to either include tax on costs or revenues or not in the 'Import' tab.
JobJournalRecords	*JobID*	• This links the Sales and Purchase transactions back to the relevant Job
	AccountID	• This links the Sales and Purchase transactions back to the relevant *AccountNumber*
	SalePurchaseLineID	• This links the transaction back to the relevant SalesLines or PurcahseLines record.

17.5 MYOB AccountRight Live

ARGUS EstateMaster DM is integrated with the MYOB AccountRight Live accounting software to allow you import accounting data directly into the cash flow table.

Which Versions of MYOB?

The integration is compatible **AccountRight Live** (Cloud API-based version) versions using the API version 2.

17.5.1 Initial Configuration

Before you can integrate your MYOB Live with ARGUS EstateMaster DM, you will need to:

1. Install the Add-Connector (API Service)

2. Ensure that all transactions that need to be imported into ARGUS EstateMaster DM have an appropriate Job Number allocated to them in MYOB.

Install the Add-On Connector

MYOB AccountRight Live is a hybrid application, where users can operate it locally or on the cloud and relies on a common API (application programming interface) to allow other applications to connect to the MYOB Company Files, regardless where they are hosted.

If you use 'PC' or 'Server' Installation of MYOB AccountRight Live, before being able to integrate with ARGUS EstateMaster DM, you will need to ensure that the 'MYOB Add-On Connector' is installed and started on the machine that is hosting the Company Files. The Add-On Connector is installed with AccountRight and can be started by going to the MYOB>Add-Ons folder in the Windows Start menu. You only need to do this once - the next time you start Windows, the Add-On Connector will start automatically and appear in the Windows Taskbar
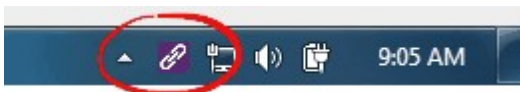
If you right-click the Add-On Connector icon and select 'Status: Running', a pop-up will appear showing the URL and the Library location where all the Company Files are hosted.
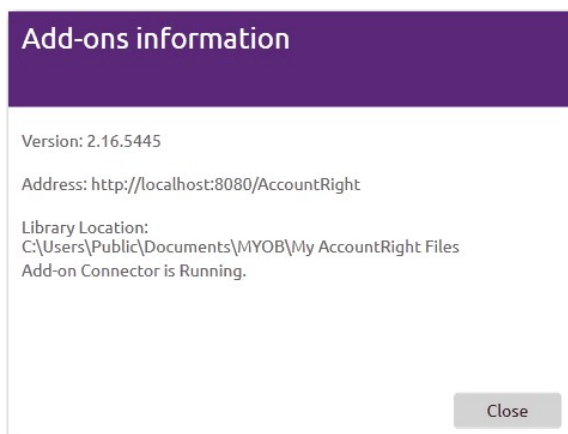
Please Note: Some of the older versions of AccountRight Live required you to manually install the Add-On Connector (previously known as the 'API Service'). To do so you can find and run the API installer executable from C:\Program Files (x86)\MYOB\AccountRight\API_Installer.

Allocating Jobs to Transactions

ARGUS EstateMaster DM relies upon 'Job' codes being assigned to Cost and Revenue Transactions in MYOB, in order to filter out transactions for specific Projects. Based on the Project Code that is entered on the ARGUS EstateMaster DM 'Intro' tab, when the application attempts to connect to the selected MYOB Company File, it will begin to search for all Transactions with a matching 'Job' code

To create Jobs in MYOB, this is done through the 'List' menu, where you can build up a list of all your development projects that are being tracked in ARGUS EstateMaster DM and managed via MYOB.

17.5.2 Connection Settings

These are the settings that the user must define to be able to connect to MYOB AccountRight Live data.

Installation Type	MYOB AccountRight Live is a hybrid product, this means that the data can reside either on a user's computer or it can live in the MYOB Cloud, but uses a common API to connect to the data.

Select the type of MYOB AccountRight Live installation type you have:

- Cloud: Your Company Files reside in the MYOB Cloud.

- Local: You have a 'Client' (or PC) installation and your Company Files are stored on your local machine.

- Server: You have a 'Server' installation and host your Company Files over a network. For this option you must indicate the IP Address of the server and Port number (default usually is 8080) for where the MYOB Server installation is located.

Company File	Click on [Browse] to browse for and select the MYOB Company File to import data from.
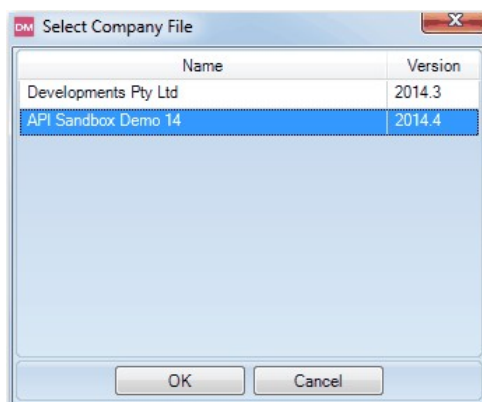
At this point, you also may be prompted to log onto MYOB Live to authenticate a connection.
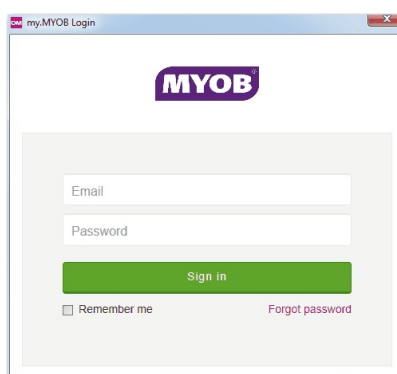
Username	The username of the Company File
Password	The password of the Company File

The [Test Connection] button will conduct a test connection to the Company File to ensure all credentials are correct.

17.5.3 Data being Imported

The AccountRight Live integration uses the same data logic as the AccountRight Premier integration.

Please refer to this topic for more information.

17.6 MRI JobCost

ARGUS EstateMaster DM is integrated with the MRI JobCost software to allow you to import accounting data directly into the cash flow table.

17.6.1 Initial Configuration

Before you can integrate your MRI Job Cost system with ARGUS EstateMaster DM, you will need to:

1. Have MRI develop a custom API Endpoint for your organisation that will be retrieving the required data.

2. Enter in Cost Codes against each line in the ARGUS EstateMaster DM CashFlow in the correct format.

Custom API

Before you can use this feature, your MRI JobCost system will need to be custom configured by MRI with a custom 'GET' API endpoint to return the following data fields:

```
{
  "odata.metadata":"https://yourcompany.saas.mrisoftware.com/mriapiservices/api.asp?$api=BRKFLD_S-
PMJC_GET_JCBUDGETS&$metadata#MRI.brkfld_s-pmjc_get_jcbudgets-container/brkfld_s-
pmjc_get_jcbudgets","nextLink":"https://yourcompany.saas.mrisoftware.com/mriapiservices/api.asp?%24API=BRKFLD_S-
PMJC_GET_JCBUDGETS&LASTDATE=2016-12-01&%24FORMAT=JSON&%24top=300&%24skip=301","value":[
    {
      "JOB_NUMBER":"69039","ENTITY_ID":"MB8848","COST_CODE":"@","TRANSACTION_DATE":"2016-12-
15T00:00:00","AMT_INC_TAX":"-100.00","AMT_EXC_TAX":"-100.00"
    },{
      "JOB_NUMBER":"69039","ENTITY_ID":"MB8848","COST_CODE":"0102","TRANSACTION_DATE":"2017-01-
06T00:00:00","AMT_INC_TAX":"100.00","AMT_EXC_TAX":"100.00"
    },{
```

- **JOB_NUMBER** (String): This is unique code/number for the development project.
- **ENTITY_ID** (String): The Entity ID that the expense has been incurred against.
- **COST_CODE** (String): The cost/revenue account code the expense has been coded against (sourced from the ...
- **TRANSACTION_DATE** (DateTime): The date that the cost/revenue transaction *actually* occurred (cost paid, rev...
- **AMT_INC_TAX** (Decimal): The cost/revenue amount including tax.
- **AMT_EXC_TAX** (Decimal): The cost/revenue amount excluding tax.

Cost Codes

The Cost Code inputs for each cost and revenue item in the ARGUS EstateMaster DM file must be correctly defined before data can be imported from MRI, using the following naming convention:

ENTITY_ID | COST_CODE

Code	Stage	Description
4000		**CONSTRUCTION COSTS**
ENT01|4001	-	Car Parking
ENT01|4002	-	Construction
ENT01|4003	-	Mechanical & Electrical Costs
ENT01|4004	-	Local muncipality fees

17.6.1.1 API Specification

Get Job Cost Actuals (BRKFLD_S-PMJC_GET_JCBUDGETS)

- This API will query JOURNAL, GHIS, and HIST to obtain actual costs that relate to a Job Cost Job.

- The API caller will have to specify the LASTDATE parameter.

- It's assumed at this time that ARGUS EstateMaster DM will only be calling the database to request new data.

Request Parameters

Parameter	Description
LASTDATE	Date the record w as added or last updated
	(>=)HIST.LASTDATE|JOURNAL.LASTDATE|GHIS.LASTDATE
ENTITYID	The Entity ID the expense has been incurred against
	HIST.ENITTYID|JOURNAL.ENITTYID|GHIS.ENTITYID
JOBCODE	The Job Code the expense has been coded against
	HIST.JOBCODE|JOURNAL.JOBCODE|GHIS.JOBCODE
JC_COSTODE	The Cost Code the expense has been coded against
	HIST.JC_COSTCODE|JOURNAL.JC_COSTCODE|GHIS.JC_COSTCODE
PERIOD	The Period the expense has been recorded against for invoicing or the period the a Journal Entry has been recorded against
	HIST.EXPPED|JOURNAL.PERIOD|GHIS.PERIOD
ENDDATE	The maximum date to search through related to the Last Update
	(<=) HIST.LASTDATE|JOURNAL.LASTDATE|GHIS.LASTDATE

API Queries

Query 1

```
SELECT HIST.JOBCODE AS JobNumber,
  HIST.ENTITYID AS Entity_ID,
  HIST.JC_COSTCODE AS Cost_Code,
  SCHK.CHECKDT AS CHECK_DATE,
  HIST.ITEMAMT+HIST.ATAXAMT AS AMOUNT_INCLUDING_TAX,
  HIST.ITEMAMT AS AMOUNT_EXCLUDING_TAX
    FROM HIST,SCHK
  WHERE IF{[LASTDATE]<>NULL,HIST.LASTDATE>=QRYDATE{[LASTDATE]},1=2}
  IF{[ENTITYID]<>NULL, AND HIST.ENTITYID='[ENTITYID]',}
  IF{[JOBCODE]<>NULL, AND HIST.JOBCODE ='[JOBCODE]',}
  IF{[JC_COSTCODE]<>NULL, AND HIST.JC_COSTCODE='[COSTCODE]',}
  IF{[PERIOD]<>NULL, AND HIST.EXPPED='[PERIOD]',}
  IF{[ENDDATE]<>NULL, AND HIST.LASTDATE<=QRYDATE{[ENDDATE]},}

  AND JC_PHASECODE IS NOT NULL AND TAXITEM='N' AND (HIST.CHECKNO IS NOT NULL AND HIST.CHECKNO
  !='DELETED') AND SCHK.CHECKNO IS NOT NULL AND SCHK.CHECKNO=HIST.CHECKNO AND
  SCHK.VENDID=HIST.VENDID
  AND SCHK.CHECKPD=HIST.CHECKPD AND SCHK.ENTITYID=HIST.ENTITYID
```

Query 2

```
SELECT JOURNAL.JOBCODE AS JobNumber,
  JOURNAL.ENTITYID AS Entity_ID,
  JOURNAL.JC_COSTCODE AS Cost_Code,
  JOURNAL.ENTRDATE AS CHECK_DATE,
  JOURNAL.AMT AS AMOUNT_INCLUDING_TAX,
  CASE WHEN ENTITY.ATAXACCT=JOURNAL.ACCTNUM THEN
  0 ELSE JOURNAL.AMT END AS AMOUNT_EXCLUDING_TAX
  FROM JOURNAL,ENTITY
  WHERE IF{[LASTDATE]<>NULL,JOURNAL.LASTDATE>=QRYDATE{[LASTDATE]},1=2}
  IF{[ENTITYID]<>NULL,AND JOURNAL.ENTITYID='[ENTITYID]',}
  IF{[JOBCODE]<>NULL, AND JOURNAL.JOBCODE ='[JOBCODE]',}
  IF{[JC_COSTCODE]<>NULL, AND JOURNAL.JC_COSTCODE='[COSTCODE]',}
  IF{[PERIOD]<>NULL, AND JOURNAL.PEROID='[PERIOD]',}
  IF{[ENDDATE]<>NULL, AND JOURNAL.LASTDATE<=QRYDATE{[ENDDATE]},}
  AND SOURCE NOT IN('AP', 'CM', 'AR', 'RM')AND JOURNAL.ACCTNUM NOT IN ('BR14411')AND
```

JOURNAL.ENTITYID=ENTITY.ENTITYID AND JOURNAL.JC_PHASECODE IS NOT NULL AND
JOURNAL.STATUS='P'

Query 3   SELECT GHIS.JOBCODE AS JobNumber,
GHIS.ENTITYID AS Entity_ID,
GHIS.JC_COSTCODE AS Cost_Code,
GHIS.ENTRDATE AS CHECK_DATE,
GHIS.AMT AS AMOUNT_INCLUDING_TAX,
CASE WHEN ENTITY.ATAXACCT=GHIS.ACCTNUM THEN
0 ELSE GHIS.AMT END AS AMOUNT_EXCLUDING_TAX
FROM GHIS,ENTITY
WHERE IF{[LASTDATE]<>NULL,GHIS.LASTDATE>=QRYDATE{[LASTDATE]},1=2}
IF{[ENTITYID]<>NULL,AND GHIS.ENTITYID='[ENTITYID]',}
IF{[JOBCODE]<>NULL, AND GHIS.JOBCODE ='[JOBCODE]',}
IF{[JC_COSTCODE]<>NULL, AND GHIS.JC_COSTCODE='[COSTCODE]',}
IF{[PERIOD]<>NULL, AND GHIS.PEROID='[PERIOD]',}
IF{[ENDDATE]<>NULL, AND GHIS.LASTDATE<=QRYDATE{[ENDDATE]},}
AND SOURCE NOT IN('AP', 'CM', 'AR', 'RM') AND GHIS.ACCTNUM NOT IN ('BR14411') AND
GHIS.ENTITYID=ENTITY.ENTITYID AND GHIS.JC_PHASECODE IS NOT NULL AND GHIS.BALFOR='N'

17.6.2 Connection Settings

These are the settings that the user must define to be able to connect to MRI JobCost data.
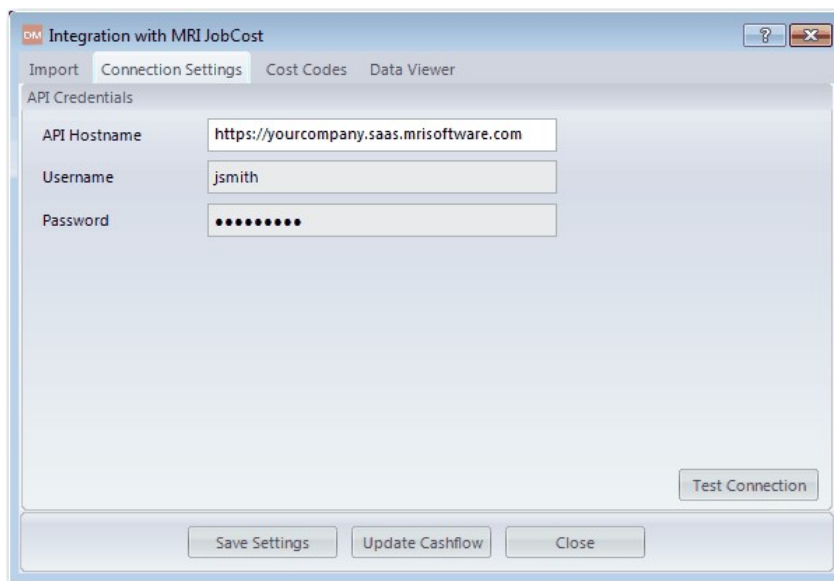
API Hostname	The URL where the custom MRI API has been configured for your company.
	This will usually be in the format of **https://*companyname*.saas.mrisoftware.com**
Username	The username to connect to the API, provided by MRI.
Password	The password associated with the username to connect to the API.

17.6.3 Data being Imported

In summary, this is the data that is being imported from MRI JobCost:

- Actual costs data that relate to a Job Cost Job from JOURNAL, GHIS, and HIST tables.

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✔
Import Tax Exclusive Data	✔
Import Data on Cash Basis	✔
Import Data on Accruals Basis	✘

Data Source

Refer to Queries in the API Specification to see where the data is being retrieved from

17.7 Workbench

ARGUS EstateMaster DM is integrated with the Workbench Project Costing software to allow you to import accounting data directly into the cash flow table.

17.7.1 Initial Configuration

Before you can integrate your Workbench Project Costing system with ARGUS EstateMaster DM, you will need to:

1. Set the Project 'Account Code' on the Intro sheet of the ARGUS EstateMaster DM file in the correct format.

2. Enter in Cost Codes against each line in the ARGUS EstateMaster DM CashFlow in the correct format.

Project Account Code

The Project 'Account Code' that is entered on the 'Intro' sheet, must use the following naming convention:

{The First 4 Characters of the Workbench 'JobCode'}

Cost Codes

The Cost Code inputs for each cost and revenue item in the ARGUS EstateMaster DM file must be correctly defined before data can be imported from Workbench, using the following naming convention:

{The Last 6 Characters of the Workbench 'JobCode'}.{Workbench 'ActivityCode'}

17.7.2 Connection Settings

These are the settings that the user must define to be able to connect to Workbench data.

Server Name	The SQL Server where the Workbench database is located
SQL Username and Password	The credentials required to connect to the selected server and access the Workbench database.
Database Name	The Workbench database.
	The [Test Connection] button will conduct a test connection to the selected Workbench database to ensure all credentials are correct.

17.7.3 Data being Imported

In summary, this is the data that is being imported from Workbench:

- Transactions that exist in the Workbench 'Forecasts' database table.
- 'Current Budget' for each Job Code / Activity Code.

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✗ *
Import Tax Exclusive Data	✓
Import Data on Cash Basis	✓
Import Data on Accruals Basis	✗

* Tax exclusive data is imported from Workbench, and the input assumptioins must be entered on the same basis. The user will be alerted if any cost or revenue line item is not set to 'N' for the Tax assumption.

Data Source

Data is sourced from the following tables and fields:

Table	Fields	Comments on Logic
Forecasts	*JobCode*	• The unique Job code for the transaction, w hich w ould usually signify a Project or a Stage in a Project.

Table	Fields	Comments on Logic
		• The last 6 characters of this code are used, in conjunction with 'ActivityCode', to map it against a line item within the ARGUS EstateMaster DM CashFlow.
	ActivityCode	• The unique Activity code for the transaction, derived from the Chart of Accounts. • This code is used, in conjunction with 'JobCode', to map it against a line item within the ARGUS EstateMaster DM CashFlow.
	YearNo	• The calendar year the transaction has been reported against.
	PeriodNo	• The calendar month, displayed as a number (e.g March = '3') the transaction has been reported against.
	OriginalBudgetCost	• The Original Budget set in Workbench for that particular Job Code / Activity Code • This amount, added to the 'AprocedVariations' amount, equates to the 'Current Budget'
	ApprovedVariations	• Any Approved Variations set in Workbench for that particular Job Code / Activity Code. • This amount, added to the 'OriginalBudgetCost' amount, equates to the 'Current Budget'
	ActualCost	• This is the cumulative actual cost to date, for a give Year No and Period No. • The actuals for a specific month are derived by calculating the difference between the current month and the previous month. • All Actuals in Workbench are assumed to by exc Tax, and will be imported on that basis. Therefore user will be alerted if any cost or revenue line item is not set to 'N' for the Tax assumption.

Updating the Manual Budget

In addition to importing actuals for each line item from Workbench into ARGUS EstateMaster DM, the integration also imports the 'Current Budget' amount for each line item, and updates the 'Manual Budget' column on the CashFlow sheet with this data.

Current Budget data from Workbench imported here

Data Validation

There is an additional validation check with the integration with Workbech, that will check the following after the data has been imported:

• If the 'Total Actual Cost to Date' amount in Workbench does not match what is reported for the same in ARGUS EstateMaster DM

- If the 'Total Current Budget' amount in Workbench does not match what is reported in the 'Manual Budget' in ARGUS EstateMaster DM
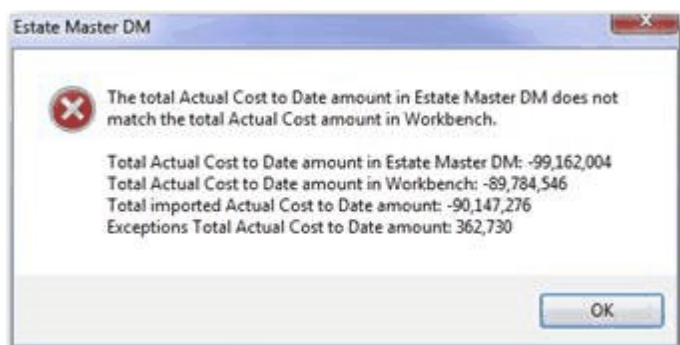
17.8 Xero

ARGUS EstateMaster DM is integrated with the Xero accounting software to allow you to import accounting data directly into the cash flow table.

17.8.1 Initial Configuration

Before you can integrate your Xero with ARGUS EstateMaster DM, you will need to decide how you are using Xero to manage multiple development Projects, as this will impact how ARGUS EstateMaster DM will import data from it:

- Do you have **1 single Xero Organisation** for all your projects? This only incurs a single Xero subscription fee, however you will need to create 'Tracking Categories' in your Xero Organisation so that cost and revenue transactions can be assigned to specific projects. If an 'Account Code' is then specified in the ARGUS EstateMaster DM file, then all matched items get filtered out that don't have a Tracking Category that has the same value as the Account Code.

- Do you have a **multiple Xero Organisaitons**, being one for each project? No further configuration in Xero is required. By ensuring that the 'Account Code' in the ARGUS EstateMaster DM file is blank, it will not attempt to filter transactions for a specific Tracking Category.

Create a Custom Tracking Category

If you are using a single Xero Organisation to manage the accounts for multiple development projects, then you will need to utilise Tracking Categories to allocate transactions to different projects in Xero.

Tracking Categories are administered in your Xero Organisation Settings. When creating a Tracking Category to be used for this integration, the Category Name can be anything (e.g. Project Code), however the list of Category Options must reflect the unique Project Accounts Codes that are assigned to each project, and is entered in the 'Account Code' field for each project's ARGUS EstateMaster DM file.

On individual transactions, a new input column will appear for your custom Tracking Category. Selecting an option from the list for that field will then ensure that the transaction will be imported into a ARGUS EstateMaster DM file that matches the same Project Account Code.

Cost Code Inclusions

In the Cost Code tab, a new section (enabled for the Xero integration only) allows you to define Cost Codes that are allocated to non Expense or Revenue Account Types (i.e. Equity, Assets or Liabilities) that you want included in the import process.

17.8.2 Connection Settings

Since Xero is a cloud application, it utilises the OAuth online authentication protocal to allow the user to securely log into their account. The user is prompted to log into their Xero account via this process and select the Organisation they want to import data from when they either:

1. Click on the [Connect] button on the Connection Settings tab, or

2. Initiate an import request, via clicking on the [Update CashFlows] button on the Integration form, or clicking on the [Accounts Data] button on the ribbon menu.

Online Authentication

The first login screen prompts the user for their Xero email login and password.

The second screen will then prompt the user to select what Xero 'Organisation' to import data from. Clicking on [Allow access] will then give ARGUS EstateMaster DM access to the Xero data for a temporary period.
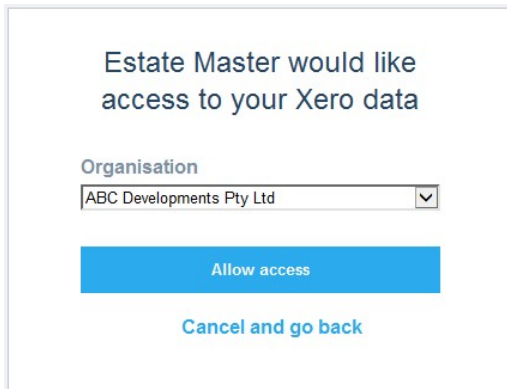
The API acts on behalf of the user that authorised the connection. As the API has rights to do everything a Standard user can do, that user has to have Standard or Adviser level rights. Read-only, Invoice Only, and Cashbook Client roles don't have the ability to connect the API.

17.8.3 Data being Imported

In summary, this is the data that is being imported from Xero:

- 'Authorised' Payments that are of type:
    - AccountsPayable
    - AccountsReceivable
    - AccountsPayableCredit
    - AccountsReceivableCredit
    - AccountsPayableOverpayment
    - AccountsReceivableOverpayment
    - AccountsPayablePrepayment
    - AccountsReceivablePrepayment
- Expense and Revenue Journal records that are of type:
    - ManualJournal
    - ReceiveMoneyBankTransaction
    - SpendMoneyBankTransaction
- Other Equity, Current Asset and Current Liability transactions that have been specifically included in the Cost Code Inclusions list.

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✓
Import Tax Exclusive Data	✓
Import Data on Cash Basis	✓
Import Data on Accruals Basis	✓

Data Source

Data is sourced from the following tables and fields:

Table	Fields	Comments on Logic
Payments	*Invoice*	• Only considers transactions that have an Invoice associated with it.
	InvoiceID	• The ID of the Invoice, so the Line Items can be looked up to retrieve the detail data.

	PaymentType	• The type of payment (e.g. Acc Payable, Acc Receivable, etc)
		• Only considers transactions that have a Payment Type of:
		  o For Invoices:
		    ▪ AccountsPayable
		    ▪ AccountsReceivable
		  o For Credit Notes:
		    ▪ AccountsPayableCredit
		    ▪ AccountsReceivableCredit
		  o For Over Payments:
		    ▪ AccountsPayableOverpayment
		    ▪ AccountsReceivableOverpayment
		  o For Prepayments:
		    ▪ AccountsPayablePrepayment
		    ▪ AccountsReceivablePrepayment

	Status	• Only considers transactions that have a status of 'Authorized'
	Account > AccountID	• The Account that payment is allocated to. • The AccountID is used to retrieve the unique Cost Code used for that transaction.
	Date	• The transaction date.
Accounts	*Class*	• Only considers transactions that are associated with an Account Class that is 'Expense' and 'Revenue' • Includes anything entered in the Cost Code Inclusions (i.e.Equity, Asset or Liability classes) Account Types
	Status	• Only considers transactions that are associated with an Account Status that is 'Active'
Invoices **Credit Notes** **Overpayments** **Prepayments**	*Line Items*	
	TrackingCategory	• For each of the above supported Payment Types, the Line Items are checked for their Tracking Category (to filter transactions for a specific project).
	LineAmount	• Transaction amount for that lie item. • If there are multiple transactions for different tracking categories on one payment, there is logic that works out the proportion to calculate the correct amount, inc and exc tax. • If there are multiple payments, there is logic that works out the proportion to calculate the correct tax associated with each part-payment
	TaxAmount	• The total amount of tax

Journals	*SourceType*	• For Cash Basis
		  o Only considers journal entries that have a Source Type of for Cash Basis
		    ▪ ManualJournal
		    ▪ ReceiveMoneyBankTransaction

Table	Fields	Comments on Logic
		▪ SpendMoneyBankTransaction • For Accrual Basis 　○ All Source Types are considered.
	JournalDate	• The transaction date.
	Line Items	
	TrackingCategory	• For each of the above supported Source Types, the Line Items are checked for their Tracking Category (to filter transactions for a specific project).
	AccountType	• If the Journal Account Type = Revenue, the -ve amounts are reversed to +ve amounts.
	AccountCode	• The unique Cost Code used for that transaction.
	Date	• The transaction date.
	Net Amount	• Transaction amount exc tax
	Gross Amount	• Transaction amount inc tax
	TaxAmount	• The total amount of tax

Part XVII

18   Appendix 2 - Sales CRM System Integrations

18.1   Presence Lot Manager

ARGUS EstateMaster DM is integrated with the [Presence Systems' Lot Manager](#) contract management software to allow you to import sales data data directly into the cash flow table.

18.1.1   Initial Configuration

Before you can use this feature, your Lot Manager database will need to be custom configured.

Custom SQL View

To extract the data required to populate the ARGUS EstateMaster DM CashFlow form the Lot Manager database, the following custom View has been developed. It will need to be added to your Lot Manager database. [How to Create Views](#)

View Name	dbo.vw EstateMaster
SQL Query	(see below)

```sql
SELECT dbo.tblcontracts.ctr_fileid        AS ID,
       dbo.tblcontracts.ctr_estateid      AS ProjectNo,
       dbo.tblestates.est_name            AS ProjectName,
       dbo.tblcontracts.ctr_lotnumber     AS LotNo,
       dbo.tblcontracts.ctr_stageid       AS Stage,
       dbo.tblcontracts.ctr_substage      AS SubStage,
       CASE dbo.tblcontractstatushistory.csh_contractstatusid
         WHEN 1 THEN 'C'
         WHEN 2 THEN 'C'
         WHEN 3 THEN 'C'
         WHEN 5 THEN 'A'
         WHEN 6 THEN 'A'
         WHEN 7 THEN 'A'
         WHEN 8 THEN 'A'
       END                                AS Status,
       dbo.tblcontracts.ctr_area          AS LotArea,
       dbo.tblcontracts.ctr_originalprice AS OriginalPrice,
       CASE

WHEN dbo.tblcontractstatushistory.csh_contractstatusid IN ( 1, 2, 3 )
       THEN
         ctr_actualprice
         ELSE ctr_originalprice
       END                                AS SalePriceIncGST,
       CASE

WHEN dbo.tblcontractstatushistory.csh_contractstatusid IN ( 1, 2, 3 )
       THEN
         dbo.tblcontracts.ctr_gst
         ELSE dbo.tblcontracts.ctr_originalprice / 11
       END                                AS GST,
       CASE
         WHEN dbo.tblcontracts.ctr_actualsettlement IS NOT NULL THEN
         dbo.tblcontracts.ctr_actualsettlement
         WHEN dbo.tblcontracts.ctr_anticipatedsettlement IS NULL THEN
         Dateadd(d, 21, stg_ctdate)
         ELSE dbo.tblcontracts.ctr_anticipatedsettlement
       END                                AS SettlementDate
FROM   dbo.tblcontracts
       INNER JOIN dbo.tblestates
               ON dbo.tblcontracts.ctr_estateid = dbo.tblestates.est_id
       INNER JOIN dbo.tblcontractstatushistory
```

View Name	dbo.vw EstateMaster
| | ```
                    ON dbo.tblcontracts.ctr_fileid =
                        dbo.tblcontractstatushistory.csh_fileid
            INNER JOIN dbo.tblstages

ON dbo.tblcontracts.ctr_estateid = dbo.tblstages.stg_estateid

AND dbo.tblcontracts.ctr_stageid = dbo.tblstages.stg_stageid
                AND ( dbo.tblcontracts.ctr_substage IS NULL
                    AND dbo.tblstages.stg_substage IS NULL
                    OR dbo.tblcontracts.ctr_substage = ''
                        AND dbo.tblstages.stg_substage = ''
                    OR dbo.tblcontracts.ctr_substage IS NULL
                        AND dbo.tblstages.stg_substage = ''
                    OR dbo.tblcontracts.ctr_substage = ''
                        AND dbo.tblstages.stg_substage IS NULL
                    OR dbo.tblcontracts.ctr_substage =
                    dbo.tblstages.stg_substage )
WHERE  ( dbo.tblcontractstatushistory.csh_contractstatusid <> 4 )
        AND ( dbo.tblcontractstatushistory.csh_enddate IS NULL )
``` |

SQL Login and User

To enable connectivity to the Lot Manager database and selecting data from the above View, a SQL Login will need to be created and attached to a User with the same name in the Lot Manager database. How to Create a Login

- Username: cms

- Password: cms2

To ensure security of data, make sure the User has only been granted 'Select' permissions on the above View.

18.1.2 Connection Settings

These are the settings that the user must define to be able to connect to Lot Manager data.

Server Name	The SQL Server where the Lot Manager database is located
SQL Username and Password	The credentials required to connect to the selected server and access the Lot Manager database.
Database Name	The Lot Manager database.

The [Test Connection] button will conduct a test connection to the selected Lot Manager database to ensure all credentials are correct.

18.1.3 Data being Imported

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✓
Import Tax Exclusive Data	✓
Import Data by Lot/Unit	✓
Import Data by Stage-Status	✓

Data Source

Data is sourced from the following tables and fields:

View Column	Lot Manager Data Source		Additional Logic
	Table	Column	
ID	*tblContracts*	*ctr_FileID*	
ProjectNo	*tblContracts*	*ctr_EstateID*	
ProjectName	*tblEstates*	*est_Name*	
LotNo	*tblContracts*	*ctr_LotNumber*	
Stage	*tblContracts*	*ctr_StageID*	
SubStage	*tblContracts*	*ctr_SubStage*	
Status	*tblContractStatusHistory*	*csh_ContractStatusID*	• If value = 1 (Conditional), then 'C' • If value = 2 (Unconditional), then 'C' • If value = 3 (Settled), then 'C' • If value = 4 (Fallen Over), then ignore this Lot • If value = 5 (Available Stock), then 'A' • If value = 6 (Not For Sale), then 'A' • If value = 7 (Subject To Dealing), then 'A' • If value = 8 (spare), then 'A'
LotArea	*tblContracts*	*ctr_Area*	
OriginalPrice	*tblContracts*	*ctr_OriginalPrice*	
SalePriceIncGST	*tblContracts*		• If 'Status' = 'A', then Original Price (*ctr_OriginalPrice*) • If 'Status' = 'C', then Actual Price (*ctr_ActualPrice*)
GST	*tblContracts*		• If 'Status' = 'A', then Original Price divided by 11 (*ctr_OriginalPrice / 11*) • If 'Status' = 'C', then GST Amount (*ctr_GST*)
SettlementDate	*tblContracts* and *tblStages*		• If *ctr_ActualSettlement* <> 0, then Actual Settlement (*ctr_ActualSettlement*) • If *ctr_AnticipatedSettlement* <> 0, Anticipated Settlement (*ctr_AnticipatedSettlement*)

			• If *ctr_AnticipatedSettlement* = 0, then 21 days from Stage Titles Issued Date (stg_CTDate + 21)
Where:			
tblContractStatusHistory.csh_ContractStatusID <> 4 (Fallen Over)			
AND			
tblContractStatusHistory.csh_enddate is null			

18.2 Salesforce

ARGUS EstateMaster DM is integrated with the Salesforce.com Cloud CRM platform to allow you to import sales data data directly into the cash flow table.

18.2.1 Initial Configuration

Before you can use this feature, your Salesforce.com instance will need to be custom configured.

Custom Tables and Fields

Salesforce.com is a highly configurable and customisable Customer Relationship Management (CRM) Cloud solution built around core Sales, Service, Data and Marketing capabilities.

To use Salesforce.com for tracking real estate development transactions, either:

- A built-for-purpose app needs to be installed, or

- Custom modifications will need to be undertaken.

Both options require additional custom Tables (known as 'Objects' in Salesforce) and Fields to be added to your instance, to ensure the right data can be captured.

Here is a simple example of how customisations can be implemented in Salesforce.com to track the sales of residential lots for different development projects. It demonstrates a custom Table called 'Projects' that contains related items from another custom Table called 'Lots'. There are certain conditions on what data these Tables and Fields need to contain for this integration, which are detailed in the following 'Custom Report' requirements

Custom Report

The integration relies on data generated by a custom Report developed in your Salesforce.com instance. The custom report should contain the following information:

Project Number (Optional)   The unique number/code for the development project.

Note: If this data is not available in the report or it is not mapped: it will assume that the report only contains data for a single project (i.e. as a Project filter applied on the report itself), and therefore the import process will attempt to import all available data in the report into ARGUS EstateMaster DM.

Lot/Unit Number (Mandatory)   The unique number for the Lot/Unit being sold.

Lot/Unit Area (Mandatory)   The spatial area of the Lot/Unit.

- If the stock is **vacant land**, then this should represent the **land size.**

- For **other types of inventory**, it should represent the **saleable size of the dwelling/house/unit/office**, etc.

Unit of Measurement (Optional)   The unit of measurement that the above spatial area is represented in. It must be in an accepted format or abbreviation, such as:

- Sq M, M2, Square Metre(s)

- Sq Ft, Ft2, Square Feet, Square Foot

- Sq Yrd, Yd2, Square Yard(s)

- Sq Km, Km2, Square Kilometre(s)

- Sq Mi, Mi2, Square Mile(s)

- Ac, Acre(s)

- Ha, Hectare(s)

* Includes British and US spelling variations

If the unit of measurement differs from what has been set in the 'Sales Revenue' section of the input assumptions, the 'Lot/Unit Area' values will be converted accordingly before being imported into ARGUS EstateMaster DM.

SALES REVENUE	Area (SqFt)
Residential Revenue	170,070
Office Value	16,899
Retail Value	11,582
Parking	

Note: If this data is not available in the report or it is not mapped, then no area conversions will be conducted, and the 'Lot/Unit Area' values will be imported into ARGUS EstateMaster DM as-is.

Stage (Mandatory)   The stage/phase the Lot/Unit is allocated to in the project.

Status (Mandatory)   The sale status of the Lot/Unit. It must be represented by one of the following codes::

- **A**: To indicate if a Lot/Unit is still 'available' for sale

- **C**: To indicate if a Lot/Unit is 'contracted' (in the process of being sold) and therefore no longer available for sale.

Hint: To return either 'A' or 'C' for the Status, a custom Formula Field may need to be configured in your Salesforce.com to pre-calculate this before it is added to the report.

Transaction Date (Mandatory)   The settlement date of the Lot/Unit. You will need to ensure that:

- For '**Available**' sales, this should represent the **anticipated/forecasted** settlement date

- For '**Contracted**' sales, this should represent the **actual** settlement date

Sales Price inc Tax (Mandatory)　　The gross sales price of the Lot/Unit including any applicable tax.

- For '**Available**' sales, this should represent the **list/anticipated/forecasted** sale price

- For **'Contracted'** sales, this should represent the **actual/contracted/agreed** sale price

Tax (Optional)　　The sales tax portion of the sales price, represented as an amount.

Note: If this data is not available in the report or it is not mapped, it will assume that the Sales Price value being returned by the report excludes Tax (as there is no mechanism to accurately calculate both a Tax Inclusive and Exclusive amount, and the equivalent percentage tax rate). This is irrespective if the 'Include Tax' option is enabled on the 'Import' tab.

Currency (Optional)　　The currency ISO Code that the Sales Price and Tax values are reported in (e.g. AUD, USD, GBP, AED, etc). If your Salesforce.com instance has multi-currency support enabled, this field should be available on all standard and custom objects (tables)

This is used for an extra layer of data validation; there is no actual currency exchange rate conversion of the data. Therefore all Lot/Unit records must have the same currency setting, otherwise the validation process will fail and no data will be imported into ARGUS EstateMaster DM.

Note: If this data is not available in the report or it is not mapped, then it is assumed that all Sales Price and Tax values are of the same currency, they match the currency preference setting of the active ARGUS EstateMaster DM file, and therefore will be imported into as-is.

Multi-Currency Support in Salesforce

If your Salesforce.com instance has multi-currency support enabled:

- You will have the option define the currencies you want to utilise in Salesforce, as well as which one of those is the 'Corporate' currency.

- Each object/table will have a 'Currency' field applied to it.

- All 'currency' type fields on the object/table will have an accompanying 'converted' field that is selectable in Reports. This represents the value of the field, converted to the 'Corporate' currency, based on the selected 'Currency' of the record. So

It is recommended that when creating the Salesforce Report for this integration, the 'Currency' field for each transaction be included, as well as the base Sales Price and Tax values (not the 'converted' values). This will ensure that the integration can accurately validate the data, ensuring that the specifc Currency for the Sales Price and Tax values match the currency defined in the ARGUS EstateMaster DM file.

If you do use the 'converted' values in the report, the integration is not able to check what the 'Corporate' currency in Salesforce is, and therefore cannot validate that these values are of the same currency as the ARGUS EstateMaster DM file

18.2.2 Connection Settings

Since Salesforce is a cloud application, it utilises the OAuth online authentication protocal to allow the user to securely log into their account. The user is prompted to log into their Salesforce account via this process and select the Report they want to import data from when they either:

1. Click on the [Connect] button on the Connection Settings tab, or

2. Attempt to select a Report by clicking on the [▼] button

Online Authentication

The first login screen prompts the user for their Salesforce email login and password. Press [Log In] to continue.

The second screen prompts the user to confirm access to their Salesforce account. Press [Allow] to continue.

Once successfully logged in, it will return to the application, where the user will need to select the Salesforce Report they wish to import data from before being able to proceed any further.

Field Mapping

Once a Salesforce Report has been selected, proceed to the 'Field Mapping' tab to map the fields in the Report with the data required by ARGUS EstateMaster DM.

Pressing the [Validate] button will check if any mandatory data is missing, or if there are any data type issues (e.g. text data being mapped to a date field)

Refer to the Custom Report Initial Configuration to understand what type of data is expected for each Report field, and the behaviour if any optional fields are excluded.

18.2.3 Data being Imported

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✓
Import Tax Exclusive Data	✓
Import Data by Lot/Unit	✓
Import Data by Stage-Status	✓

Data Source

Data is sourced from custom Salesforce Report, as indicated in the Initial Configuration

18.3   Propertybase

ARGUS EstateMaster DM is integrated with Propertybase, a Cloud CRM specifically designed for the real estate industry and built on the Force.com platform, to allow you to import sales data data directly into the cash flow table.

18.3.1   Initial Configuration

Before you can use this feature, your Propertybase instance will need to be custom configured.

EstateMaster Integration Package

The EstateMaster Integration is an addon package to the standard Propertybase configuration and can be installed using the instructions detailed in this Help Article.

It adds the necessary customisations to a standard instance of Propertrybase (e.g. custom fields, custom settings, etc) to enable the integration to operation.

The article will outline:

- How to install the Package, including setting up and configuring a Salesforce 'Site' required for the integration

- Map the Propertybase fields to the ARGUS EstateMaster DM input fields.

- How ARGUS EstateMaster DM connects to the Propertybase data.

Field Mapping

As part of the installation of the integration package, a default mapping between standard Propertybase fields and ARGUS EstateMaster DM input fields is pre-configured.

However, due to the customisable nature of Salesforce, you may want to use custom fields and map these to the ARGUS EstateMaster DM input fields instead. You can do this by going into the 'EstateMaster Settings' and altering the 'Field Mapping' list accordingly.

Estate Master Settings	Save
▶ General	
▼ Field Mapping	
Project Code (Text)	pba__Property__c: Project Code ▾
Project Completion Date (Date)	pba__Property__c: Project Completion Da▾
Forecast Presales Date (Date)	-- Not Defined -- ▾

Project Number (Mandatory)	The unique number/code for the development project.
Project Completion Date (Optional)	The expected date of practical completion of the project (i.e. the point where all development work is complete, and is reasonably fit for occupation - sale or lease)
	This is used to assist with calculating the Forecast Settlement Dates:
	• If '**Accepted Offer**' is False (i.e. the Lot/Unit is still 'available' for sale) AND **Forecast Settlement Date** is not set AND **Stage Completion Date** is not set, then the **Forecast Settlement Date** for 'Available' sales = **Project Completion Date + 21 Days**
Lot/Unit Number (Mandatory)	The unique number for the Lot/Unit being sold.
Stage Number (Mandatory)	The stage/phase the Lot/Unit is allocated to in the project.
Stage Completion Date (Optional)	The expected date of practical completion of the that particular stage/phase.
	This is used to assist with calculating the Forecast Settlement Dates:
	• If '**Accepted Offer**' is False (i.e. the Lot/Unit is still 'available' for sale) AND **Forecast Settlement Date** is not set, then the **Forecast Settlement Date** for 'Available' sales = **Stage Completion Date + 21 Days**
Lot/Unit Area (Optional, if 'Land Size' field is mapped)	If the stock being sold is anything **other than vacant land**, it should represent the **saleable size of the dwelling/house/unit/office**, etc.
	• If the stock is **vacant land**, then this field can be ignored and data must be entered in the **Land Size** field.
Land Size (Optional, if 'Lot/Unit Size' field is mapped)	If the stock being sold is **vacant land**, then this should represent the **land size.**
	• For **other types of inventory**, then this field can be ignored and data must be entered in the **Lot/Unit Area** field.
Size Unit (Optional)	The unit of measurement that the above spatial areas are represented in. It must be in an accepted format or abbreviation, such as:
	• Sq M, M2, Square Metre(s)
	• Sq Ft, Ft2, Square Feet, Square Foot

- Sq Yrd, Yd2, Square Yard(s)

- Sq Km, Km2, Square Kilometre(s)

- Sq Mi, Mi2, Square Mile(s)

- Ac, Acre(s)

- Ha, Hectare(s)

  * Includes British and US spelling variations

If the unit of measurement differs from what has been set in the 'Sales Revenue' section of the input assumptions, the 'Lot/Unit Area' values will be converted accordingly before being imported into ARGUS EstateMaster DM.

SALES REVENUE	Area (SqFt)
Residential Revenue	170,070
Office Value	16,899
Retail Value	11,582
Parking	

Note: If this data is not available in the report or it is not mapped, then no area conversions will be conducted, and the 'Lot/Unit Area' values will be imported into ARGUS EstateMaster DM as-is.

Under Offer (Mandatory)

The true/false flag indicating whether the Lot/Unit has an active 'offer' on it.

- If **False**, then the Lot/Unit is still 'available' for sale

- If **True**, then the 'Accepted Offer' field needs to be checked to determine if the Lot/Unit is 'contracted' (in the process of being sold) or still 'available'.

Anticipated Price inc Tax (Mandatory)

This should represent the **list/anticipated/forecasted** sale price for '**Available**' sales.

Forecast Settlement Date (Optional)

This should represent the **anticipated/forecasted** settlement date for '**Available**' sales.

If it has not been set, and 'Accepted Offer' is False (i.e. the Lot/Unit is still 'available' for sale), and:

- **Stage Completion Date** is not set, then the **Forecast Settlement Date** for 'Available' sales = **Project Completion Date + 21 Days**

- **Forecast Settlement Date** for 'Available' sales = **Stage Completion Date + 21 Days**

Accepted Offer (Mandatory)

The true/false flag indicating whether an offer on the Lot/Unit has been 'accepted'.

- If **False**, then the Lot/Unit is still **'Available'** for sale

- If **True**, then the Lot/Unit is **'Contracted'** (in the process of being sold) and therefore no longer available for sale.

Actual Price inc Tax (Optional)

This should represent the **actual/contracted/agreed** sale price for '**Contracted**' sales.

If it has not been set for a Lot/Unit, it will use the amount used for the **Anticipated Price**

<table>
<tr><td>**Actual Settlement Date** (Optional)</td><td>This should represent the **actual** settlement date for '**Contracted**' sales.

If it has not been set for a Lot/Unit, it will use the date used for the **Forecast Settlement Date**</td></tr>
<tr><td>**Tax Amount** (Optional)</td><td>The sales tax portion of the sales price, represented as an amount. If your Salesforce.com instance has multi-currency support enabled, it is recommended that you select the 'converted' value for this report field.

Note: If this data is not available in the report or it is not mapped, it will assume that the Sales Price value being returned by the report excludes Tax (as there is no mechanism to accurately calculate both a Tax Inclusive and Exclusive amount, and the equivalent percentage tax rate). This is irrespective if the 'Include Tax' option is enabled on the 'Import' tab.</td></tr>
</table>

18.3.2 Connection Settings

These are the settings that the user must define to be able to connect to Propertybase data.

<table>
<tr><td>**Endpoint** and **Token**</td><td>This is the name of the Force.com 'Site' and its related Security Token, used by the EstateMaster Integration package.

They can be retrieved from the 'EstateMaster Settings' tab within Propertybase.</td></tr>
</table>

The [Test Connection] button will conduct a test connection to the selected Endpoint and Token to ensure all credentials are correct.

18.3.3 Data being Imported

Data Options

These are the options available on the 'Import' tab to determine what type of data is imported:

Option	Fields
Import Tax Inclusive Data	✔
Import Tax Exclusive Data	✔
Import Data by Lot/Unit	✔
Import Data by Stage-Status	✔

Data Source

Data is sourced from custom Salesforce Report, as indicated in the Initial Configuration

18.4   Microsoft SQL Server

ARGUS EstateMaster DM can be integrated with any SQL Server-based Sales CRM system to allow you to import sales data data directly into the cash flow table. You may need to consult your Database Administrator or the vendor of the accounting software to assist with this integration as it requires developing a custom SQL Query.

18.4.1   Initial Configuration

Before you can integrate your SQL Server database with ARGUS EstateMaster DM, you will need to:

1. Ensure that the following data is available in the database and can be returned for every Lot/Unit Sales item:

Project Number (Optional)	The unique number/code for the development project.
	Note: If this data is not available in the database or it is not included in the Database Query: it will assume that the data being imported only relates to a single project (i.e. as a Project filter applied on the report itself), and therefore the import process will attempt to import all available data returned by the query into ARGUS EstateMaster DM.
Lot/Unit Number (Mandatory)	The unique number for the Lot/Unit being sold.
Lot/Unit Area (Mandatory)	The spatial area of the Lot/Unit.

- If the stock is **vacant land**, then this should represent the **land size.**

- For **other types of inventory**, it should represent the **saleable size of the dwelling/house/unit/office**, etc.

Unit of Measurement (Optional)	The unit of measurement that the above spatial area is represented in. It must be in an accepted format or abbreviation, such as:

- Sq M, M2, Square Metre(s)

- Sq Ft, Ft2, Square Feet, Square Foot

- Sq Yrd, Yd2, Square Yard(s)

- Sq Km, Km2, Square Kilometre(s)

- Sq Mi, Mi2, Square Mile(s)

- Ac, Acre(s)

- Ha, Hectare(s)

* Includes British and US spelling variations

If the unit of measurement differs from what has been set in the 'Sales Revenue' section of the input assumptions, the 'Lot/Unit Area' values will be converted accordingly before being imported into ARGUS EstateMaster DM.

SALES REVENUE	Area (SqFt)
Residential Revenue	170,070
Office Value	16,899
Retail Value	11,582
Parking	

<table>
<tr><td></td><td>Note: If this data is not available in the database or it is not included in the Database Query, then no area conversions will be conducted, and the 'Lot/Unit Area' values will be imported into ARGUS EstateMaster DM as-is.</td></tr>
</table>

Stage (Mandatory)   The stage/phase the Lot/Unit is allocated to in the project.

Status (Mandatory)   The sale status of the Lot/Unit. It must be represented by one of the following codes::

- **A**: To indicate if a Lot/Unit is still 'available' for sale

- **C**: To indicate if a Lot/Unit is 'contracted' (in the process of being sold) and therefore no longer available for sale.

Transaction Date (Mandatory)   The settlement date of the Lot/Unit. You will need to ensure that:

- For '**Available**' sales, this should represent the **anticipated/forecasted** settlement date

- For '**Contracted**' sales, this should represent the **actual** settlement date

Sales Price inc Tax (Mandatory)   The gross sales price of the Lot/Unit including any applicable tax.

- For '**Available**' sales, this should represent the **list/anticipated/forecasted** sale price

- For **'Contracted**' sales, this should represent the **actual/contracted/agreed** sale price

Tax (Optional)   The sales tax portion of the sales price, represented as an amount.

Note: If this data is not available in the database or it is not included in the Database Query, it will assume that the Sales Price value being returned by the query excludes Tax (as there is no mechanism to accurately calculate both a Tax Inclusive and Exclusive amount, and the equivalent percentage tax rate). This is irrespective if the 'Include Tax' option is enabled on the 'Import' tab.

Currency (Optional)   The currency ISO Code that the Sales Price and Tax values are reported in (e.g. AUD, USD, GBP, AED, etc).

This is used for an extra layer of data validation; there is no actual currency exchange rate conversion of the data. Therefore all Lot/Unit records must have the same currency setting, otherwise the validation process will fail and no data will be imported into ARGUS EstateMaster DM.

Note: If this data is not available in the database or it is not included in the Database Query, then it is assumed that all Sales Price and Tax values are of the same currency, they match the currency preference setting of the active ARGUS EstateMaster DM file, and therefore will be imported into as-is.

2. If the above data is sourced from multiple Tables in the database, it might be ideal to create a custom 'SQL View' on the database. A View is virtual table based on the results of an SQL

---

statement. It contains rows and columns, just like a real table, and come from one or more real tables in the database.

3. Create a SQL Query that will be entered in the 'Database Query' tab. If a SQL View has been created as per the above suggestion, or all the required data is already available in a single database Table, then this could end up being be a relativity simple SELECT 'x' FROM 'y' WHERE 'z' query. Otherwise it could be quite complex and require advanced SQL logic.

Important Note: You may need to consult your Database Administrator or the vendor of the accounting software to assist with items 2 and 3 above.

18.4.2 Connection Settings

These are the settings that the user must define to be able to connect to the SQL Server Database.

Server Name	The SQL Server where the Sales CRM database is located
Windows Authentication	If selected, it will attempt to connect to the SQL Server using Windows Authentication (i.e. the current logged on user)
SQL Username and Password	The credentials required to connect to the selected server and access the database.
Database Name	The name of the Sales CRM database.
	The [Test Connection] button will conduct a test connection to the selected database to ensure all credentials are correct.

18.4.3 Database Query

For the SQL Server integration, the Database Query tab contains a SQL Syntax Editor, where you can enter and validate the SQL Query that will be used to fetch the data.

A default query is displayed to show how it should be structured. At any time, you can press the [Reset Query] button to undo all edits and revert back to the default query.

Checking Syntax

The Syntax Editor will highlight any errors in relation to syntax as your are entering the query, and the [Check Syntax] button will also run further validation, such as:

- Ensuring that the Table/View indicated in the FROM statement actually exists in the database.

    o This Table/View can have any name and doesn't have to be the same as indicated in the default query.

- Ensuring that the columns indicated in the SELECT statement include the 'Mandatory' data as specified in the Initial Configuration and actually exist in the Table or View indicated in the FROM statement.

    o If the columns in the database Table/View are named exactly the same as the default query, then you can leave the defaults.

    o If the columns in the database Table/View are named differently to the default query, then you will need to use 'Aliases' (e.g. if the column is named 'Job', and the Query expects 'ProjectNumber', then an alisas such as `a.Job AS ProjectNumber` would need to be entered)

- Ensuring that the data is filtered by the following parameters in the WHERE statement:

    o **{ProjectAccountCode}**

        ▪ This is the Account Code entered on the Intro tab of the ARGUS EstateMaster DM file.

        ▪ It should be used to filter against the column (which can have any name) in the Table/View that contains the Job/Project number related to each Unit/Lot Sale (if multiple projects are tracked

in the same database) or hard-coded.

Filtering against a Database Column

```
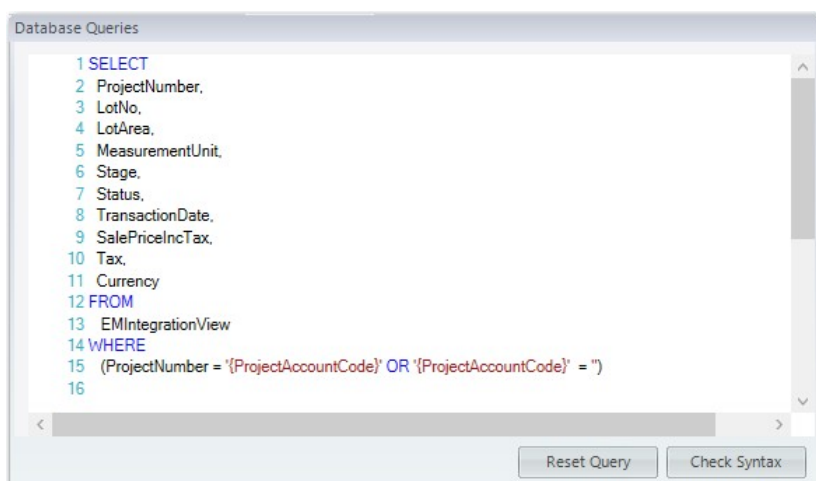8 WHERE
9    ProjectCode = '{ProjectAccountCode}'
```

Filtering against a Hard-coded Value

```
8 WHERE
9    '123' = '{ProjectAccountCode}'
```