



**Best Practice Guidelines  
for customising your  
Estate Master Model**

# Best Practice Guidelines for customising your Estate Master Model

One of the great benefits of Estate Master's suite of property development and appraisal applications is that the user interface is based on a robust and flexible spreadsheet engine, with many similarities of Microsoft Excel. This allows users to import worksheets into the applications, write their custom formula, design their own reports and link cells all while working within an environment where the core business logic is locked down to maintain the integrity of the model and ensure consistency with the results. However, sometimes this level of flexibility can be seen as a double-edged sword. While we use our extensive financial modelling experience and the best tools to develop our spreadsheet-based applications in the most efficient way possible, we have no control over what users insert into our application in the way of custom formula or custom worksheets. This then may result in a model that is not set up in the most efficient and dynamic way.

From our many years of experiencing developing financial models for the property industry, we have listed below some of the most helpful recommendations that you should take on board before extending your Estate Master models with your own customisations.

## Check for Excess Used Range

This is one of the most common issues I encounter with custom worksheets that have been developed by users and is the main cause of excessive file size and memory usage. This is where remnant cell formatting or non-standard column width or row height causes the range of cells that are actually used by a custom worksheet (known as 'Used Range') to extend beyond the last cell that visually contains any formula or data, also referred to as 'Wasted Space'. Sometimes the last cell in the used range is hundreds or even thousands of rows or columns too large, and since the spreadsheet interface ends up storing all the information on the worksheet including this wasted space in memory, a file that would be typically a few kilobytes, ends up being a few megabytes in size.

You can easily determine what the spreadsheet interface calculates as the 'Used Range' by un-hiding all rows and columns on the worksheet and then pressing Ctrl-End, and it will take you to the most bottom-right cell in that range. If you can see that the cell is beyond the range that you actually have data in, then the empty rows above and empty columns to the left are 'wasted space' and should be deleted. Here are the steps to clean the wasted space:

1. Backup your file.
2. Go to the first completely blank column at the right of your data.
3. Select the entire column by clicking on the letter.
4. Hold Shift+Ctrl and then hit the Right arrow key until you have selected all the way out to column XFD (the last possible column).
5. While the columns are highlighted, in the ribbon menu, click Edit > Clear > All, then right-click on the custom sheet and click 'Delete'.
6. Go to the first completely blank row at the bottom of your data.

7. Select the row by clicking on its number.
8. Hold Shift+Ctrl and then hit the Down arrow key until you have selected all the way down to Row 1048576 (the last possible row).
9. While the rows are highlighted, in the ribbon menu, click Edit > Clear > All, then right-click on the custom sheet and click 'Delete'.
10. Save the file.
11. Repeat steps 2 to 10 for all your custom worksheets.
12. Save the file.

There are various third-party Excel add-ins that can automatically clean the wasted space in your workbooks for you before you import them into Estate Master. One such tool is called the 'Excel Excess Formatting Cleaner' and can be downloaded from Microsoft's website: <http://www.microsoft.com/en-us/download/details.aspx?id=21649>. Upon testing this tool, I have found it sometimes to be too aggressive, deleting one too many columns of rows that contain valid formatting, so I would recommend checking the before and after results when using it.

## Avoid Volatile Functions

A volatile function is one which is always recalculated every time the workbook is recalculated, even if it does not need to be. The spreadsheet calculation engine is smart enough to realise what functions need to be calculated when a input variable changes and only recalculates the minimum number of cells required, however in the case of volatile functions, they are always recalculated regardless, adversely impacting calculation speed. Therefore it is recommended to avoid volatile functions wherever possible when you are creating custom formulas either in Estate Master input sheets or your custom worksheets.

Volatile functions include RAND, NOW, TODAY, OFFSET, CELL, INDIRECT, INFO. To learn more about Volatile Functions, and instances where a non-volatile function can become volatile, depending on how you use it, have a look at this website by Excel MVP, Charles Williams: <http://www.decisionmodels.com/calcsecretsi.htm>

## Take Advantage of New Functions

Since Excel 2007, Microsoft released new functions that can also now be used in Estate Master. These are SUMIFS, COUNTIFS, AVERAGEIF, AVERAGEIFS and IFERROR. Not many Excel users were aware that these new functions were introduced, let alone the benefits they provided.

For example the IFERROR function replaces the commonly used combination of the two IF and ISERROR functions, making it a more efficient method as the logic only had to be calculated once. Previously, your formula would have looked like this:

`IF(ISERROR(YourLogic), "There is an error", YourLogic)`

This basically tested your logic first to see if there was an error with it, and if there was it would return a specific result (in this case the text "There is an error"), otherwise if there was no error, it would return the result of your logic.

However, re-writing this formula using the IFERROR function would make it look like this:

IFERROR(*YourLogic*, "There is an error")

It would behave exactly the same way as using the IF and ISERROR combination, however the benefits are the formula is shorter (making it easier to read and manage) and that logic that you are testing is only evaluated once in the formula, making it more efficient.

## Use Range Names instead of Cell References

When you are developing custom worksheets within Estate Master and you are referencing cells on the standard worksheets, it's always ideal to refer to the range name (if possible) instead of the actual cell reference. This ensures that the formula relationship between the custom worksheet and standard worksheet is dynamic and always maintained in subsequent versions.

For example, just say you wanted to refer to the 'Land Purchase Price' input cell located in the Input sheet in Estate Master DF, in one of your custom worksheets. If you were to simply type in '=' , and then navigate to the 'Land Purchase Price' input cell and select it, the formula on your custom sheet would appear something like this: =*Input!F58*

This will calculate fine. However, formulas in custom worksheets are saved separately to the data on the standard worksheets. Therefore, if in a future update of Estate Master DF either a row is added above the 'Land Purchase Price' input cell or a column added to the left of it, it will shift that input cell and it will no longer be located in cell F58. However, when the custom worksheet is loaded, the formula in it will still be referencing cell F58 on the input sheet.

The solution to this is refer to a cells range name of it has one. To determine if a cell has a range name, when you select it, a text name may appear in the 'Names' drop-down list located to the left of the formula bar ([Screenshot](#)). So in the example above, when the user is creating the formula in the custom worksheet, they would manually replace *Input!F58* with *Import\_73* so that the final formula would be: =*Import\_73*

## Develop as much as you can in Excel

While we endeavour to incorporate as much Excel functionality in Estate Master's spreadsheet interface as possible, there are some features that Excel are superior in, and that we recommend you take advantage of. For example, if you need to add complex custom worksheets in Estate Master, rather than developing within the Estate Master spreadsheet interface, we recommend that you develop them in Excel and then import the finished product into your Estate Master file. To do this, you would:

1. Setup the base Estate Master file first (i.e set up your preferences and enter as much data in the standard inputs as possible)
2. Export the Estate Master file as it is, to Excel. This will provide you with an exact replica of your Estate Master file, albeit containing only values in the standard worksheets.
3. You know have a version of your Estate Master file that you can manipulate in Excel and therefore take advantage of Excel's advanced formula building and auditing features. You can add and develop all your custom worksheets within that Excel file. (Note: Do not modify the standard worksheets, as for this process to work, the must remain the same as when they were exported).

4. When you have finished, you then save that Excel file, re-open your original Estate Master file and import those completed custom worksheets back into it. If you have developed it correctly, all the custom sheets you just imported will link up and calculated correctly with your live Estate Master model, and any further refinements you need done to it can then be done within Estate Master.

## Get Professional Assistance

If you are not comfortable with developing your own custom add-on worksheets in Estate Master or writing your own formulas, it's always best to get expert advice. You are relying on this software to make critical business decisions, so if you are thinking of extended its functionality, it is imperative that you invest in getting right.

**EstateMaster** ■

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