User Guide

Version 3.2.23 – September 2025

Please note: this user guide is a temporary placeholder while updates are in progress.

The content hereafter remains identical to the user guide for version 3.2.20.

Contents

1. Introduction

Welcome to Optimix

Optimix is a development appraisal toolkit built in Microsoft Excel by Beacon Partnership LLP, and is used to assess the financial viability and performance of housing development projects. Through a user-friendly and intuitive interface, Optimix offers the following:

- Multi-tenure modelling
- Affordability tests and goal-seek
- Sensitivity analysis
- Efficiency modelling
- Rent loss for regeneration schemes
- Stock transfer modelling
- Clear reporting & graphics
- Full calculation transparency
- Internal data consistency and audit checks

Optimix is a macro-enabled, protected workbook compatible with Microsoft Excel 2016 and above. The toolkit should be used on **Windows desktop only** (Windows 10 and above), i.e. not on Excel 365 for the web, and not on MacOS.

<u>**IMPORTANT**</u>: Do not attempt to open Optimix using Google Sheets – this will cause **irreversible workbook corruption**. We cannot programmatically prevent Google Sheets from opening Optimix without adding the inconvenient requirement of entering a password just to open the workbook.

> **Good to know…**
>
> **Acronyms**
>
> There are several acronyms used in this user guide with which you may or may not be familiar from your previous experience and involvement in housing development work. If you encounter an acronym that you do not recognise, you can refer to **Chapter 13** of this user guide for a listing of the acronyms used and their meanings.
>
> **Example inputs**
>
> There are also many screenshots included in this user guide for illustrative purposes – please bear in mind that any input values displayed in these screenshots are:
>
> - included solely as example values or as test entries to demonstrate how they are used in different areas of Optimix, and where/how they are presented
> - **not** actual inputs of any real-world housing development scheme
> - **not** representative of any realistic inputs, averages or benchmarks for real-world housing development schemes
> - **not** indicative of the inputs you may or may not need to produce a viable/non-viable scheme within your organisation
>
> **Errors/omissions**
>
> If you spot any errors, inaccuracies, typos or omissions in this user guide, please let us know what you have found and on which page number by emailing optimixsupport@beaconpartnership.com.

2. General overview

Optimix includes the following worksheets:

Primary Input	Resi Units	Input for all residential unit data
	Non Resi Units	Input for all non-residential unit data
	Costs & Grants	Input for all capital costs and capital income
	Timing	Input for cost and income timings and manual cash-flow input
Secondary Input	Rent Loss	Input to model the impact of rent loss of existing scheme
	Stock Condition	Input for existing stock condition survey information
	Revenue Income & Costs	Input for additional income and costs to be cashflowed post-completion
Reports	Visuals	Chart and graph representations of model output data
	Summary	Report summarising performance of the scheme as a whole
	Tenure	Report summarising scheme performance broken down by tenure
	RLV	Residual land value report in the industry standard RLV format
	Unit	Report summarising rent and market value attributes by unit type
	Cash-Flow	Long-term cash-flow summary
	Affordability	Affordability summary for shared ownership and sale units
	Sensitivities	Analysis of scheme sensitivity to variances in works cost/sales value
	Optimix	Unit optimiser tool
	Assumptions	Long-term discounted cash-flow assumptions
Calculations	DCF	Long-term discounted cash-flow calculations for residential units
	Non-Resi CF Calcs	Long-term discounted cash-flow calculations for non-residential units
	Rents	Rent lookups and calculations
	Sequel Data	SDS Sequel export data
	Consolidator Export	Data for export to the Optimix Consolidator tool
	Audit	Summary of error checking formulas and version history

Your organisation may have additional bespoke reports/worksheets that would also appear in your master Optimix template.

Tips and guidance for use

Here are some general tips and guidance to bear in mind while using Optimix:

- A cell with pale green shading indicates an unprotected cell that can accept user input:

Input Amount		
Input Amount		

- A cell with pale blue shading indicates a password-protected cell – only a **superuser** in possession of the password will be able to edit these cells. This password is provided to the primary contact(s) or their nominated financial lead(s) upon Optimix first being issued to your organisation:

Mid Year discounting offset if used	

- Some input sheets (and some report sheets) feature *Notes* areas – these are included for free text or formula entry by the user:

Cut, copy and paste in Excel

The **Cut (Ctrl + X) and Paste All (Ctrl + V) functions are disabled in Optimix** to prevent the user from inadvertently breaking any formula references in the workbook, which would cause errors and inaccurate or unreliable output. These restrictions apply only to Optimix, and not to any other Excel workbooks that you may have open at the same time (provided that they are not in Protected View).

Further detailed information is available in Appendix A: Cut, copy and paste in Excel.

Audit checks

Optimix contains many checks for errors and internal data consistency to help with detecting invalid input values, logical contradictions and any defects in its formulae which may have escaped detection. Audit statuses scoped to individual sheets are then consolidated into a master audit status located on the *Audit* sheet, which relates to the model as a whole.

If any of these audit checks evaluates to FALSE, the master audit status will also be set to FALSE and you will see cells and/or text coloured red on most of the sheets in the model:

Common causes of audit errors

- A required input has been left empty

- An input cell that requires entry of a number was cleared by entering a space
    - Use the *Delete* key instead, or overtype the existing input with new input

- Manual cashflow lines not summing to the expected amount
    - More on this in the *Development cashflow and timings* chapter, page 64.

- Key scheme milestone dates configured in the appraisal are not in the correct order
    - e.g. Practical Completion is set to occur before Start On Site

- Development cashflow runs for more than 10 years
    - e.g. the date entered for *Practical Completion* on the *Resi Units* sheet **(Cell H11)** is later than the *Cashflow Limit* on the *Timing* sheet **(Cell D6)**

- Dates or numbers entered in wrong format, or as negative values where positive are expected
    - Data validation settings will usually warn you if your input is not in the expected format, by displaying a message similar to the one shown below
    - *Retry* will take you back to edit mode in the cell, ready to accept your replacement entry; *Cancel* will remove the invalid entry and leave the cell selected
    - Use dropdowns where they are available in input cells to ensure that a valid entry is selected
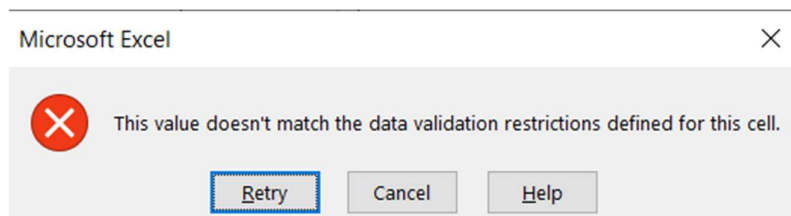
IMPORTANT:

DO NOT IGNORE AUDIT ERRORS – they are very likely indicative of issues which will cause inaccurate and/or inconsistent values in the model's reports and other outputs, which could render the appraisal invalid and unsuitable as a basis for financial planning.

If you cannot identify the cause of an audit error after checking through the common causes list above and reviewing all entries made in your scheme appraisal, contact Optimix support for assistance (see the *Getting help* section on page 13).

In **Cells C23 and D23** of the *Audit* sheet, the superuser can define a formula and description respectively for any custom audit check that they wish to add to their appraisals.

Sheet	Result	Notes	Override
Resi Inputs	TRUE	Check sheet operates correctly	FALSE
Non-Resi Inputs	TRUE	Check sheet operates correctly	FALSE
Costs & Grants	TRUE	Check sheet operates correctly	FALSE
Timing	TRUE	Check sheet operates correctly	FALSE
Rent Loss	TRUE	Check rent losses are apportioned ok if manually apportioned	FALSE
Stock Condition	TRUE	Check applied apportionment of survey costs sums to 100%	FALSE
Assumptions	TRUE	Check inflation dates and rates entered for all tenures, check grant reclaim method vs R2B type	FALSE
DCF	TRUE	Check sheet operates correctly	FALSE
Summary Report	TRUE	Checks report matches inputs in key areas	FALSE
Tenure Report	TRUE	Checks report matches inputs in key areas	FALSE
RLV report	TRUE	Checks report matches inputs in key areas	FALSE
Version Numbering	TRUE	Checks the version numbering is compatible with consolidator (v[int].[int].[int])	N/A
Export to Sequel	TRUE	Checks sequel cash flow matches cost input	FALSE
Export to consolidator	TRUE	Confirms this scheme will export correctly to the consolidator	FALSE
Cashflow report	TRUE	Check sheet operates correctly	FALSE
Macro enabled file	TRUE	Check saved in valid file format	N/A
User-defined check	TRUE	[description of user-defined check]	
Master	TRUE	This needs to show TRUE to confirm the model has no error.	
£ TOLERANCE	10	The allowance made by internal audit checks for rounding errors on monetary values.	
% TOLERANCE	0.01	The allowance made by internal audit checks for rounding errors on percentage values.	
# TOLERANCE	0.5	The allowance made by internal audit checks for rounding errors on integer count values.	

The formula **must evaluate to either TRUE or FALSE** in order to work alongside the default audit checks – any other formula result may cause the appraisal to enter an error state. A result of FALSE will trigger the master audit result to also be FALSE, thereby indicating to the user that there is an issue to be resolved.

Inputs and outputs flowchart

The following diagram illustrates how scheme data flows through and is processed by Optimix to produce reports and graphics as output:
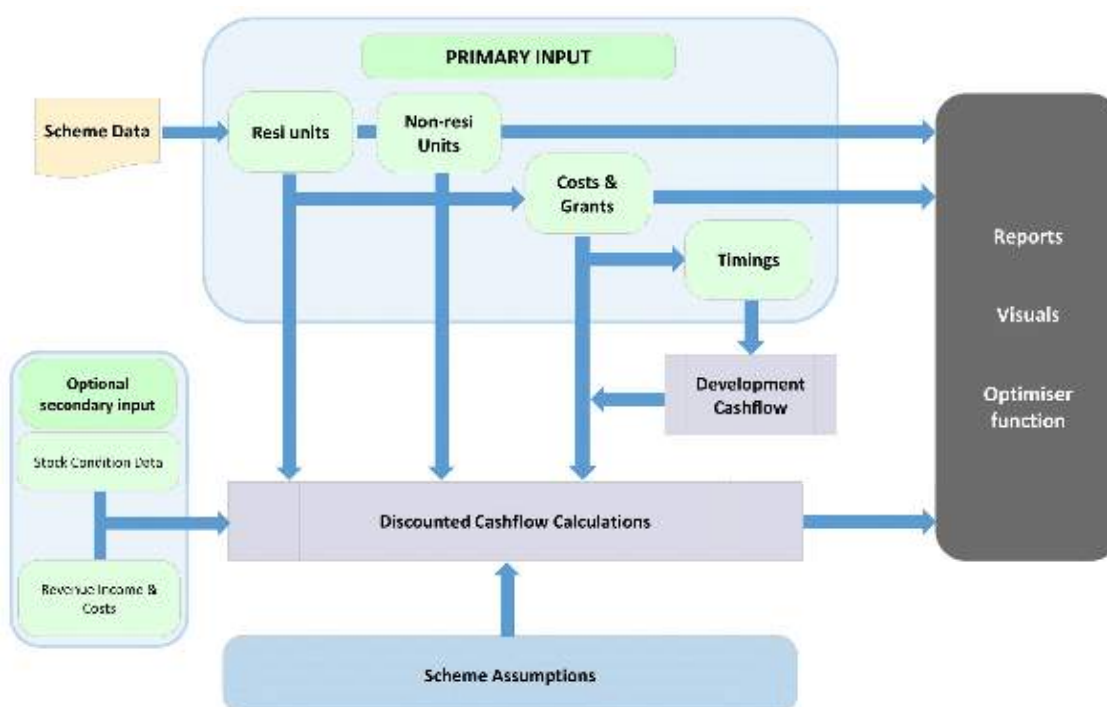
3. Getting started

Users open Optimix by double-clicking its Excel workbook icon (or a shortcut icon linking to it). Once it has opened Optimix, Excel may then display the following prompts in the Message Bar (underneath the ribbon menu):

- **Protected View**: This will be displayed after downloading and saving an appraisal workbook and opening it for the first time since download (for example, from a SharePoint directory), or when opening an appraisal workbook directly from the attachments on a received email. To disable Protected View, simply click the *Enable Editing* button in the notification that appears in the Message Bar:

- **Security Warning**: The first time you open a macro-enabled workbook that Excel has not encountered before, if it originates from an online source (perhaps from a SharePoint directory, cloud storage solution or an attachment to an email), then after disabling Protected View as explained above, you will see this notification in the Message Bar:
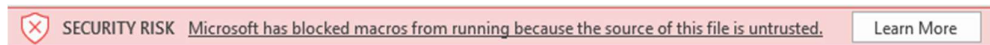
In mid-2022, to improve cybersecurity awareness amongst its users, Microsoft began rolling out a change to the way that macro-enabled files originating outside of the user's network are handled in Office applications. Prior to this change, when first opening a macro-enabled workbook, you would have been used to seeing a notification like the following:
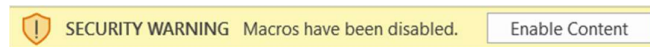
The most convenient and effective way to overcome macro security restrictions when using Optimix is to add our digital certificate as a 'trusted publisher' in Excel's Trust Center.

Please see Appendix B: Macro security in Optimix for more information to help you ensure that macro security issues are not a barrier to using Optimix.

The Welcome screen

Once an Optimix file has been opened, the following screen will be displayed (the checkboxes that are ticked/unticked may vary according to your organisational defaults):

On this *Welcome* screen users can:

- Select which input sheets they wish to be visible

  o *Workbook Structure* section ⟶ *Input Sheets*

- Select which tenure types they wish to be visible on the *Resi Units* sheet

  o *Appraisal Setup* section ⟶ *Tenure Types*

- Select which tools and reports sheets they wish to be visible

  o *Workbook Structure* section ⟶ *Tools and Reports*

- Select whether the assumptions sheet is visible

  o *Workbook Structure* section ⟶ *Assumptions*

- Select which calculation sheets, rent data lookup tables, data export sheets and bespoke reports they wish to be visible

  o *Workbook Structure* section ⟶ *Calculations, Lookups, Export Values and Misc*

These selections can all be done by ticking or unticking the checkboxes in each section.

Users can also:

- Import inputs from other saved Optimix appraisals
- Generate files to export data to SDS Sequel
- Insert blank sheets in the workbook for your own use ('User Sheets')
- Print one or multiple reports
- Click to visit our website for information about training
- Click to open this User Guide in your web browser
- Click to email us with a support request, some feedback, or an enquiry about the consultancy services and benchmarking group services that we offer
- Enter notes **(Cells N29 to P37)**

Importing Data from Previous Versions

Clicking the *Import data from an earlier version* button:

…will open a file picker dialog box. Users will then need to select a saved appraisal file, then click the *Open* button:
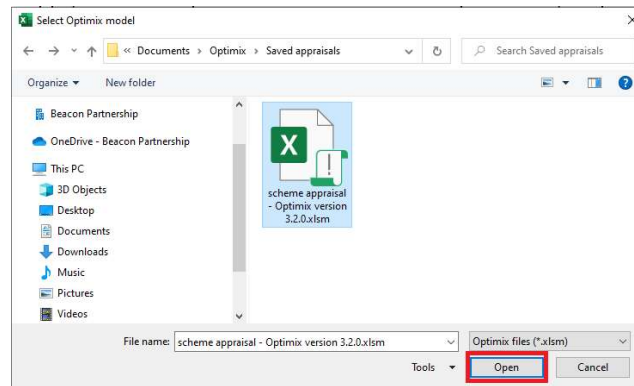
The following dialog box will then open:
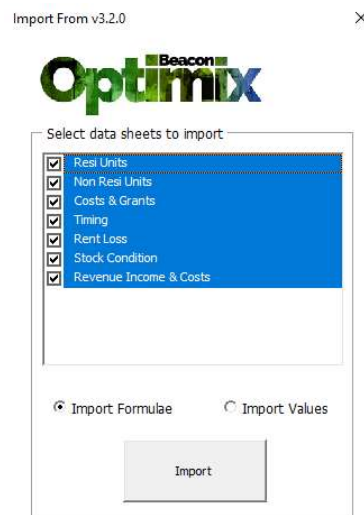
Users can then tick to select the sheets from which they wish to import data from their saved appraisal file.

Issues which prevent import

The oldest version of Optimix for which import of appraisal inputs is supported is v3.0.7. If you need to import from an appraisal in an older version, please contact Optimix support (see page 13).

If Optimix detects that you are attempting to initiate an import into your master template, you will be prompted to save a working copy first (using *Save As*, and without the word 'template' in the filename), before trying the import again.

If Optimix detects that there are some inputs in the appraisal file already, then you will be prompted to start again using a blank appraisal file (i.e. a saved working copy of your master template), before trying the import again.

If there are any circular references in an open workbook (this may be the source appraisal opened by the import process, or another workbook), Optimix will prompt you to resolve them before allowing you to continue with the import.

You can find information on where these are by going to the *Formulas* tab of the ribbon menu in Excel, then in the *Formula Auditing* group, clicking the small dropdown arrow next to *Error Checking* (this may be greyed out if no errors other than circular reference exist), then hovering the mouse cursor over the *Circular References* menu item:
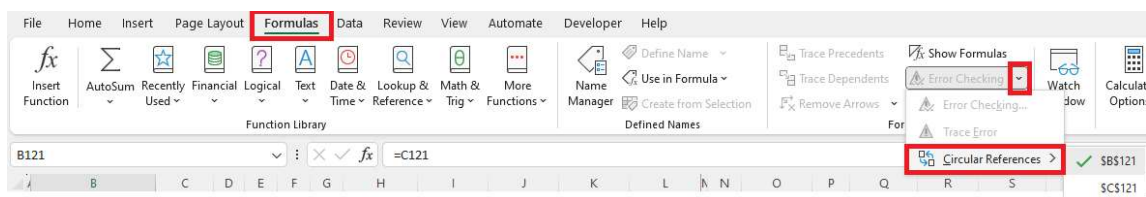
For more information on circular references in Microsoft Excel, follow this link:

https://support.microsoft.com/en-au/office/remove-or-allow-a-circular-reference-8540bd0f-6e97-4483-bcf7-1b49cd50d123

Good to know…

There are options for importing either:

- any formulae in input cells, along with directly entered values (*Import Formulae*), or;
- only the values that any input cell formulae are evaluated to in the source appraisal, along with directly entered values (*Import Values*)

If you choose the *Import Formulae* option, it is important to ensure that any of your formulae which use calculated offsets are checked after import to verify that they point to the correct cells.

FORMULA OFFSETTING DURING IMPORT

Input cell formulas in the source appraisal file will have their range references offset by the number of rows/columns needed to adjust for structural changes made in Optimix updates since the version of Optimix of your source appraisal.

If you get unexpected or unusual results after importing using the *Import Formulae* option, and you cannot identify where the problematic input cell formula might be, try reimporting into a fresh copy of your master Optimix template using the *Import Values* option.

After you click the *Import* button, Optimix will then work through the import process. If there are any User Sheets in the source appraisal, these will automatically be copied in their entirety into your open appraisal file. Formulas on User Sheets are only offset to adjust for structural changes if they refer exclusively to worksheets and cells in the source appraisal, and are also 'localised' during import, i.e. amended so that they refer only to cells within the new appraisal file populated by the import.

A confirmation will be displayed once the import process is complete – please note the advice related to reviewing any variances and errors, and aligning assumptions, settings, inflation rates etc:

Finally, an *Import Summary* report will be generated for the user to review. In this summary report, a comparison is provided between the source appraisal and new appraisal for key datapoints, such as net present value (for the whole scheme, and for each tenure), as well as total scheme costs (excluding capitalised interest) and the present value of the income stream.

This offers an opportunity to sense-check that any variances are expected and their causes are understood.

You will also be able to review any input cell formulae which were imported and adjusted, and check for variance in their calculated results.

IMPORTANT:

You can import scheme inputs from an appraisal produced with an older version of Optimix, or from an appraisal produced with the same version as the blank appraisal template you are importing into. It is not possible to import inputs from an appraisal produced in a newer version of Optimix than the version you are importing into.

Exporting Data to Other Applications

Clicking the *Export data to other apps* button:

…will open the following dialogue box:
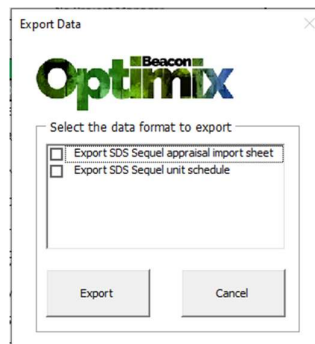
Simply tick the checkbox for the desired export format, then click the *Export* button. Optimix will then create a new Excel file which can be imported into SDS Sequel.

Inserting User Sheets

Clicking the *Insert user sheet* button will display the following dialog box:
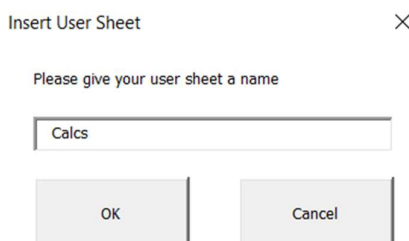
Users should enter a **unique name** for the new sheet that they wish to add, then click the *OK* button. Please note, the characters : \ / ? * [ ] ' are not permitted by Excel to appear in a worksheet name. A new unprotected sheet will then be inserted at the end of the list of sheet tabs, as shown below.

User sheets can be added in order to create a workspace for you to carry out supplementary calculations, to which you might refer in input formulas elsewhere in your appraisal.

The user sheet name you entered will be prefixed with 'User…' and assigned to this new sheet:
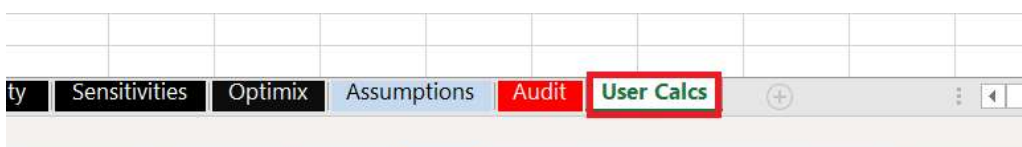
Printing Reports

By clicking the *Print Reports* button the following dialogue box will appear:

Simply tick any combination of the check boxes for the reports that you wish to print, then click *Print Reports*. This will load a print preview of the selected reports for you to send to your preferred printer.

Saving an Appraisal

Client Version

After fully populating your saved copy of an appraisal with input data, for your ease of reference at a later date, it is good practice to check that a *Client Version* has been set in **Cells O8 to P8** on the *Welcome* sheet before saving your changes:

The cell is editable only after a superuser enters the required password, but once unlocked, this cell accepts free-text input. We advise using the *Client Version* to indicate which set of Scheme Assumptions have been configured in the appraisal, particularly where they differ from the Standard Assumptions (see Chapter 4 for more information on assumptions).

For example, your organisation may choose to have 3 sets of Scheme Assumptions – perhaps described as 'bullish v1.0', 'median v1.0' and 'cautious v1.0' – and which may each be revised over time according to your organisation's financial strategy approach. These revisions could then be named 'bullish v1.1', 'median v1.1' and so on. The *Client Version* cell is the ideal location for recording labels of this type.

Appraisal status & locking

You may also wish to assign a status to your appraisal before saving. This can be done using the dropdown list of available statuses in **Cells O9 to P9** on the *Welcome* sheet:

The statuses available for selection indicate which stage of the development process your scheme is currently at – for example: *Feasibility*, *Offer Accepted*, *Start On Site*, etc.

Appraisals can also be **locked** – this prevents amendment of input cells, essentially placing the appraisal into a read-only state – by selecting one of the appraisal statuses ending in '…Locked'.

You will then be prompted for confirmation that you wish to lock the appraisal:

After clicking *Yes*, the user will be asked to enter the password that would be required to unlock the appraisal, and then asked to re-enter the same password (in case you mistype the password the first time):

OPTIMIX - enter password

Please enter a password to lock the appraisal:

****

OK   Cancel
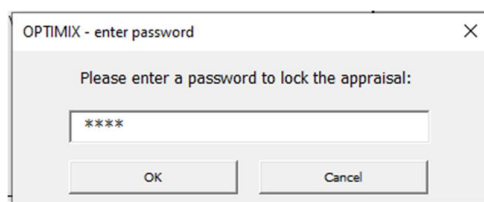
Unlocking a locked appraisal is achieved by choosing an appraisal status which does not end with '…Locked' and then entering the correct unlock password.

IMPORTANT:

Be sure to make a secure note of the password you enter when locking an appraisal. If the password of a locked appraisal is lost or forgotten, the lead contact in your organisation should contact our support team using the *Email Support* button on the *Welcome* sheet, attaching the locked appraisal, and providing their authorisation for the unlocking of the appraisal.

Optimix master template

When saving an appraisal, users should be careful not to attempt to overwrite their organisation's master Optimix template – instead, make sure you have saved a separate copy that does not contain the word 'template' in the filename.

If you try to save over the master template, you will be warned that you are about to do this with the following prompt for confirmation – be sure to click *No*:

OPTIMIX

! Based on the file name, this workbook is an Optimix template file. Are you sure you want to save over it?

Yes   No
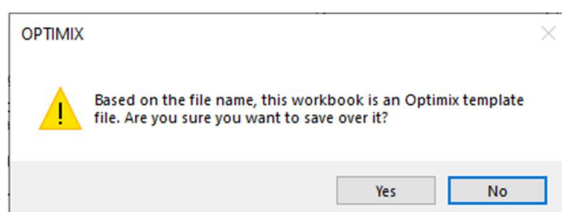
Getting help

Optimix is supported software and should not be used if you don't have an active support contract with Beacon Partnership because you will not be receiving critical updates.

If you require assistance with the model, please follow these steps:

- **Step 1**: Ask the lead person in your organisation – they may have received higher levels of training in using Optimix, and/or may have a longer period of experience in using Optimix.

- **Step 2**: Consult the section of this user guide pertaining to the area/function that you need help with – use the index at the end if you're not sure where to look.

- **Step 3**: If the above steps have failed to resolve your query, you can launch a draft email to the Optimix support email (optimixsupport@beaconpartnership.com) by clicking the below on the *Welcome* sheet:

- **Step 4**: If you would prefer to speak directly to a member of the team, we can be reached via telephone as follows:

Optimix Support Line:	0203 603 2331
Beacon Partnership LLP office:	0203 066 1061

4. Assumptions & settings

The calculations performed by Optimix are based on a configurable set of assumptions. These can be found on the *Assumptions* sheet.

To display the *Assumptions* sheet, make sure that the checkbox on the *Welcome* sheet is ticked:

Scheme Assumptions vs Standard Assumptions

The left side of the *Assumptions* sheet **(Columns C to R)** shows the *Scheme Assumptions Used*:

This section lists the set of assumptions that are used in the modelling of the current appraisal. A pale-green colour denotes cells that are editable, so these assumptions can be changed by the user.

Scrolling to the right, you will see the *Standard Assumptions* section **(Columns T to AI)**:

This section lists your organisation's set of default assumptions. A pale-blue colour denotes cells which can only be edited after being unlocked by entering the superuser password, so these assumptions are protected from inadvertently being changed by the user.

> **IMPORTANT:**
>
> Assumption values of each type should usually be specified under every column (i.e. for every tenure) under which an input cell exists, whether or not you anticipate modelling units of that tenure within the current appraisal or any future ones. It is usually better to either set an assumption to zero, or to mirror the value under another tenure, than to leave it empty.

If a Scheme Assumption is specified by the user which differs from the equivalent Standard Assumption, this will override the Standard Assumption and be applied to internal calculations, but **only in the current appraisal** – the default standard assumption will remain the same.

If any of the Scheme Assumptions used differ from the Standard Assumptions, this will be indicated by a red status message in **Cells D4 and U4** advising that there are BESPOKE ASSUMPTIONS USED. To the right of the *Standard Assumptions* section, in **Columns AS to BC**, the user can check which of the Scheme Assumptions differ from the Standard Assumptions, indicated by a cell coloured red and containing FALSE:

GENERIC / DATES	LONDON AFFORDABLE RENT	TARGET RENT	MARKET RENT	SHARED OWNERSHIP	LONDON LIVING RENT	DISCOUNTED SALE	PRIVATE SALE	RESIDENTIAL TOTAL	NON RESIDENTIAL RENT	NON RESIDENTIAL SALE
								For info Only		
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE
TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE		TRUE	TRUE
	TRUE	FALSE	TRUE							

If all Scheme Assumptions match their equivalent Standard Assumptions, this message in **Cells D4 and U4** will be STANDARD ASSUMPTIONS USED.

Assumption groups

Assumptions are organised into the following headings and subheadings:

Inflation assumptions

These are the rates by which the various incomes and costs in the discounted cashflow will be increased year-on-year **(Rows 7 to 39)**. These include:

- **Rent inflation (Rows 8 to 14)**: This allows up to 6 different rent inflation rates to be used across the DCF period for each tenure.
    - **Target Rent Cap Margin (Row 15)**: This cell refers to the percentage uplift above CPI that should be applied to the rent cap. Government policy on this is currently 0.5% and therefore this should not be changed unless that policy is changed.

- **Property price inflation (Rows 17 to 23)**: This allows up to 6 different property price inflation rates to be used across the DCF period in relation to Low Cost Home Ownership tenures.

- **Service charge cost inflation (Rows 25 to 27)**: This allows up to 3 different service charge cost inflation rates to be used across the DCF period for rented tenures.

- **Management cost inflation (Rows 29 to 31)**: This allows up to 3 different management cost inflation rates to be used across the DCF period for residential and non-residential (commercial) rented tenures.

- **Maintenance cost inflation (Rows 33 to 35)**: This allows up to 3 different maintenance cost inflation rates to be used across the DCF period for rented tenures.

- **Sinking fund inflation (Rows 37 to 39)**: This allows up to 3 different sinking fund inflation rates to be used across the DCF period for rented tenures.

Operational assumptions

Operational Costs set as % of Gross Rent	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%		0.0%
Management Cost Per Unit	£ 650	£ 650	£ 650	£ 650		£ 650		£ 650
Maintenance Cost Per Unit	£ 650	£ 650	£ 650	£ 650		£ 650		£ 650
Voids & Bad Debts Rate	3.00%	3.00%	3.00%	3.00%	5.00%	3.00%		3.00%
Management Cost Per Unit - SO							£ 100	£ 100
Maintenance Cost Per Unit - SO							£ 500	£ 500
Last Year for Maintenance Costs							10	10
Bad Debts Rate - SO							0.50%	0.50%

These characterise the operating costs that are factored into the long-term financial viability calculations in Optimix and are located on **Rows 41 to 48**, including:

- **Operational Costs set as % of Gross Rent (Row 41)**: This allows calculation of total operational costs as a percentage of gross annual rental income from each tenure.
  - If you specify a non-zero % value in any of these cells, consider whether you could be double-counting costs if you also enter monetary values for *Management Cost Per Unit*, *Maintenance Cost Per Unit*, or *Voids & Bad Debts Rate* cells under that tenure.

- **Management Cost Per Unit (Row 42)**: The annual cost per unit for housing management.

- **Maintenance Cost Per Unit (Row 43)**: The annual cost per unit for ongoing housing maintenance.

- **Voids & Bad Debts Rate (Row 44)**: The percentage of gross rent used as the basis for calculating the cost of void periods and bad debts.

- **Management Cost Per Unit – SO (Row 45)**: The annual cost per unit for housing management for Shared Ownership and Rent to Buy / London Living Rent tenures.

- **Maintenance Cost Per Unit – SO (Row 46)**: The annual cost per unit for day-to-day maintenance for Shared Ownership and Rent to Buy / London Living Rent tenures (brings modelling in Optimix in line with the 2021 funding rules).

- **Last Year for Maintenance Costs (Row 47):** The final year of the DCF for which the model will factor in ongoing maintenance costs for SO and LLR (brings modelling in Optimix in line with the post-2021 funding rules).

- **Bad Debts Rate - SO (Row 48):** The percentage of gross rent used as the basis for calculating bad debt costs related to Shared Ownership and Rent to Buy / London Living Rent tenures.

Sinking fund assumptions

These are the long-term assumptions related to calculation of sinking fund costs **(Rows 50 to 87)**. Rows in this section will be automatically hidden or revealed according to which sinking fund types are selected. Assumptions in this section include:

- **Sinking Fund Type (Row 50):** The basis upon which sinking fund costs are calculated. Users can select from:
    - Per Unit (see *Sinking Fund Per Unit* below)
    - % Rebuild (see *Sinking Fund Rebuild Cost per m²* below)
    - Whole Life (see *Whole Life – Component* below)
    - Stock Condition (please refer to the *Stock Condition* section for further details)

  PLEASE NOTE: Sinking fund assumption inputs on rows under *Sinking Fund Type* will have their values greyed out if the setting applies to a Sinking Fund Type other that the one currently selected under the tenure in each column. You will notice this if a mixture of Sinking Fund Types is selected across different tenures, as shown below:

BESPOKE ASSUMPTIONS USED	GENERIC / DATES	AFFORD ABLE RENT	INTERM EDIATE RENT	LONDON AFFORD ABLE RENT	MANUA L RENT	MARKET RENT	TARGET RENT	SHARED OWNERS HIP	RENT TO BUY
NPV	£0	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
Hurdles Not Passed									
Sinking Fund Type		% Rebuild	Per Unit	% Rebuild	Whole Life	% Rebuild	Stock Cond'n	-	% Rebuild
Sinking Fund Per Unit		£ 1,500	£ 1,500	£ 1,500	£ 1,500	£ 1,500	£ 1,500		£ 1,500
Sinking Fund (Start Year, Measured from CF Start)		6	6	6	6	6	6		6
Sinking Fund - Rebuild Cost per m2		£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ -	£ 2,500		£ 2,500
Sinking Fund % - Years 1-5 (NR)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
Sinking Fund % - Years 6-10 (NR)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%		0.80%
Sinking Fund % - Years 11-15 (NR)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%		0.80%
Sinking Fund % - Years 16-20 (NR)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%		0.80%
Sinking Fund % - Years 21-25 (NR)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%		0.80%
Sinking Fund % - Years 26-30+ (NR)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%		0.80%
Sinking Fund % - Years 1-5 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%		1.00%
Sinking Fund % - Years 6-10 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%		1.00%
Sinking Fund % - Years 11-15 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%		1.00%
Sinking Fund % - Years 16-20 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%		1.00%
Sinking Fund % - Years 21-25 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%		1.00%
Sinking Fund % - Years 26-30+ (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%		1.00%
Whole Life - Component 1 - Frequency (yrs)	Kitchen	20	20	20	20	20	20		20
Whole Life - Component 1 - Repair/Replace Cost	Kitchen	£ 3,800	£ 3,800	£ 3,800	£ 3,800	£ 3,800	£ 3,800		£ 3,800
Whole Life - Component 2 - Frequency (yrs)	Heating	20	20	20	20	20	20		20
Whole Life - Component 2 - Repair/Replace Cost	Heating	£ 5,300	£ 5,300	£ 5,300	£ 5,300	£ 5,300	£ 5,300		£ 5,300

- **Sinking Fund Per Unit (Row 51)**: The rate per unit at which sinking fund costs are calculated. Applicable if the *Per Unit* option is selected as the *Sinking Fund Type*.

  PLEASE NOTE: Leaving this input **empty** when the *Sinking Fund Type* is set to *Per Unit* for the same tenure will result in an audit failure, to draw attention to the resultant absence of Sinking Fund costs in the long-term cashflow. However, directly inputting zero, or a formula which evaluates to zero, will not cause an audit failure, but will cause the cell to be highlighted orange:

BESPOKE ASSUMPTIONS USED	GENERIC / DATES	AFFORD ABLE RENT	INTERME DIATE RENT	LONDON AFFORD ABLE RENT	MANUAL RENT	MARKET RENT	TARGET RENT	SHARED OWNERS HIP	RENT TO BUY
NPV	£0	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
Hurdles Not Passed									
Sinking Fund Type		% Rebuild	% Rebuild	Per Unit	% Rebuild	% Rebuild	% Rebuild		% Rebuild
Sinking Fund Per Unit				£ -					
Sinking Fund (Start Year, Measured from CF Start)		6	6	6	6	6	6		6
Sinking Fund - Rebuild Cost per m2		£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ -	£ 2,500		£ 2,500
Sinking Fund % - Years 1-5 (NB)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
Sinking Fund % - Years 6-10 (NB)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%		0.80%

- **Sinking Fund (Start Year) (Row 52)**: The year of the discounted cashflow from which sinking fund costs will be factored into calculations.

- **Sinking Fund Rebuild Cost per m² (Row 53):** The rate per square metre at which sinking fund costs are calculated. Applicable if the *% Rebuild* option is selected as the *Sinking Fund Type*.

  PLEASE NOTE: Leaving this input **empty** when the *Sinking Fund Type* is set to *% Rebuild* for the same tenure will result in an audit failure, to draw attention to the resultant absence of Sinking Fund costs in the long-term cashflow. However, directly inputting zero, or a formula which evaluates to zero, will not cause an audit failure, but will cause the cell to be highlighted orange:

BESPOKE ASSUMPTIONS USED	GENERIC / DATES	AFFORD ABLE RENT	INTERME DIATE RENT	LONDON AFFORD ABLE RENT	MANUAL RENT	MARKET RENT	TARGET RENT	SHARED OWNERS HIP	RENT TO BUY
NPV	£0	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
Hurdles Not Passed									
Sinking Fund Type		% Rebuild	% Rebuild	Per Unit	% Rebuild	% Rebuild	% Rebuild		% Rebuild
Sinking Fund Per Unit				£ -					
Sinking Fund (Start Year, Measured from CF Start)		6	6	6	6	6	6		6
Sinking Fund - Rebuild Cost per m2		£ 2,500	£ 2,500	£ 2,500	£ 2,500	£ -	£ 2,500		£ 2,500
Sinking Fund % - Years 1-5 (NB)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
Sinking Fund % - Years 6-10 (NB)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%		0.80%

- **Sinking Fund % (NB) (Rows 54 to 59)**: The percentage rate at which sinking fund costs are calculated for each 5-year period in the long-term cashflow for new build schemes. Applicable if the *% Rebuild* option is selected as the *Sinking Fund Type*. This usually ranges from 0.5% to 1.0%.

- **Sinking Fund % (RF) (Rows 60 to 65)**: The percentage rate at which sinking fund costs are calculated for each 5-year period in the long-term cashflow for refurbishment schemes. Applicable if the *% Rebuild* option is selected as the *Sinking Fund Type*. This usually ranges from 0.8% to 1.2%.

Sinking Fund % - Years 1-5 (NB)		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sinking Fund % - Years 6-10 (NB)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%	0.80%
Sinking Fund % - Years 11-15 (NB)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%	0.80%
Sinking Fund % - Years 16-20 (NB)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%	0.80%
Sinking Fund % - Years 21-25 (NB)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%	0.80%
Sinking Fund % - Years 26-30+ (NB)		0.80%	0.80%	0.80%	0.80%	0.00%	0.80%	0.80%
Sinking Fund % - Years 1-5 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%	1.00%
Sinking Fund % - Years 6-10 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%	1.00%
Sinking Fund % - Years 11-15 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%	1.00%
Sinking Fund % - Years 16-20 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%	1.00%
Sinking Fund % - Years 21-25 (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%	1.00%
Sinking Fund % - Years 26-30+ (RF)		1.00%	1.00%	1.00%	1.00%	0.00%	1.00%	1.00%

- **Whole Life – Component (Rows 66 to 85)**: These rows will be revealed if the *Whole Life* option is selected as the *Sinking Fund Type* under any tenure as a Scheme Assumption or Standard Assumption.
    - **Frequency (yrs)**: How often each of up to 10 user-definable components of a residential unit will need to repaired or replaced.
    - **Repair/Replace Cost**: The cost of the repair/replacement of each component.
    - The component that each pair of frequency/repair cost assumptions relates to can be specified by the user in the pale green input cells in **Column E**, e.g. Kitchen, Heating, etc below:

Whole Life - Component 1 - Frequency (yrs)	Kitchen	20	20	20	20	20	20		20
Whole Life - Component 1 - Repair/Replace Cost	Kitchen	£ 3,800	£ 3,800	£ 3,800	£ 3,800	£ 3,800	£ 3,800		£ 3,800
Whole Life - Component 2 - Frequency (yrs)	Heating	20	20	20	20	20	20		20
Whole Life - Component 2 - Repair/Replace Cost	Heating	£ 5,300	£ 5,300	£ 5,300	£ 5,300	£ 5,300	£ 5,300		£ 5,300
Whole Life - Component 3 - Frequency (yrs)	Doors	25	25	25	25	25	25		25
Whole Life - Component 3 - Repair/Replace Cost	Doors	£ 2,100	£ 2,100	£ 2,100	£ 2,100	£ 2,100	£ 2,100		£ 2,100
Whole Life - Component 4 - Frequency (yrs)	Bath	25	25	25	25	25	25		25
Whole Life - Component 4 - Repair/Replace Cost	Bath	£ 2,200	£ 2,200	£ 2,200	£ 2,200	£ 2,200	£ 2,200		£ 2,200
Whole Life - Component 5 - Frequency (yrs)	Rewire	25	25	25	25	25	25		25
Whole Life - Component 5 - Repair/Replace Cost	Rewire	£ 4,300	£ 4,300	£ 4,300	£ 4,300	£ 4,300	£ 4,300		£ 4,300
Whole Life - Component 6 - Frequency (yrs)	Window	30	30	30	30	30	30		30
Whole Life - Component 6 - Repair/Replace Cost	Window	£ 5,200	£ 5,200	£ 5,200	£ 5,200	£ 5,200	£ 5,200		£ 5,200
Whole Life - Component 7 - Frequency (yrs)	Roof	40	40	40	40	40	40		40
Whole Life - Component 7 - Repair/Replace Cost	Roof	£ 13,100	£ 13,100	£ 13,100	£ 13,100	£ 13,100	£ 13,100		£ 13,100
Whole Life - Component 8 - Frequency (yrs)									
Whole Life - Component 8 - Repair/Replace Cost									
Whole Life - Component 9 - Frequency (yrs)									
Whole Life - Component 9 - Repair/Replace Cost									
Whole Life - Component 10 - Frequency (yrs)									
Whole Life - Component 10 - Repair/Replace Cost									

- **R2B/LLR SF Active (Row 86)**: Determines whether sinking fund calculations apply to the rent element, Shared Ownership element, or both elements of Rent to Buy / London Living Rent products in the discounted cashflow.

- **Last Year for Sinking Fund (Row 87)**: The number of years after the initial sale event that sinking fund costs will be included in discounted cashflow calculations for Shared Ownership and Rent to Buy / London Living Rent products.

Financing assumptions

These are the long-term assumptions related to interest and performance calculations **(rows 89 to 107)**, which include:

- **Capitalised Interest on Negative Balances (Row 89)**: The interest rate used in the development cashflow on negative balances.

- **Capitalised Interest on Positive Balances (Row 90)**: The interest rate used in the development cashflow on positive balances.

  IMPORTANT: You will notice that there are also some **tenure-specific** capitalised interest assumptions in the screenshot above which appear greyed out. These assumption inputs become activated and applicable dependent on the selected *Stop Capitalised Interest at* setting – please see the *Advanced Settings* section (page 24) for more information.

- **Long-term Loan Interest (Rows 91 to 97)**: These are the interest rates used in the long-term cashflow for loan payback calculations for each tenure, allowing up to 7 different rates to be specified across the DCF period.

- **Annuity Period (Row 98)**: The number of years over which the annuity cashflow runs. This is only used in calculations for the various *Annuity Illustration* sections of the *DCF* worksheet.

- **Annuity Rate (Row 99)**: The interest rate used in annuity cashflow calculations. This is only used in calculations for the various *Annuity Illustration* sections of the *DCF* worksheet.

- **Discount Rate (Rows 100 to 106)**: These are the discount rates used in the long-term cashflow for each tenure, allowing up to 7 different rates to be specified across the DCF period.

- **Discount Period (Row 107)**: The number of years over which the discounted cashflow runs – can be set to a minimum of 1 year and a maximum of 100 years.

Hurdle assumptions

These are the threshold values used in assessing the appraisal output in terms of various metrics **(Rows 109 to 115)**. Comparison of the output with these values will produce either a pass or fail result. These

results are highlighted in green/red in several places within Optimix (most notably on the *Summary* and *Tenure* reports, and in summary form on the *Resi Units* and *Non Resi Units* worksheets).

Hurdle values can only be changed in the blue cells in **Columns V to AI** after a superuser provides the password to edit the cells.

Staircasing assumptions (including grant reclaim)

	Is there to be staircasing?							Yes	Yes
	Year of first Staircasing							6	6
	Last Year of Staircasing							30	30
STAIRCASING	Staircasing Ceiling							80%	80%
	Recover GLA/HE Grant							Yes	Yes
	Recover LA Grants/RTB Receipts							Yes	Yes
	Recover RCGF/DPF							Yes	Yes
	Recover Other Funding							Yes	Yes

The *Staircasing* section relates to changes in the unsold equity on Shared Ownership and Rent to Buy / London Living Rent units **(Rows 117 to 124)**:

- **Is there to be staircasing (Row 117)**: Controls whether staircasing calculations are switched on or off.

- **Year of first Staircasing (Row 118)**: The first year in the cashflow for which staircasing is calculated.

- **Last Year of Staircasing (Row 119)**: The last year in the cashflow for which staircasing is calculated.

- **Staircasing Ceiling (Row 120)**: The maximum equity share allowed in staircasing calculations.

- **Recover GLA/HE Grant (Row 121)**: Controls whether the model will deduct pro rata grant funding from staircasing receipts.

- **Recover LA Grants / RTB Receipts (Row 122)**: Controls whether the model will deduct pro rata LA grant funding / RTB receipts from staircasing receipts.

- **Recover RCGF/DPF (Row 123)**: Controls whether the model will deduct pro rata RCGF / DPF from staircasing receipts.

- **Recover Other Funding (Row 124)**: Controls whether the model will deduct other pro rata funding from staircasing receipts.

	Method of Reclaiming Grant							GLA 21-26 Rules
LLR/R2B Grant	First Tranche Grant Split							60%
	Second Tranche Grant Split (Staircasing)							40%
	Year Threshold							10

The *LLR/R2B Grant* section relates to how the reclaim of grant funding is modelled in the long-term cashflow for the Rent To Buy / London Living Rent tenure **(Rows 125 to 128)**:

- **Method of Reclaiming Grant (Row 125)**

  - When *Standard SO* is selected, cashflow calculations will reflect grant funding being reclaimed only during the Shared Ownership period, with no reclaim occurring during the rental period or at the point of conversion to sale. The mechanism for grant reclaim during the Shared Ownership period is the same as on traditional Shared Ownership.

- o When *GLA 21-26 Rules* is selected, cashflow calculations will model the explicit rules listed for London Living Rent in the GLA's grant funding documents under the Affordable Homes Programme 2021-2026.
  - ▪ If the length of the assumed rental period (currently 10 years, but can be specified under the *Year Threshold* assumption) before the point of conversion to sale is less than the minimum stated in the funding documents, the percentage of grant funding specified by the *First Tranche Grant Split* assumption below (referred to as the Intermediate Rented proportion of the grant allocation) will be reclaimed proportionally at the point of conversion to sale, with the remainder written off during the years of the rental period.
  - ▪ The *Second Tranche Grant Split* percentage of grant funding is then reclaimed over the sale period as it would be under traditional Shared Ownership.
  - ▪ See your Homes England and GLA funding contracts, the respective Capital Funding Guides and the Recovery Determination for further information.

- **First Tranche Grant Split (Row 126)**: When the *Method of Reclaiming Grant* is set to *GLA 21-26 Rules*, this represents the percentage of the London Living Rent grant allocation that relates to the product's rental period and will be proportionally reclaimed if the assumed rental period is less than the Year Threshold.
  - o Currently this would always be set to 60%, but we have provided the facility to change it to allow for future products / funding rule changes.

- **Second Tranche Grant Split (Row 127)**: Calculated automatically – represents the element of the London Living Rent grant allocation that relates to the product's sale period and will be reclaimed in the traditional manner for Shared Ownership as staircasing occurs.

- **Year Threshold (Row 128)**: When *Method of Reclaiming Grant* is set to *GLA 21-26 Rules*, the value set for this assumption represents the length of the expected rental period under the GLA's funding documents.
  - o The funding documents currently stipulate this to be 10 years, but we have provided the facility to change this value to allow for future products/funding rule changes.
  - o If the rent-to-sale conversion year set in **Cell BC14** on the *Resi Units* sheet for the London Living Rent tenure is lower than this threshold, the model will reclaim the relevant proportion of the *First Tranche Grant Split* (the element of the London Living Rent grant allocation relating to the rental period) at conversion to sale.
  - o The remainder of the element of the London Living Rent grant allocation relating to the rental period is written off by the GLA over the rental period and is not reclaimed.

Consolidator – Custom Fields

These are not assumptions – however, we chose to locate them on the *Assumptions* sheet for ease of reference **(Cells U141 to V145)**, as they represent part of the configuration of your master Optimix template.

If your organisation uses the Optimix Consolidator, these cells can be used to describe and define fixed or calculated values that you want to be exported into the Consolidator from each appraisal comprising

a consolidated programme, but which are not already exported by default by Optimix. These values are listed on the *Scheme Information* report of the Consolidator.

The superuser can assign each one a description (by replacing the *Custom Field 1, 2, 3…* labels shown above) in **Column U**, then set each export field to be either a fixed value, or perhaps more usefully, enter a formula that refers to existing data points within the model, in **Column V**.

This allows you to customise part of the exported data set to make additional bespoke values available for further calculations, perhaps on User Sheets, in the Consolidator.

As these are pale-blue input cells, they can only be edited by a superuser after providing the password.

Advanced settings

This section **(Rows 149 to 177)** is comprised of miscellaneous other assumptions and advanced settings related to cashflow calculations, performance and efficiency outputs, and various other options. As these are pale-blue input cells, they can only be edited **(in Columns V to AI)** by a superuser after providing the password.

The advanced settings include:

- **Weeks Per Year (Row 149)**: This is the number of weeks per calendar year which the model uses to calculate annual rents based on weekly rent.
  - You may think that this value should be quite obvious and therefore could be fixed. However, an option is included in Optimix for this because organisations can differ on how they define the number of weeks in a year.
  - For example, you could set this simply as the number of 7-day periods in 365 days (52.14); or as the number of 7-day periods per year across a four-year period, in order to account for a Leap Day (52.18); or as 52 x 7-day periods (364 days) plus one working day (0.2 weeks, with a working week being Mon-Fri)… or any other methodologies for defining this.

- **VAT Rate for On-Costs (Row 150)**: The percentage rate used to calculate VAT applicable to On Costs under each tenure.

- **Inflate Management Costs Pre-PC (Row 151)**: This determines whether inflation rates are also applied to cashflow calculations related to any management costs incurred in the period between the *Base Year for Operational Costs* (see below) and the date set for *Practical Completion*.

- **Inflate Maintenance Costs Pre-PC (Row 152)**: This determines whether inflation rates are also applied to cashflow calculations related to any ongoing maintenance costs incurred in the period between the *Base Year for Operational Costs* (see below) and the date set for *Practical Completion*.

- **Inflate Sinking Fund Costs Pre-PC (Row 153)**: This determines whether inflation rates are also applied to cashflow calculations related to any sinking fund costs incurred in the period between the *Base Year for Operational Costs* (see below) and the date set for *Practical Completion*.

- **Base Year for Operational Costs (Row 154)**: This is the year from which management and maintenance costs apply. This setting should always be the financial year-end in which your management cost per unit **(Rows 42 and 45)** and maintenance cost per unit **(Rows 43 and 46)** assumptions were set. If *Practical Completion* is set to occur after this base year – and the associated *Inflate … Pre-PC* option above is set to Yes – then those costs are inflated.

- **Mid-Point Development Interest Calculation (Row 155)**: This determines whether monthly interest calculations in the development cashflow are timed at month-ends or at the midpoint of each month.

- **Stop Capitalised Interest at (Row 156)**: The setting in **Column V** on this row determines whether interest capitalisation is calculated up to the *Practical Completion*, *Scheme Last Sale*, or *Scheme Last Payment* milestones for all tenures.
    - If this setting is set to *Individual Tenure*, then the settings in **Columns W to AI** on this row become activated and can be used control when interest capitalisation calculations end on a tenure-specific basis.

- **Include Liquidity / Non-Utilisation Costs (Row 157)**: This determines whether a non-utilisation charge is applied based on committed expenditure that has not been spent. It should be noted that the non-utilisation charge is included in capitalised interest figures, and that this assumption cannot be changed in the Consolidator.

- **Liquidity / Non-Utilisation Costs (rate per year) (Row 158)**: This determines the annual rate at which non-utilisation charges are calculated. This applies only if *Include Liquidity / Non-Utilisation Costs* above has been set to Yes.

- **Create Audit failure if gross rents exceed LHA (Row 159):** If the gross weekly rent amounts calculated based on your inputs on the *Resi Units* sheet exceed the weekly Local Housing Allowance rate for the relevant ward/BRMA, this setting will determine on a tenure-specific basis whether the *Resi Units* sheet audit flag will evaluate to FALSE.

- **Exclude Service Charge from Voids & Bad Debts (rent period) (Row 160)**: This determines whether service charges are excluded from Voids and Bad Debts calculations applicable to rented tenures (and the rent period of Rent to Buy / LLR products).

- **Exclude Service Charge from Voids & Bad Debts (SO period) (Row 161)**: This determines whether service charges are excluded from Voids and Bad Debts calculations applicable to the shared ownership element of the Shared Ownership and Rent to Buy / LLR products.

- **Select Inflation Rate for Service Charge Income (Row 162)**: This allows the user to select, on a tenure-specific basis, whether service charges are inflated by the applicable rate for rent inflation **(Rows 8 to 14)** or by the applicable rate for service charge costs inflation **(Rows 25 to 27)**.

- **End of Year or Mid Year Discounting (Row 163)**: This determines whether the discount rate is applied at the end of each year or part-way through each year in the discount cashflow calculations.

- **Mid Year discounting offset if used (Row 164):** If *End of Year or Mid Year Discounting* above is set to *Mid*, this determines the size of the timing adjustment to discount compounding.
  - This can be set to a maximum of one full year (1.0), but a typical value would be 0.5 to represent the midpoint of the year, which reduces the length of the discount period by half a year.

- **Include Revenue Period for IRR calculation (Row 165):** For tenures with no rental element (Private Sale, Discounted Sale and Non-Residential Sale), this determines whether the revenue period will be factored into calculation of Internal Rate of Return metrics.
  - Please note that the Consolidator reports IRR on the construction period only for sale tenures.

- **Stop Revenue Cashflow at Year (Row 166)**: This allows control of when calculations in the revenue period of the long-term cashflow stop for each tenure. If this left is empty, cashflows will be calculated over a full 100-year period.

- **Staircasing later than CF Stop (Row 167)**: These cells are output-only, true/false flags to indicate whether the stop year for staircasing **(Row 119)** is later than the last year of cashflow calculations (determined by the *Stop Revenue Cashflow at Year* assumption above).
  - If it is, the cell will be coloured red to indicate a problem and the flag set to FALSE; otherwise, it will be green and set to TRUE to confirm no action is required.

- **Staircasing Ceiling Calculation (Row 168)**: This determines whether the staircasing percentage is calculated based on a property's total value or only on the value of the unsold equity. Please see the *Good to know…* information box on page 27 for further important details.

- **Staircasing in Mid Year instead of End of Year (Row 169)**: This determines whether cashflow calculations are based on receipt of staircasing income occurring part-way through the year, instead of the default setting whereby this occurs at year end.

- **Reduce Management Cost with Staircasing (Row 170)**: This determines whether annual management costs in the cashflow are reduced year to year, proportionate to the increasing equity share, as staircasing occurs.

- **Reduce Maintenance Cost with Staircasing (Row 171)**: This determines whether annual maintenance costs in the cashflow are reduced year to year, proportionate to the increasing equity share, as staircasing occurs.

- **Reduce Sinking Fund with Staircasing (Row 172)**: This determines whether annual sinking fund costs in the cashflow are reduced year to year, proportionate to the increasing equity share, as staircasing occurs.

- **Non-residential cashflow calculation method (Row 173)**: The cashflow for the Non-Residential Rent tenure was expanded in v3.2.16. This setting has therefore been added to control whether this updated calculation method (*Standard*) or the method from older versions (*Legacy*) is used for units under that tenure in your appraisal. If you see a variance in

Non-Residential Rent NPV after import, setting this to *Legacy* should ensure that it matches the NPV output from those older versions.

- **Inflate non-resi rent from handover to first let (Row 174)**: This controls whether inflation is applied to gross annual rent income from units under the Non-Residential Rent tenure prior to the first letting period commencing.

- **Net to gross floor area upper/lower bounds (Rows 175 and 176)**: These represent the maximum and minimum limits on acceptable values for the ratio of NIA to GIA when calculating design efficiency metrics.

- **Secondary Financial Indicator on Costs & Grants (Row 177):** This determines which metric is displayed on **Row 5** of the *Costs & Grants* sheet in addition to NPV. Users can choose *Cost to Value* ratio or *Internal Rate of Return (IRR)*:

> **Good to know…**
>
> **Staircasing Ceiling Calculation**
>
> When staircasing is set to a fixed percentage of the property value, rather than a percentage of unsold equity, it follows that units with a higher initial sale percentage will undergo less staircasing than units with a lower initial sale percentage. This is because the units with a higher initial sale percentage are closer to the staircasing ceiling to begin with.
>
> The Shared Ownership cashflow takes the initial sales percentage as the average of the various initial sales percentages across all units. Staircasing is then calculated starting from this average initial sales percentage up to the staircasing ceiling throughout the staircasing period.
>
> As staircasing occurs, the average annual rent decreases to reflect the fact that owners have increased their equity and are therefore paying lower rents. This is the way staircasing is forecast in all major models.
>
> However, it is important to note that a different NPV result is generated when staircasing is calculated for the individual unit types where they have different initial sales percentages AND different rents.
>
> This means that there may be a difference in the NPV results output for Shared Ownership and London Living Rent on the *Optimix* report after running the Optimiser tool than is produced elsewhere in the model.
>
> This is illustrated below where the two red figures for rent reduction differ:

£200k flat, staircasing ceiling of 50% over 10 years

	Property 1	Property 2	Sum	Average
Initial Sale	50%	25%		
Rent %	2%	0%		
Rent p.a.	£2,000	£0	£2,000	£1,000
Staircasing p.a.	0%	2.5%		1.25%
Rent Reduction p.a. (%)	0%	2.5%		1.25%
Rent Reduction p.a. (£)	£0	£0	£0	£125

5. Residential units

<div style="background-color:green">

IMPORTANT:

As mentioned in the introductory section of this user guide, the screenshots in this section contain example or test inputs included solely to illustrate how they are used in this area of Optimix, and to show you where and how they are presented.

They are not representative of any realistic inputs, averages or benchmarks for real-world housing development schemes, and are not indicative of the inputs you may or may not need to produce a viable/non-viable scheme within your organisation.

</div>

The *Resi Units* input sheet is divided into sections arranged horizontally, each of which has a *Notes* area underneath for free text or formula entry by the user:

Notes:

The leftmost section **(Columns B to L)** contains input and output areas related to:

- the key attributes of an appraisal (such as the *Scheme Name*, the *Local Authority* covering the area of the development, the associated *Broad Rental Market Area*, etc)

- the main milestone dates in the development of the scheme

- the *Residential Unit Schedule*, i.e. the specification of different unit types comprising the scheme and their characteristics, including internal area, market valuations and weekly rent figures

- the key financial indicators/metrics for the scheme as a whole (these will change as you perform further data entry on this and other sheets which affect their calculation)

Optimix	Beacon		VERSION	v3.2.20	SCHEME TOTAL		
			AUDIT	TRUE			Total
Scheme Name	Test scheme				Units		75
Project Manager	Vince				Some Tenure Hurdles Not Met		Total
Local Authority	Croydon		Type	New Build	Total Scheme Costs		£54,139,020
Ward (For LLR)	Coulsdon Town				Sales Income / Capital Subsidy		£ 7,865,367
BRMA	Outer South London				Retained Profit		£ -
DATES					Long Term Debt Required		£46,273,653
Index to 1999 values from	25/10/2024	Start on Site		14/08/2024	Present Value of Income		£46,339,559
Planning	07/05/2024	Prac Comp		22/11/2026	Net Present Value		£ 65,906
Acquisition	01/06/2024	TR/LAR Rent Year		22/11/2026	Cost/Val	251%	IRR 4.51%
BESPOKE ASSUMPTIONS USED					Cap all gross rents at LHA?		No

	Residential Unit Schedule							Weekly Rents		
Description	No. of Bedrooms	No. of Persons	NIA (SQM)	Circ. (SQM)	GIA (SQM)	Open Market Value	Target Rent Uplift (5%)	Market Rent	Manual Rent Input	Local Housing Allowance
Test 1	2	3	130	25	155	£ 245,000		£ 280.00		£ 276.16
Test 2	3	5	160	32	192	£ 375,000		£ 350.00		£ 345.21
					-					£ -
Test 3	1	2	85	17	102	£ 155,000		£ 220.00		£ 220.00
Test 4	3	5	154	31	185	£ 365,000		£ 350.00		£ 345.21

The sections to the right of this relate to the representation of different tenures within your scheme:

Rent Tenure 1
(Columns N to T)

Rent Tenure 2
(Columns V to AB)

Rent Tenure 3
(Columns AD to AJ)

AFFORDABLE RENT

Units		% 28%	Total 93
All Hurdles Met		Per Unit	Total
Total Scheme Costs		£ 24,730	
Sales Income / Capital Subsidy		£ 312	£ 5,657
Retained Profit		£ -	£ -
Long Term Debt Required		£ 24,628	
Present Value of Income			
Net Present Value			
Cost to Value Ratio		0%	IRR 27.65%
Cap gross rent at LHA?	No		

TARGET RENT

Units		% 12%	Total 38
All Hurdles Not Met		Per Unit	Total
Total Scheme Costs		£ 25,074	
Sales Income / Capital Subsidy		£ 389	£ 5,665
Retained Profit		£ -	£ -
Long Term Debt Required		£ 23,892	
Present Value of Income		-£223,447	
Net Present Value		-£259,339	
Cost to Value Ratio		12%	IRR NO IRR
Cap gross rent at LHA?	No	Supported housing?	No

MARKET RENT

Units		% 19%	Total 30
All Hurdles Met		Per Unit	Total
Total Scheme Costs		£ 25,316	
Sales Income / Capital Subsidy		£ 150	-£4,797
Retained Profit		£ -	£ -
Long Term Debt Required		£ 25,202	
Present Value of Income		£139,348	
Net Present Value		£153,435	
Cost to Value Ratio		0%	IRR 28.03%
Cap gross rent at LHA?	No		

Shared Ownership
(Columns AL to AR)

Rent to Buy / London Living Rent
(Columns AT to BE)

SHARED OWNERSHIP

Units		% 14%	Total 23
All Hurdles Met		Per Unit	Total
Total Scheme Costs		£23,209	
Sales Income / Capital Subsidy		£140,265	
Retained Profit		£ 4,785	£110,055
Long Term Debt & Retained Profit		-£ 15,391	
Present Value of Income			
NPV After Retained Profit			
Cost to Value Ratio		11%	IRR NO IRR

RENT TO BUY

Units		% 6%	Total 10
All Hurdles Met		Per Unit	Total
Total Scheme Costs		£ 24,123	
Sales Income / Capital Subsidy		£ 352	£ 3,515
Retained Profit		£ -	£ -
Long Term Debt Required		£ 23,772	
Present Value of Income		£ 314,742	
Net Present Value		£290,970	
Cost to Value Ratio		10%	IRR 39.28%
Cap gross rent at LHA?	No		
Rent to Buy Type		RENT TO BUY	Rental Years 10

Discounted Sale*
(Columns BG to BN)

Private Sale
(Columns BP to BU)

* First Homes is an example of a Discounted Sale product.

Visit this webpage for more information:
https://www.gov.uk/guidance/first-homes

For Rent Tenures 1, 2 and 3 above, you will notice that these sections are headed with the names of three particular rented tenures – Affordable Rent, Target Rent and Market Rent. However, there are three other rent tenures that organisations may need to model – Intermediate Rent, London Affordable Rent and Manual Rent, comprising six rent tenures in total.

3 of the 6 possible rent tenures are configured as your organisation's default Rent Types 1, 2 and 3 as part of the implementation process that we perform prior to issuing your master Optimix template. The descriptions that appear in your three *Rent Type* sections depend on this setup process and can also be seen in the *Appraisal Setup* section of the *Welcome* sheet (shown below). They may therefore differ from that shown in the screenshots above.

APPRAISAL SETUP	
Tenure Types	Add / Remove Tenures
Current Rent Types	☑ Rent Type 1 ☑ Shared Ownership
Type 1 - Affordable Rent	☑ Rent Type 2 ☑ Rent To Buy
Type 2 - Target Rent	☑ Rent Type 3 ☑ Discounted Sale
Type 3 - Market Rent	☑ Private Sale

The user is not restricted to using the 3 pre-configured rented tenure types – later in this section, you will see how the three tenures selected for data input on the *Resi Units* sheet – and the left-to-right order in which their input sections are displayed – can be changed by the user.

Key scheme information

The first cells to populate on this sheet are the key scheme information inputs found in **Rows 4 to 12**, as shown below:

No restrictions are enforced on the text entered in the *Scheme Name* and *Project Manager* input cells, as they are accepted only for the purpose of user reference.

Selection of the applicable *Local Authority* in **Cell C6** should be done using the dropdown:

…as should the scheme *Type* (either *New Build* or *Refurb*; **Cell H6**), and:

Ward (For LLR) (Cell C7): Applicable to schemes in London that include units under the London Living Rent tenure. The wards available in the dropdown depend on the selection made for *Local Authority*.

BRMA (Cell C8) Broad Rental Market Area – the areas available in the dropdown will depend on the selection made for *Local Authority*. This is used by the model to look up Local Housing Allowance levels on the *Rents* sheet.

The key scheme milestone dates should then be entered in the *Dates* section (**Cells B10 to H12**):

DATES			
Index to 1999 values from	25/10/2024	Start on Site	14/08/2024
Planning	07/05/2024	Prac Comp	22/11/2026
Acquisition	01/06/2024	TR/LAR Rent Year	22/11/2026

- **Index to 1999 values from ‡ (Cell C10)** Used as the effective date for the current property value when deflating/indexing back to the 1999 property value in Target Rent calculations. By default, this is formula-linked to the date on which the House Price Index values in the model were last updated by Beacon.

- **Planning (Cell C11)** — When planning permission for the development was obtained.

- **Acquisition (Cell C12)** — When ownership of the land to be used in the development was/will be secured.

- **Start on Site (Cell H10)** — When construction work began/will begin on site.

- **Practical Completion (Cell H11)** — When the construction phase of the project was/will be completed.

- **TR/LAR Rent Year (Cell H12)** — The effective starting date for rent calculations (relates to Target Rent and London Affordable Rent tenures) †

‡ this input, and its label, will only be displayed if the Target Rent tenure is one of the three selected rented tenures in your appraisal, and if there are units input under that tenure.

† by default, this date is formula-linked to match the *Practical Completion* date; however, users are free to change this date should they require TR/LAR rents to be calculated to a date other than that entered for PC.

Status messages

The user will also notice one or two status messages on **Row 13**, underneath the *Dates* section:

DATES			
Index to 1999 values from	25/10/2024	Start on Site	14/08/2024
Planning	07/05/2024	Prac Comp	22/11/2026
Acquisition	01/06/2024	TR/LAR Rent Year	22/11/2026
BESPOKE ASSUMPTIONS USED		DIRECT CASHFLOW INPUTS	

The first will display either STANDARD ASSUMPTIONS USED or BESPOKE ASSUMPTIONS USED.

- STANDARD ASSUMPTIONS USED: all values set as Scheme Assumptions match those set for Standard Assumptions
- BESPOKE ASSUMPTIONS USED: one or more values set as Scheme Assumptions differ to the equivalent values set as Standard Assumptions

If the *Revenue Income & Costs* sheet is activated and contains any inputs – i.e. it has an effect on the discounted cashflow – then the message DIRECT CASHFLOW INPUTS will be displayed.

If you select the cell containing this status, Optimix will offer to navigate directly to the *Revenue Income & Costs* sheet, where the direct cashflow inputs are located:

Scheme Total section

To the right of the key scheme information inputs section, you will notice in **Cells I2 to L13** an information panel entitled *Scheme Total*. This provides summary financial information and metrics about the scheme in your appraisal at a glance, as well as an indication of whether all, some or none of the hurdles set in your Scheme Assumptions have been met (see *Assumptions & settings*, page 21):

SCHEME TOTAL		
		Total
Units		257
Some Tenure Hurdles Not Met		Total
Total Scheme Costs		£56,389,433
Sales Income / Capital Subsidy		£27,268,041
Retained Profit		£ 360,882
Long Term Debt & Retained Profit		£29,482,274
Present Value of Income		£46,665,706
NPV After Retained Profit		£17,183,432
Cost/Val	99%	IRR 7.38%
Cap all gross rents at LHA?		No

These financial summary sections are repeated above each of the tenure-specific sections to the right, presenting the indicators and metrics for each tenure. If you click a hurdle indicator to select its cell, Optimix will offer to navigate directly to the *Financial Performance* section of the *Tenure* report, so that you can determine which hurdles have been passed or failed for that tenure:

TARGET RENT		
	%	Total
Units	12%	20
1/2 Hurdles Not Met	Per Unit	Total
Total Scheme Costs	£ 23,074	£461,490

OPTIMIX

? You selected the hurdle pass/fail summary for the Target Rent tenure - would you like to navigate to its financial performance metrics?

Yes   No

> **GOOD TO KNOW:**
>
> In **Cell L13**, you will find a yes/no dropdown input labelled *Cap all gross rents at LHA?*. As you might expect, this controls whether gross weekly rents under all four applicable tenures – i.e. the three selected rent tenures, and the LLR/R2B tenure – are to be capped at the level of Local Housing Allowance applicable to the BRMA and number of bedrooms of each unit type in the unit schedule.
>
> For more details on this LHA rent cap function, see page 41.

Entering the unit schedule

Starting on **Row 16**, users can populate the details of the various residential unit types to be developed under the scheme being appraised. This information comprises the *Residential Unit Schedule*:

Description	No. of Bedrooms	No. of Persons	NIA (SQM)	Circ. (SQM)	GIA (SQM)	Open Market Value	Target Rent (units) (%)	Market Rent	Manual Rent Input	Local Housing Allowance
					-					£ -
Unit Type A	3	5	15	30	45	£ 125,456	5%	£ 110.00		£ 172.60
					-					£ -
Unit Type B	1	2	84	19	103	£ 98,765	4%	£ 89.00		£ 136.93
Unit Type C	4	6	216	56	272	£ 234,567	5%	£ 260.00		£ 276.16
					-					£ -
Unit Type D	3	5	177	26	203	£ 177,777		£ 220.00		£ 195.62
Unit Type E	5	5	165	31	196	£ 188,888	5%	£ 210.00		£ 195.62
Unit Type F	2	3	141	30	171	£ 111,111		£ 150.00		£ 172.60
					-					£ -
Unit Type G	1	4	159	41	200	£ 555,555		£ 125.00		£ 172.60
					-					£ -
Unit Type H	3	5	181	39	220	£ 444,444	4%	£ 253.00		£ 195.62
Unit Type I	5	5	179	27	206	£ 432,109		£ 244.00		£ 195.62
					-					£ -
					-					£ -
Unit Type J	4	6	222	34	256	£ 555,555	5%	£ 290.00		£ 276.16
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
					-					£ -
TOTAL RESI	0	0	0	0	-	£ -				

To begin with, you have 20 blank input rows available. However, for each unit type after the first that you enter into the unit schedule, a new blank input row is revealed at the bottom of the unit schedule input area. This ensures that you always have at least 19 blank input rows at any given time (as shown above), up to a maximum of 100 residential unit types in total. Rows cleared of input will be automatically hidden to ensure that only 19 (or 20 if all inputs are cleared) blank input rows remain visible.

Cells coloured white contain calculated or looked up values, namely:

- GIA (SQM) in **Column G** is calculated as the sum of the NIA (SQM) and Circ. (SQM) inputs
- the applicable Local Housing Allowance looked up in **Column L** for homes in the specified BRMA and with the specified number of bedrooms per unit of each type

Inputs include:

- **Description**   **Column B**   Users are free to enter appropriate descriptions for each residential unit type.
  (required)

- **No. of Bedrooms**   **Column C**   Number of bedrooms each unit of this type will have.
  (required)

- **No. of Persons**   **Column D**   Number of residents each unit of this type can house.
  (required)

- **NIA (SQM)**   **Column E**   The Net Internal Area per unit of this type, in square metres.
  (required)

- **Circ. (SQM)**
  (required)

  Column F

  The circulation space per unit of this type, in square metres. To include areas such as lobbies, corridors, staircases, lifts, plant rooms, internal bin stalls or bike sheds, etc). Users often enter a formula in these cells to calculate this as a percentage of NIA.

- **Open Market Value**
  (required)

  Column H

  This is the value of each unit of this type at market levels. Used for social rent and sales income calculations.

- **Target Rent Uplift (5%)**

  Column I

  Used only for Target Rent calculations. Should only be set to a maximum of 10% for supported housing units, and a maximum of 5% for general needs units.

- **Market Rent**

  Column J

  Weekly rate used in rent calculations applicable to the Market Rent tenure and to other tenures whose net weekly rents are calculated as a specified percentage of this.

- **Manual Rent Input**

  Column K

  Used in calculations related to the Manual Rent tenure, this allows users to specify a weekly rate for the rent at the point of letting under that tenure.

Entering rent tenure units

Optimix allows up to three interchangeable rent tenures, in the sections contained within:

Columns N to T

Columns V to AB

Columns AD to AJ

Users can select which rent tenure each section will be used for, using the *Select Tenure* dropdown controls in **Cells P14, X14, AF14**:

Available rent tenures are as follows:

Manual Rent   based on the manual rent values specified in **Column K**

Market Rent   based on the market rent values specified in **Column J**

Intermediate Rent	based on a percentage of the specified market rent values, the remainder being subsidised to allow opportunity to buy the home later whilst saving for a deposit
Affordable Rent	based on a percentage of the specified market rent values
London Affordable Rent	based on rental values set by the GLA
Target Rent	rent calculated based on the formula specified in the Rent Standard (sometimes referred to as Formula Rent)

The input cells that are available for the chosen tenure type will be indicated by a pale green cell colour being applied automatically after the tenure has been selected from the dropdown. For example, if switching from Affordable Rent to London Affordable Rent, the display in that section will change from:

…to…

Note the removal of the green input cells under *% of Mkt. Rent* and the column header, which no longer apply to the selected tenure.

Good to know…

Optimix does **not** allow users to select the same rented tenure in more than one of the three available sections. If you select a tenure using the dropdown control in one section – and that tenure is already represented in one of the other two rent tenure sections – a warning will be displayed to advise that proceeding with the change will cause the positions of the current rent tenure section and the existing one to be swapped:
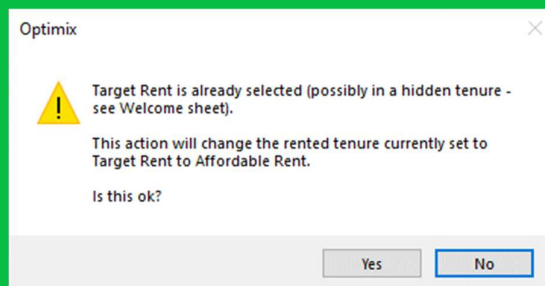
IMPORTANT: The respective inputs of the two rent tenure sections being swapped (e.g. *% of Mkt. Rent* and *Service Charge PW*) will be retained **but will remain in their previous position**. The user should check these inputs and, if necessary, manually swap them into each tenure's new position after the automatic section swap is completed:

Optimix will automatically calculate the appropriate net rent levels (**Columns Q, Y, and AG**) depending on rent tenure type selected, applicable property values and service charge rates. Gross rents (**Columns S, AA and AI**) will turn red if they exceed the Local Housing Allowance for that unit type (**Column L**):

In this scenario, in order to prevent the gross rent from exceeding LHA, Optimix users have three options:

- adjust *% of… Rent* and/or weekly rent inputs accordingly (if appropriate)

- use the *Overrides* section (**Columns CD to CI**) to adjust the net rent or LHA levels
  - more information on overrides can be found on page 39

- set the *Cap gross rent at LHA?* dropdown on **Row 13** to Yes
  - more information on the LHA rent cap function can be found on page 41

Target Rent net rent rates are calculated based on current property values deflated back to 1999. The result of these calculations for each unit type in your schedule can be viewed in **Columns BZ and CA**:

Target Rent	Automatic 1999 Values
£ 87.67	£ 37,992
£ 88.93	£ 40,227
£ 100.71	£ 48,049
£ 101.97	£ 50,284
£ 115.65	£ 61,458
£ -	£ -
£ -	£ -
£ -	£ -
£ -	£ -
£ -	£ -
£ -	£ -
£ -	£ -
£ -	£ -

Manual Rent

One of the two inputs indicated by the pale-green cells are required in a section with the Manual Rent tenure selected:

- *No. of Units* (required)
- *Service Charge (per week)*

Market Rent

No. of Units	Market Rent		Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Current Value
	£ -		£ -		£ -	£ -
	£ -		£ -		£ -	£ -

Select Tenure: MARKET RENT

One of the two inputs indicated by the pale-green cells is required in a section with the Market Rent tenure selected:

- *No. of Units* (required)
- *Service Charge (per week)*

Intermediate Rent

Select Tenure: INTERMEDIATE RENT

No. of Units	Market Rent	% of Int. Rent	Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Current Value
	£ -		£ -		£ -	£ -
	£ -		£ -		£ -	£ -

Two of the three inputs indicated by the pale-green cells are required in a section with the Intermediate Rent tenure selected:

- *No. of Units* (required)
- *% of Int. Rent* (required)
  - The percentage of market rent values entered in **Column J** that rent will be based on for this unit type.
- *Service Charge (per week)*

Affordable Rent

Select Tenure: AFFORDABLE RENT

No. of Units	Market Rent	% of Mkt. Rent	Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Current Value
	£ -		£ -		£ -	£ -
	£ -		£ -		£ -	£ -

Two of the three inputs indicated by the pale-green cells are required in a section with the Affordable Rent tenure selected:

- *No. of Units* (required)
- *% of Mkt. Rent* (required)
  - The percentage of market rent values entered in **Column J** that rent will be based on for this unit type.
- *Service Charge (per week)*

London Affordable Rent

IMPORTANT: This tenure is only applicable to developments in a borough and ward located within the London area.

Select Tenure: LONDON AFFORDABLE RENT

No. of Units	London Aff. Rent		Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Current Value
	£ -		£ -		£ -	£ -
	£ -		£ -		£ -	£ -

One of the two inputs indicated by the pale-green cells is required in a section with the London Affordable Rent tenure selected:

- *No. of Units* (required)
- *Service Charge (per week)*

Target Rent

One of the two inputs indicated by the pale-green cells is required in a section with the Target Rent tenure selected:

- *No. of Units* (required)
- *Service Charge (per week)*

GOOD TO KNOW

If Target Rent is selected as one of the three rented tenures, then a *Supported housing?* dropdown will appear to the right of the LHA rent cap switch on **Row 13** in that rented tenure section:

If the unit types under the Target Rent tenure in the scheme you are appraising can be classified as supported housing rather than general needs (as defined by the Social Housing Rents (Exceptions and Miscellaneous Provisions) Regulations 2016), set this option to *Yes*. Otherwise, leave it set to the default of *No*.

This will ensure that the appropriate adjustment will be made in the rent inflation calculations for Target Rent so that they accurately reflect the stipulations in Appendix A of the 'Policy statement on rents for social housing' published by the government and updated in December 2022.

The appendix and the policy statement are available to view at:

https://www.gov.uk/government/publications/direction-on-the-rent-standard-from-1-april-2020/policy-statement-on-rents-for-social-housing#appendix-a-information-for-calculating-formula-rents

Overrides section

Columns CC to CJ contain the *Overrides* section. Various values – some manually input elsewhere on *Resi Units*, some calculated by formula, and some retrieved via lookups into prepopulated data tables within the model – can be overridden by values specified by the user in these input cells:

Manual 1999 Values	TARGET RENT net rent override	LONDON AFFORDABLE RENT net rent override	MARKET RENT net rent override	SHARED OWNERSHIP net rent override	LLR & R2B net rent override	LHA Override	Habitable Room Override

- *Manual 1999 Values* (**Column CC**): can be used to override the 1999 property values (in **Column CA**) which are automatically looked up from prepopulated data tables (located on the *Rents* sheet) for the purposes of deflating/indexing current property values back to 1999 values during calculation of Target Rent net rents.

- Selected rent tenures – net rent overrides (**Columns CD to CF**): the header labels in these columns will change according to which rent tenures are selected in **Cells P14, X14 and AF14**. Accordingly, manual entries in these cells will override the weekly net rents for those tenures (**Columns Q, Y and AG**) and for the unit type on each row.

  - Any *% of… Rent* percentage input previously applicable to the net weekly rent (e.g. the 80% shown below) is also overridden and therefore disregarded, **but it will remain visible**.
  - Where a net rent override value has been entered, this will be signified by an OVERRIDE message in the relevant column, as shown below:

No. of Units	Market Rent	% of Mkt. Rent	Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Current Value
3	OVERRIDE	80%	£ 330.00	£ 7.00	£ 337.00	£ 145,000
3	£ 360.00	81%	£ 284.60	£ 7.00	£ 291.60	£ 155,000
2	£ 370.00	82%	£ 294.40	£ 9.00	£ 303.40	£ 170,000
2	£ 400.00	83%	£ 323.00	£ 9.00	£ 332.00	£ 230,000

Select Tenure: AFFORDABLE RENT

- *SHARED OWNERSHIP net rent override* (**Column CG**) – as described; manual entries in these cells will override the calculated weekly net rents for this tenure (**Column AQ**) and for the unit type on each row.
  - Any *% Sold* and *Rent %* percentage inputs previously applicable to calculation of the *Rent £PW* value (e.g. the 25% and 2.75% values respectively, shown below) are also overridden and are therefore disregarded, **but they will remain visible**.
  - Where a net rent override value has been entered, this will be signified by the *Rent £PW* value being highlighted red, as shown below:

No. of Units	% Market Value	Applied Open Market Value	% Sold	Rent %	Rent £PW	Service Charge (PW)
5	95%	£ 137,750	25%	2.75%	£ 50.00	£10.00
5	95%	£ 147,250	25%	2.75%	£ 58.18	£10.00
4	95%	£ 161,500	25%	2.75%	£ 63.81	£13.00
4	95%	£ 218,500	25%	2.75%	£ 86.33	£13.00

No breach of affordability on the assumptions page

- *LLR & R2B net rent override* (**Column CH**) – as described; the user's manual entries in these cells will override the calculated weekly net rents for this tenure (**Column AW**) and for the unit type on each row.
  - Where a net rent override value has been entered, this will be signified by an OVERRIDE message in **Column AZ** (labelled *Rent adjusted?*), as shown below:

No. of Units	Rent to Buy Type	Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Rent adjusted?	% Market Value	Applied Open Market Value	% Sold	Rent %	S/Own Rent £PW
4		£ 200.00	£ 15.00	£ 215.00	OVERRIDE	85%	£ 123,250	20%	5.00%	£94.44
4		£ 203.95	£ 15.00	£ 218.95	N/A	85%	£ 131,750	20%	5.00%	£100.96
4		£ 203.95	£ 15.00	£ 218.95	N/A	85%	£ 144,500	20%	5.00%	£110.73
3		£ 225.27	£ 18.00	£ 243.27	N/A	85%	£ 195,500	20%	5.00%	£149.81

LONDON LIVING RENT   Rental Years   10

- *LHA Override* (**Column CI**) – as described; the user's manual entries in these cells will override the calculated weekly *Local Housing Allowance* (**Column L**) for the unit type on each row.

o Where a Local Housing Allowance override has been entered, this will be signified by the *Local Housing Allowance* in **Column L** being highlighted orange, as shown below:

Target Rent Uplift (5%)	Weekly Rents		
	Market Rent	Manual Rent Input	Local Housing Allowance
	£ 350.00		£ 300.00
	£ 360.00		£ 295.49
	£ 370.00		£ 295.49
	£ 400.00		£ 365.92

- *Habitable Room Override* (**Column CJ**) – as described; by default, the number of habitable rooms in each unit is assumed to be 1 more than the number of bedrooms (i.e. to include the living room); this allows the user to override that assumption for the unit type on each row.

Local Housing Allowance rent cap

On **Row 13** on the *Resi Units* sheet – in each rent tenure section, in the *Rent to Buy* tenure section, and in the *Scheme Total* section – you will find a yes/no dropdown input labelled *Cap gross rent at LHA?*, as shown below:

No	Cap gross rent at LHA?	No ▼					
	Select Tenure:	AFFORDABLE RENT					
Local Housing Allowance	No. of Units	Market Rent	% of Mkt. Rent	Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Current Value
£ 295.49	3	£ 350.00	80%	£ 273.00	£ 7.00	£ 280.00	£145,000
£ 295.49	3	£ 360.00	81%	£ 284.60	£ 7.00	£ 291.60	£155,000
£ 295.49	2	£ 370.00	82%	£ 294.40	£ 9.00	£ 303.40	£170,000
£ 365.92	2	£ 400.00	83%	£ 323.00	£ 9.00	£ 332.00	£230,000

As you might expect, these dropdowns control whether gross weekly rents in the tenure related to that section are to be capped at the level of Local Housing Allowance applicable to the BRMA and number of bedrooms of each unit type in the *Residential Unit Schedule* (displayed in **Column L**).

When you select *Yes* from this dropdown, any of the gross weekly rents calculated for units in that tenure (based on other inputs) which exceeded the applicable LHA rate (e.g. the £303.40 highlighted in red text in the above screenshot) will instead be set to equal the applicable LHA rate.

An indicator message LHA CAP will also be displayed on that affected row in the unit schedule to make it clear that this cap has been applied to the unit type on that row:

No	Cap gross rent at LHA?	Yes ▼					
	Select Tenure:	AFFORDABLE RENT					
Local Housing Allowance	No. of Units	Market Rent	% of Mkt. Rent	Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Current Value
£ 295.49	3	£ 350.00	80%	£ 273.00	£ 7.00	£ 280.00	£145,000
£ 295.49	3	£ 360.00	81%	£ 284.60	£ 7.00	£ 291.60	£155,000
£ 295.49	2	LHA CAP	82%	£ 286.49	£ 9.00	£ 295.49	£170,000
£ 365.92	2	£ 400.00	83%	£ 323.00	£ 9.00	£ 332.00	£230,000

> **IMPORTANT:**
>
> If a net rent override has been entered for a unit type and tenure which results in the calculated gross rent exceeding LHA, and the LHA cap dropdown is set to *Yes*, then the LHA cap will still be applied, i.e. the net rent override **will itself be overridden** by the cap. However, if the net rent override does not result in the gross rent exceeding LHA, then the override will apply.

For the Rent To Buy/London Living Rent tenure, that LHA CAP indicator would appear in the column labelled *Rent adjusted?* **(Column AZ)** – as would any net rent override indicator that may be applicable if the LHA cap is not exceeded:

Cap gross rent at LHA?			Yes	▾	2024/25 LLR RENTS - SEE MANUAL OVERRIDES IN COLUMN CH					
Rent to Buy Type			LONDON LIVING RENT				Rental Years	8		
No. of Units			Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Rent adjusted?	% Market Value	Applied Open Market Value	% Sold	Rent %	S/Own Rent £PW
3			£ 264.16	£ 12.00	£ 276.16	LHA CAP	82%	£ 200,900	45%	2.62%	£55.46
			£ -		£ -			£ -			£ -
			£ -		£ -			£ -			£ -
			£ -		£ -			£ -			£ -
4			£ 333.21	£ 12.00	£ 345.21	LHA CAP	82%	£ 299,300	45%	2.62%	£82.62

All four tenure-specific *Cap gross rent at LHA?* yes/no toggles can be set at once using the *Cap all gross rents at LHA?* dropdown below the *Scheme Total* section, in **Cell L13**:

SCHEME TOTAL

	Total
Units	257
Some Tenure Hurdles Not Met	Total
Total Scheme Costs	£30,389,435
Sales Income / Capital Subsidy	£27,268,041
Retained Profit	£ 360,882
Long Term Debt & Retained Profit	£29,482,274
Present Value of Income	£46,804,885
NPV After Retained Profit	£17,322,559
Cost/Val	99%	IRR	7.41%
Cap all gross rents at LHA?	No

	Weekly Rents		
Target Rent Uplift (5%)	Market Rent	Manual Rent Input	Local Housing Allowance
	£ 350.00		£ 295.49
	£ 360.00		£ 295.49
	£ 370.00		£ 295.49
	£ 400.00		£ 365.92

So, for example, setting this to *Yes* would mean that the LHA cap yes/no dropdown is set to *Yes* for all three rented tenures and the rent to buy tenure.

The value of this scheme-level setting for the LHA cap is also automatically updated to reflect any changes made to tenure-level LHA cap settings.

This means that if it is no longer the case that all four tenure-level LHA cap settings are set to *Yes*, the scheme-level LHA cap setting is updated to *No*; and if all four tenure-level LHA cap settings become set to *Yes*, the scheme-level LHA cap setting is updated to *Yes*.

Entering Affordable Sale, Discounted Sale and Private Sale units

Optimix allows modelling of the following affordable sale and sale tenures:

- Shared Ownership **(Columns AL to AR)**

- Rent to Buy / London Living Rent **(Columns AT to BE)**

- Discounted Sale **(Columns BG to BN)**

- Private Sale (**Columns BP to BU)**

Good to know…

The affordable sale and sale tenures above allow users to vary the applicable open market value of each unit type in the schedule on a per-tenure basis. This allows any variation in the specification of units between different tenures (or other small variations that may apply) to be accounted for within the model.

This can be done by entering a percentage in **Columns AM, BA, BH or BQ** (all labelled *% Market Value*). This percentage is then applied to the Open Market Values in **Column H** to produce the ***Applied Open Market Value*** in **Columns AN, BB, BI or BR**.

If no *% Market Value* is entered, the model will assume that you wish to take 100% of the Open Market Value to be the *Applied Open Market Value*.

Shared Ownership

			Affordability tests passed				
No. of Units	% Market Value		Applied Open Market Value	% Sold	Rent %	Rent £PW	Service Charge (PW)
		£ -				£ -	
		£ -				£ -	

Three of the five inputs indicated by the pale-green cells are required in the Shared Ownership section:
- *No. of Units* (required)
- *% Market Value*
  - See *Good to know…* section above.
- *% Sold* (required)
  - This is the percentage of the *Applied Open Market Value* sold in the first tranche sale of units of each type.
- *Rent %* (required)
  - This is the percentage of unsold equity used to determine the weekly rent rate (see the *Good to know…* section below).
- *Service charge (per week)*

Good to Know…

Optimix also calculates the income level required to be able to afford each unit type under the Shared Ownership tenure (see Chapter 10 *Reports*, page 81, for more on affordability calculations).

The mortgage payment/weekly rent values produced by your entered *% Sold* **(Column AO)** or *Rent % (Column AP)* may contribute to a unit type failing to pass affordability checks. For any unit types that have failed these checks, its *% Sold* and/or *Rent %* value will be highlighted red, and the status message in **Cell AL14** will change to:

<div align="center">Unit types with red '% Sold' or 'Rent %' are unaffordable.</div>

In this scenario, you can review the *Affordability* report to check where the affordability failures are coming from, and/or use the *Make affordable* button above this warning to launch the **Affordability goal-seek** function (see Chapter 10, page 83, for a guide on using this function):

<div align="center">Rent £PW values in red are overrides   Make affordable
Unit types with red '% Sold' or 'Rent %' are unaffordable.</div>

Also refer to the settings that define the various methodologies for calculating affordability, found on **rows 321 to 340** of the *Affordability* report.

Rent to Buy

This tenure allows users to model one of two rent-to-buy products per scheme:

- Traditional Rent to Buy, or
- London Living Rent

The user can select which type of Rent to Buy tenure they want to model by selecting from the *Rent to Buy Type* dropdown in **Cell AW14**.

Traditional Rent to Buy

No. of Units	Mkt Rent (PW)	% of Rent	Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Rent adjusted?	% Market Value	Applied Open Market Value	% Sold	Rent %	S/Own Rent £PW
			£ -		£ -			£ -			£ -
			£ -		£ -			£ -			£ -

Rent to Buy Type / RENT TO BUY / Rental Years 10

Six of the eight inputs indicated by the pale-green cells are required for the traditional Rent to Buy tenure:

- *No. of rental years* (required) **(Cell BC14)**
- *No. of units* (required)
- *Market Rent (per week)* (required)
- *% of Rent* (required)
  - The percentage of market rent values entered in **Column AU** that rent will be based on for this unit type.
- *Service charge (per week)*
- *% Market Value*
  - See the *Good to know…* section on page 43.
- *% Sold* (required)
  - This is the percentage of the *Applied Open Market Value* sold in the first tranche sale of units of each type.
- *Rent %* (required)
  - This is the percentage of unsold equity used to determine the weekly rent rate.

London Living Rent

Rent to Buy Type		LONDON LIVING RENT				Rental Years	10	
No. of Units		Net Rent (PW)	Service Charge (PW)	Gross Rent (PW)	Rent adjusted?	% Market Value	Applied Open Market Value	% Sold	Rent %	S/Own Rent £PW
		£ -		£ -			£ -			£ -
		£ -		£ -			£ -			£ -

Net weekly rent rates applicable for unit types under the London Living Rent tenure are – unless an override has been entered (see page 39) – derived from the London borough selected as the *Local Authority* in **Cell C6** and the *Ward* selected in **Cell C7**:

	VERSION	v3.2.20	
	AUDIT	TRUE	
Scheme Name	Test scheme		
Project Manager	Vince		
Local Authority	Croydon	Type	New Build
Ward (For LLR)	Coulsdon Town		
BRMA	Outer South London		

Four of the six inputs indicated by the pale-green cells are required for the London Living Rent tenure:

- *No. of rental years* (required) **(Cell BC14)**
- *No. of units* (required)
- *Service charge (per week)*
- *% Market Value*
  - See the *Good to know…* section on page 43.
- *% Sold* (required)
  - This is the percentage of the *Applied Open Market Value* sold in the first tranche sale of units of each type.
- *Rent %* (required)
  - This is the percentage of unsold equity used to determine the weekly rent rate.

> **IMPORTANT**: Users should note that London Living Rents are **not inflated to the first lettings date**. This is because they are benchmark rents and are calculated based on household incomes. This means that when the rents are reviewed there is no guarantee that they will be increased. If users wish to apply inflation up to the date of first lettings, then they should use the manual override in to specify pre-inflated rents in **Column CH**.

Discounted Sale

No. of Units	% Market Value	Open Market Value	% Sold	Discounted Sale Value	Value (SQFT)	Service Charge (PW)	Ground Rent PA
		£ 170,000		£ -	£ -		
		£ 180,000		£ -	£ -		

Two of the five inputs indicated by the pale-green cells are required for the Discounted Sale tenure:

- *No. of Units* (required)
- *% Market Value*
  - o See the *Good to know…* section on page 43.
- *% Sold* (required)
  - o The proportion of the property's full open market value that is for sale after a discount has been applied.
  - o This tenure assumes that the discounted value of the home is secured in perpetuity via a planning obligation or title restriction.
    - ▪ Therefore the discount reflected in this column will apply to the property's open market value in all results and reports in Optimix.
- *Service charge (per week)*
- *Ground rent (per unit per year)*

Private Sale

No. of Units	% Market Value	Open Market Value	Value (SQFT)	Service Charge (PW)	Ground Rent PA
		£ -	£ -		
		£ -	£ -		

Only one of the four inputs indicated by the pale-green cells is required for the Private Sale tenure:

- *No. of Units* (required)
- *% Market Value*
  - o See the *Good to know…* section on page 43
  - o .
- *Service charge (per week)*
- *Ground rent (per unit per year)*

Audit checks

On the *Resi Units* sheet, under the *Residential Unit Schedule* input area, you will find a group of sheet-specific checks **(Cells B126 to C135)** to help you to identify where an audit failure is coming from:

SHEET AUDIT CHECK	
M2 MATCHES	TRUE
NPV MATCHES COST	TRUE
TOTALS CHECK	TRUE
PERSONS CHECK	TRUE
PERSONS CHECK	TRUE
TENURE CHECK	TRUE
LHA CHECKS	TRUE
LHA CAP CHECKS	TRUE
SHEET AUDIT	TRUE

6. Non-residential units

The *Non Resi Units* input sheet is divided into sections arranged horizontally, each of which has a *Notes* area underneath for free-text or formula entry by the user:

Notes:

The leftmost section **(Columns B to J)** contains input and output areas related to:

- key identifying information for the appraisal, collated from other sheets

- the main financial indicators/metrics for the scheme as a whole (these will change as you perform further data entry on this and other sheets which affect their calculation)

- the specification of different unit types, i.e. the *Non-Residential Unit Schedule*

		SCHEME TOTAL		
		Units	68	80
			Resi	Scheme Total
Scheme Name	Test scheme	Total Scheme Costs	£ 2,751,988	£ 54,151,807
Project Manager	Vince	Sales Income / Capital Subsidy	£ 7,062,900	£ 12,702,900
Appraisal Status	Feasibility	Retained Profit Required	£ -	£ -
Date	04 November 2024	Long Term Debt Required	-£200,729	£ 41,448,907
Version	v3.2.20	Present Value of Income	£ 10,319,176	£ 16,926,063
MASTER AUDIT	TRUE	Net Present Value	£ 14,629,088	-£ 24,522,844
BESPOKE ASSUMPTIONS USED		Cost to Value	226%	IRR	-0.02%

Non-Residential Unit Schedule		DIRECT CASHFLOW INPUTS						
Description	Additional Info / notes	Lettable area (SQM)	Circulation (SQM)	GIA (SQM)	Lettable area (SQFT)	Gross annual rent	Yield % (override GDV)	Indicative GDV of rented units
		-	-			£ -
Non Resi A	Note A	12000	1200	13,200	129,167	£ 2,000	5.00%	£ 40,000
		-	-			£ -
		-	-			£ -
Non Resi B	Note B	14000	1400	15,400	150,695	£ 3,000	6.00%	£ 50,000
Non Resi C	Note C	16000	1600	17,600	172,223	£ 4,000	7.00%	£ 57,143
		-	-			£ -
Non Resi D	Note D	18000	1800	19,800	193,750	£ 5,000	8.00%	£ 62,500
		-	-			£ -

The sections to the right of this relate to the representation of the two non-residential tenures within your scheme – Non Residential Rent (**Columns L to AA**) and Non Residential Sale (**Columns AC to AF**):

Row 4 in each of the two sections will contain an indication of whether any hurdles defined for the Non Residential tenures have been passed or failed. If the user clicks one of these hurdle status summaries, Optimix will offer to navigate directly to the relevant section of the *Tenure* report to view the scheme's performance versus the hurdles in more detail:

Key scheme information

This section contains outputs only and is provided solely for the user's reference, including the sheet-specific audit status indicator:

Scheme Name	Test scheme
Project Manager	Vince
Appraisal Status	Feasibility
Date	04 November 2024
Version	v3.2.20
MASTER AUDIT	TRUE
BESPOKE ASSUMPTIONS USED	

Scheme Total section

To the right of the key scheme information section, you will notice in **Cells D2 to J11** an information panel entitled *Scheme Total*. This provides summary financial information and metrics about the scheme in your appraisal at a glance, with separate totals for residential units and the entire scheme:

SCHEME TOTAL		
Units	257	266
	Resi	Scheme Total
Total Scheme Costs	£60,045,913	£ 55,168,902
Sales Income / Capital Subsidy	£28,872,055	£ 30,137,055
Retained Profit Required	£448,959	£ 448,959
Long Term Debt & Retained Profit	£24,741,369	£ 25,480,806
Present Value of Income	£68,486,546	£101,624,297
Net Present Value	£66,966,585	£ 76,143,491
Cost to Value	88%	IRR	16.40%

Entering the Unit Schedule

Starting on **Row 15**, users can populate the details related to the schedule of non-residential unit types for the scheme to be appraised:

Up to 20 different non-residential unit types can be defined by populating the pale-green input cells shown above **(Cells B15 to I34)**. Cells coloured white contain calculated values.

Inputs include:

- **Description**
  (required)

  Column B

  Users are free to enter appropriate descriptions for each non-residential unit type.

- **Additional info / notes**

  Column C

  As described, free text entry for user's reference only.

- **Lettable Area (SQM)**
  (required)

  Column D

  The net internal area of the unit type, expressed in square metres.

- **Circulation (SQM)**
  (required)

  Column E

  The circulation space per unit of this type, in square metres. To include areas such as lobbies, corridors, staircases, lifts, plant rooms, internal bin stalls or bike sheds, etc). Users often enter a formula in these cells to calculate this as a percentage of *Lettable Area*.

- **Gross Rent (PA) at First Letting**
  (required)

  Column H

  Annual rent charge per unit type. Determines *Indicative GDV…* **(Column J)** in conjunction with *Yield %*.

- **Yield %**
  (required)

  Column I

  The rental yield expected to be achieved by each unit type. Determines *Indicative GDV…* **(Column J)** in conjunction with *Gross Rent (PA) at First Letting*.

Entering Non Residential Rent units

No of units	Operational Costs						Rent Reviews		Lease Details			
	Management costs	Maintenance costs	Voids & bad debts %	Holding costs (vacant periods)	Initial incentive payments	Refurb costs (lease renewals)	Rent review frequency (yrs)	Rent review costs (% of gross rent)	Lease term (yrs)	Vacant period before lease (months)	Rent free period in lease (months)	Agents fee (% of rent)
1	£ 600	£ 800	1.5%	£ 1,500	£ 2,345	£ 3,210	4	0.80%	10	9	3	1.00%
1	£ 800	£ 900	1.5%	£ 2,000	£ 3,456	£ 2,109	4	0.80%	15	9	3	2.00%
1	£ 1,000	£ 1,100	1.5%	£ 2,500	£ 4,567	£ 1,098	6	0.80%	20	9	3	3.00%

The *No of Units* input is required in order for a unit type to be reflected in the model's calculations, but many of the additional inputs in the *Non Residential Rent* section – indicated by the pale-green cells above – are also necessary in order to produce an accurate appraisal that fully reflects the rented commercial units you need to model.

These are broken down into subsections as follows:

- *No. of Units* (required)

Operational Costs

- *Management costs*
  - as described; per unit per annum
- *Maintenance costs*
  - as described; per unit per annum
- *Voids & bad debts %*
  - the percentage of gross rent used to calculate voids and bad debt costs
- *Holding costs (vacant periods)*
  - the annual costs (e.g. business rates and security) incurred when units are empty; Optimix will prorate the amount as required
- *Initial incentive payments*
  - any initial payment (e.g. a fit-out contribution made to the initial tenant) that is not already included in the scheme costs
- *Refurb costs (lease renewals)*
  - refurbishment costs per unit applicable at lease renewal

Rent Reviews

- *Rent review frequency (yrs)*
  - as described
- *Rent review costs (% of gross rent)*
  - associated costs of undertaking the rent review, expressed as a percentage of the gross rent

Lease Details

- *Lease term (yrs)*
  - as described
- *Vacant period before lease (months)*
  - how many months in each lease renewal year it is expected to take for the next lease to be granted
- *Rent-free period in lease (months)*
  - how many months' rent is waived when a new lease is granted
- *Agents fee (% of rent)*
  - new lease marketing & legal costs, expressed as a percentage of gross annual rent income

Entering Non Residential Sale units

No of Units	Sales Value	Sale Value (SQFT)	Ground rent (PA)
1	£ 450,000	£ 93	£ 33,000
1	£ 520,000	£ 81	£ 40,000
1	£ 750,000	£ 174	£ 59,000

All three inputs indicated by the pale-green cells are required in the *Non Residential Sale* section:

- *No. of Units* (required)
- *Sales Value* (required)
  - per unit
- *Ground rent (PA)* (required)
  - per unit per annum

7. Costs and income

> **IMPORTANT:**
>
> As mentioned in the introductory section of this user guide, the screenshots in this section contain example or test inputs included solely to illustrate how they are used in this area of Optimix, and to show you where and how they are presented.
>
> They are not representative of any realistic inputs, averages or benchmarks for real-world housing development schemes, and are not indicative of the inputs you may or may not need to produce a viable/non-viable scheme within your organisation.

Overview

The *Costs & Grants* input sheet is divided into sections arranged vertically, each of which has a *Notes* area to its right **(Column T)** for free text or formula entry by the user:

The topmost section includes a small area providing key identifying information about the appraisal:

…and column headers for tenures and totals that present a selection of the key financial indicators/metrics for each tenure. **Row 6** features hurdle failure indicators for tenures with defined hurdles (see the section on *Hurdle Assumptions* on page 21):

ALL TENURES	AFFORDABLE RENT	TARGET RENT	MARKET RENT	SHARED OWNERSHIP	LONDON LIVING RENT	DISCOUNTED SALE	PRIVATE SALE	NON RESIDENTIAL RENT	NON RESIDENTIAL SALE	TOTAL
Units	30	20	32	23	10	14	36	7	10	182
NPV £	£ 4,713,045	-£ 4,993,396	£ 3,647,508	£ 6,913,948	£ 3,155,839	£ 1,885,127	£ 11,559,560	-£ 472,848	£ 8,030,687	£ 34,439,469
Cost/Value	8.06%	11.69%	8.47%	11.16%	10.12%	15.98%	6.81%	168.86%	0.92%	8.86%
Hurdles Not Met	0/3	1/2	0/2	0/2	0/2		0/3	1/1	0/1	0/2

As on the *Resi Units* and *Non Resi Units* sheets, Optimix will offer to navigate directly to the *Financial Performance* section of the *Tenure* report when the user selects any cell containing a hurdle pass/fail indicator:

The additional sections below this relate to the following categories of expenditure/income in the development period:

- *Land Cost* **(Rows 8 to 16)**
- *Works Costs* **(Rows 18 to 30)**
- *On Costs* **(Rows 32 to 109)**
  - with subsections as follows:
    - *Surveys* **(Rows 34 to 50)**
    - *Legal/Land* **(Rows 51 to 60)**
    - *Planning* **(Rows 61 to 67)**
    - *Professional Consultants* **(Rows 68 to 82)**
    - *Design & Build* **(Rows 83 to 88)**
    - *Liaison* **(Rows 89 to 92)**
    - *Sales* **(Rows 93 to 100)**
    - *Other* **(Rows 101 to 108)**
- *Capital Funding* **(Rows 113 to 122)**
- *Retained Profit* **(Rows 124 to 130)**

Each section includes some cost/income lines whose description can be defined by the user, initially named *Other*. These are provided in case there are financial elements of your scheme which you feel do not belong in any of the standard, predefined cost/income lines:

We will look at each section of the *Costs & Grants* sheet in turn on the following pages.

<div style="background: green; color: white;">

Good to Know…

Beneath the input areas on this sheet, you will find two sections containing various calculated totals and indicators broken down by tenure and for the scheme overall. Users may find these datapoints useful when entering costs or incomes using a formula – you can reference the cells in these sections as required, thereby using the values they contain as the base for your formulae.

The *On Cost Base* section **(Rows 135 to 149)** includes values such as:
- Gross Internal Area (GIA -in square metres)
- Acquisition Costs
- Acquisition & Works Costs (taken together)
- Main Works
- Total Works
- Gross Development Value (GDV)

…and several others. Again, the cells containing these values can be referenced in your input formulae if required.

</div>

IMPORTANT: Where cost categories or lines can be input as a lump sum or total amount to be apportioned across all tenures, by default the model will calculate the apportionment on a m² basis. However, the user can change this base to *Number of units* to using the dropdown in **Cell G136**:

The *Benchmarks* section **(Rows 151 to 163)** includes values such as:

- Acquisition cost per unit/per habitable room
- Main/total works cost per unit/per m²
- Cost to Value percentages

…and several others. Again, the cells containing these values can be referenced in your input formulae if required.

Land cost

Good to know…

There are up to 10 columns used for input in these sections – one for all tenures, and 9 more for the residential and non-residential tenures (where applicable). However, only the first 4 input columns are shown below to illustrate the layout without making the cost/income line descriptions too small to read!

Input cells/rows in the *Land cost* section include:

- *Land Acquisition - Apportioned by SQM* **(Cell G8)**
  - a lump sum land cost entered here will be automatically apportioned across tenures by m²
- *Land Acquisition – Tenure*
  - or land costs can be manually entered per tenure on this row
- *Leaseholder Buybacks - Apportioned by SQM* **(Cell G10)**
  - cost automatically apportioned across tenures by m²
- *Leaseholder Buybacks – Tenure*
  - or this cost can be manually entered per tenure on this row
- *Other 1 and 2*
  - allow users to describe and input up to 2 other land-related costs not adequately captured in the above inputs, on a per-tenure basis
- *VAT on Land Cost £s (manual input)*
  - as described

Users can also specify the percentage deposit paid ahead of land acquisition **(Cell T9)** and how many months in advance of land acquisition the deposit should be factored into the development period cashflow **(Cell T11)**:

LAND COST	Deposit Percentage
	0%
	Months that deposit is paid before Acquisition
	0
	NOTES

Works costs

WORKS COSTS						
Main Works excl VAT – £/m2 input by Tenure						
Main Works excl VAT – £/m2 result		£	-	£	-	£	-
Main Works excl VAT - Input lump sum apportioned by SQM		£	-	£	-	£	-
Main Works excl VAT - Input lump sum amount per tenure						
Main Works excl VAT		£	-	£	-	£	-
Demolition excl VAT- Apportioned by SQM		£	-	£	-	£	-
Abnormal Works excl VAT – Apportioned by SQM		£	-	£	-	£	-
Other Works 1 excl VAT		£	-	£	-	£	-
Other Works 2 excl VAT						
Other Works 3 excl VAT						
Total Works Costs excl VAT		£	-	£	-	£	-
VAT on Works Cost £ (manual input)		£	-	£	-	£	-
Total Works Costs incl VAT		£	-	£	-	£	-

Input cells/rows in the *Works costs* section include:

- *Main Works excl VAT – £/m² input by tenure*
    - build cost per m² per tenure, used to calculate the *£/m² result* row below
- *Main Works excl VAT – input lump sum* **(Cell G20)**
    - total build cost in the whole scheme, automatically apportioned across tenures by m²
- *Main Works excl VAT – input lump sum per tenure*
    - or a build cost can be manually entered on a per tenure basis
- *Demolition excl VAT – Apportioned by SQM* **(Cell G23)**
    - total demolition cost in the whole scheme, automatically apportioned across tenures by m²
- *Abnormal Works excl VAT – Apportioned by SQM* **(Cell G24)**
    - total abnormal works cost in the whole scheme, automatically apportioned across tenures by m²
- *Other Works 1 to 3 excl VAT*
    - allow users to describe and input up to 3 other works-related costs not adequately captured in the above inputs
        - 1 as a lump sum that is automatically apportioned across tenures by m² **(Cell G25)**
        - 2 for costs to be manually entered on a per tenure basis
- *VAT on Works Costs £ (manual input)*
    - as described; entered per tenure

Users can also select the type of works applicable to the scheme, i.e. whether they are being carried out as a *Package Deal* or *Works Contract*, using the dropdown in **Cell T19**:

WORKS COSTS	Works Type
	Works Contract
	Works Contract is £24,753,262 excluding VAT
	NOTES

On costs

> **Good to know…**
>
> There are up to 10 columns used for input in these sections – one for all tenures, and 9 more for the residential and non-residential tenures (where applicable). However, only the first 4 input columns are shown below to illustrate the layout without making the cost/income line descriptions too small to read!

The *On Costs* section can be used in either of two ways:

- **Quick Appraisal** – the user enters a percentage of the Total Acquisition & Works Costs for each tenure on **Row 32** to be automatically calculated on **Row 33:**

On-Costs as % ACQ & WKS	VAT	Base									
(For Quick Appraisals)	N	Acquisition & Works			£	-	£	-	£	-

- **Detailed On Costs –** the user enters amounts for each individual cost line in each category, to be automatically apportioned across the tenures using either the default m² base, or the base selected in **Column E**

> **IMPORTANT:**
>
> If using the Quick appraisal method, users should avoid also entering Detailed On Costs figures, as any values that you enter against individual cost lines could effectively be double-counted in the total.

When entering On Costs using the *Detailed On Costs* method, users should note the following:

- **VAT** – users can turn VAT calculation on or off for each cost line by selecting Y or N from the dropdown in **Column D**

- **Lump sums/bases** – how your scheme's On Costs should be input will depend on the type of costs, but essentially users have three choices of approach. On Costs can be entered as:

  1. a lump sum in **Column G**, to be automatically apportioned across the tenures using the default m² base
     - this applies if *Input Amount* is the base selected in **Column E**

Topographical Survey	Y	Input Amount		£	1,000	£	84	£	127	£	72
Geotechnical (Soil) Survey	Y	Input Amount				£	-	£	-	£	-
Arboriculture (Tree) Survey	Y	Input Amount		£	1,000	£	84	£	127	£	72

  2. a lump sum for each tenure in **Columns H to P** (on some of the *Other* lines in some subcategories, and for *Stamp Duty on Acquisitions* and *Planning Fees*)
     - base is fixed to *Input Amount* on these lines, but apportionment is done manually by the user's input

Stamp Duty on Acquisitions	N	Input Amount		£	33,718	£	50,720	£	28,818
Right to Light Insurance	N	Input Amount		£	-	£	-	£	-
Title Defect Insurance	N	Units		£	-	£	-	£	-
Other 1	Y	Input Amount		£	-	£	-	£	-
Other 2	Y	Input Amount		£	-	£	-	£	-
Pre App Meeting	Y	Input Amount		£	-	£	-	£	-
Planning Fees	N	Input Amount		£	20,231	£	30,432	£	17,291

3. a rate in **Column G**, used in conjunction with the cost base selected in **Column E** to calculate apportionment across the tenures; use the dropdown to select your cost base from:

- **Input Amount**
  - ◊ rate in **Column G** to be entered as £ (see option 1 above)
- **Units**
  - ◊ rate in **Column G** to be entered as £ (per unit)
- **GIA SQM**
  - ◊ rate in **Column G** to be entered as £ (per m²)
- **Acquisition**
  - ◊ rate in **Column G** to be entered as % (of Acquisition cost)
- **Acquisition & Works**
  - ◊ rate in **Column G** to be entered as % (of total of Acquisition & Works costs)
- **Main Works**
  - ◊ rate in **Column G** to be entered as % (of Main Works costs)
- **Totals Works**
  - ◊ rate in **Column G** to be entered as % (of Total Works costs)
- **GDV**
  - ◊ rate in **Column G** to be entered as % (of Gross Development Value)
- **On Costs**
  - ◊ rate in **Column G** to be entered as % (of Total On Costs entered elsewhere)
  - ◊ applicable only to the *Contingency (On Costs)* line

As shown below, the number format of the input cells will automatically change according to the base selected:

Subcategories

For reference, below is a series of screenshots illustrating the complete list of detailed costs that can be specified in each subcategory of the *On Costs* section:

Surveys (Rows 34 to 50)

Legal / Land (Rows 51 to 60)

Legal Fees (Acquisition)	Y	Acquisition		£	-	£	-	£	-
Legal Fees – Buybacks	Y	Acquisition		£	-	£	-	£	-
Legal Fees – Planning	Y	Input Amount		£	-	£	-	£	-
Legal Fees – (Council's Fees)	Y	Input Amount		£	-	£	-	£	-
Environmental Insurance	N	Acquisition		£	-	£	-	£	-
Stamp Duty on Acquisitions	N	Input Amount							
Right to Light Insurance	N	Input Amount		£	-	£	-	£	-
Title Defect Insurance	N	Input Amount		£	-	£	-	£	-
Other 1	Y	Input Amount		£	-	£	-	£	-
Other 2	Y	Input Amount		£	-	£	-	£	-

Planning (Rows 61 to 67)

Pre App Meeting	Y	Input Amount		£	-	£	-	£	-
Planning Fees	N	Input Amount							
Section 106	N	Input Amount		£	-	£	-	£	-
Mayoral CIL	N	Input Amount							
Local CIL	N	Input Amount							
Other 1	Y	Input Amount		£	-	£	-	£	-
Other 2	Y	Input Amount		£		£		£	

Professional Consultants (Rows 68 to 82)

Site Finder Fees	Y	Input Amount		£	-	£	-	£	-
Valuation Fees	Y	Acquisition		£	-	£	-	£	-
Architect Fees	Y	Total Works		£	-	£	-	£	-
Planning Consultant Fees	Y	Total Works		£	-	£	-	£	-
Structural Engineers	Y	Total Works		£	-	£	-	£	-
Employers Agent	Y	Total Works		£	-	£	-	£	-
Quantity Surveyors	Y	Total Works		£	-	£	-	£	-
Party Wall Surveyor Fees	Y	Total Works		£	-	£	-	£	-
Lead Designer (CDM)	Y	Total Works		£	-	£	-	£	-
Clerk of works	Y	Total Works		£	-	£	-	£	-
M&E Engineers	Y	Total Works		£	-	£	-	£	-
Sustainability Consultant	Y	Input Amount		£	-	£	-	£	-
Fire Consultant	Y	Total Works		£	-	£	-	£	-
Other Fees 1	Y	Total Works		£	-	£	-	£	-
Other Fees 2	Y	Input Amount							

D&B (Rows 83 to 88)

Performance Bond	N	Input Amount		£	-	£	-	£	-
Building Warranty	Y	Input Amount		£	-	£	-	£	-
Building Regs Fees	N	Input Amount		£	-	£	-	£	-
Site Security	Y	Input Amount		£	-	£	-	£	-
Contractor's Design	Y	Input Amount							
Other 2	Y	Input Amount							

Liaison (Rows 89 to 92)

Consultation/TLO costs	Y	Input Amount		£	-	£	-	£	-
Home Loss/Decant Expenses	Y	Input Amount		£	-	£	-	£	-
Other 1	Y	Input Amount							
Other 2	Y	Input Amount							

Sales (Rows 93 to 100)

Sales Agent Fee (Private)	Y	GDV				
Sales Agent Fee (Other)	Y	Input Amount				
Marketing & Advertising	Y	Input Amount				
Show Flat	Y	Input Amount				
Valuation – Final Resi Sales	Y	Input Amount				
Legal Fees – Disposals	Y	Input Amount				
Other 1	Y	Input Amount				
Other 2	Y	Input Amount				

Other (Rows 101 to 108)

Other 1	Y	Input Amount		£	-	£	-	£	-
Other 2	Y	Input Amount		£	-	£	-	£	-
Other 3	Y	Input Amount							
Contingency (On-Costs)	N	On Costs		£	-	£	-	£	-
Contingency (Works)	N	Total Works		£		£		£	
Development Allowances	N	Acquisition & Works		£	-	£	-	£	-
VAT on On-Costs				£	-	£	-	£	-
Capitalised Interest				£	-	£	-	£	-

IMPORTANT:

Capitalised interest and *VAT applicable to On Costs* (i.e. for cost lines with the Y/N selection in **Column D** set to Y) are calculated as cost lines in the *Other* subcategory, as shown above).

Capital funding

> **Good to know…**
>
> There are up to 10 columns used for input in these sections – one for all tenures, and 9 more for the residential and non-residential tenures (where applicable). However, only the first 4 input columns are shown below to illustrate the layout without making the cost/income line descriptions too small to read!

GLA/HE Grant	Input Amount				
LA Grants/RTB Receipts	Input Amount				
RCGF/DPF	Input Amount				
s106 Income	Input Amount				
Capital Subsidy / Reserves	Input Amount				
Other Funding	Input Amount				
Sales Income					
Retained Profit		£ -	£ -	-£	250,000
Long Term Debt		£ 3,578,907	£ 5,439,120	£	8,812,823
TOTAL CAPITAL FUNDING		£ 3,578,907	£ 5,439,120	£	8,562,823

Input rows in the *Capital funding* section include:

- *GLA/HE Grant*
  - for funding from a Greater London Authority and/or Homes England grant
- *LA Grants/RTB Receipts*
  - for funding from a Local Authority grant and/or Right to Buy receipts
- *RCGF/DPF*
  - for funding from a Recycled Capital Grant and/or Disposal Proceeds Fund
- *s106 Income*
  - for funding from a Section 106 agreement
- *Capital Subsidy/Reserves*
  - for funding from capital subsidy and internal reserves
- *Other Funding*
  - user-definable line for any additional funding not adequately captured in the above inputs

Right to Buy Receipts

Optimix offers the ability to have Right to Buy Receipts calculated automatically as a percentage of total scheme costs for each tenure.

First, enter the target percentage in **Cell V114**, then use the dropdown in **Cell T114** to choose the tenure for which you want Optimix to calculate RTB receipts:

Set RTB Receipts to 40% of TSC for (select below)	Target RTB %
▼	40%

Affordable Rent
Target Rent
Market Rent
Shared Ownership
London Living Rent
Discounted Sale
Private Sale
Non Residential Rent

After selection of a tenure, Optimix will ask for your confirmation to proceed before performing a goal-seek calculation (because existing inputs are overwritten by the result of the goal-seek), in order to identify the level of RTB Receipts required to represent your chosen percentage of total scheme costs.

IMPORTANT: This calculation is iterative, i.e. it repeatedly adjusts for the effect of each new candidate RTB receipt value on capitalised interest in the appraisal, which in turn affects the scheme costs that the value is based upon.

A progress bar will be displayed while the necessary calculations are ongoing, after which a message will be displayed to confirm the RTB receipts value required to achieve the target percentage of total scheme costs:
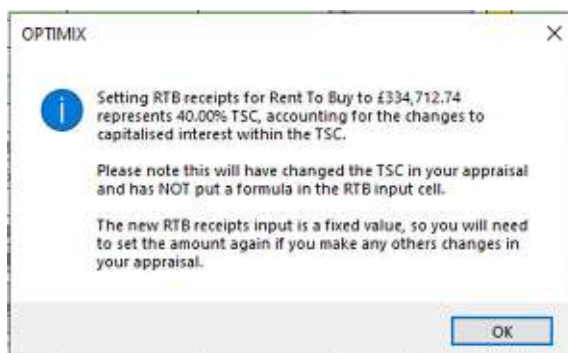
…and this value will be entered for you into the chosen tenure's cell on **Row 114**. As mentioned in the above message, this overwrites any input that was already in the cell, including any user-defined formula that had previously linked the calculation of RTB receipts to other cells.

Where a *LA Grant/RTB Receipts* value is populated for a given tenure, **Row 123** will display the percentage of that tenure's contribution to Total Scheme Costs that the value represents:

As other inputs are changed, if they have an effect on Total Scheme Costs, these percentages will be updated. If any of them exceed the *Target RTB %* specified in **Cell V114**, a CHECK RTB warning message will be displayed in **Cell G114**:

Retained profit

The *Retained Profit* section **(Rows 124 to 130)** allows users to ringfence some or all of the sales profits from the Private Sale, Discounted Sale, Shared Ownership and Non Residential (Commercial) Sale units within the scheme, i.e. prevent profits being used to cross-subsidise the rest of the scheme.

Users can configure the model to calculate retained profit as a percentage of *Profit, GDV* or *Scheme Costs* using the base dropdown in **Column E**. The percentage is then entered in **Column G**:

Alternatively, the input cells on **Row 129** can be used to enter a lump sum as retained profit under each applicable tenure:

Residual Land Value

The *Residual Land Value* section **(Rows 132 to 138)** allows users to apply a reduction in the capitalised value, sales income and subsidy of units under affordable tenures to account for end user fees in cases where the units are being sold on to another provider.

Users can control which of these three elements the reduction is applied to using the yes/no dropdowns in **Column E** and can enter the reduction either as a percentage on **Row 133**, or as a lump sum on **Row 137**.


Inputs made in this section are only used in the calculation of outputs on the *RLV* report sheet (see page 79).

PLEASE NOTE: Reduction of capitalised value of the rental stream to take into consideration end user fees is not currently compatible with Consolidator. Any end user fees entered, and any reduction of capitalised value applied, will not be reflected in the Timed NPV in a Consolidation. We are planning to resolve this incompatibility in a future update of the Consolidator.

The Maximiser

At the top of the *Notes, Adjustments and Tools* section in **Column T**, you will find the *Maximiser* button:
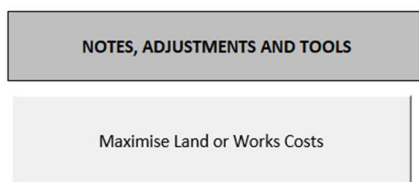

This function enables users to automatically populate the maximum value for land costs or works costs that would produce a specified target value for the NPV or IRR of the scheme.

After clicking the *Maximise Land or Works Costs* button shown above, the following dialog box will be displayed:
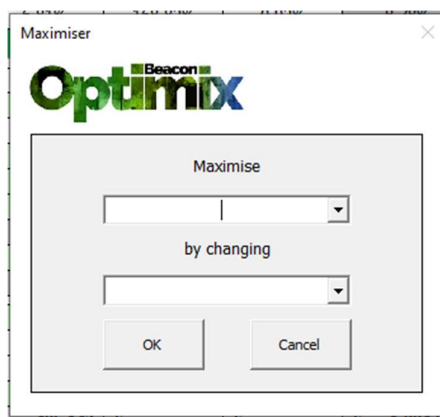
The user should select the value to maximise in the top dropdown (either *Land Cost* or *Works Costs*), and then the financial indicator whose target value to achieve in the bottom dropdown (*NPV* or *IRR*).

After clicking the *OK* button, a further dialog box will be displayed, asking you to enter the target value for your chosen financial indicator:
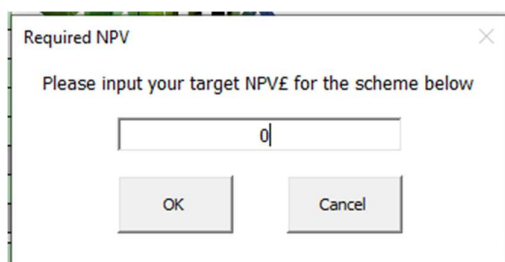
The user will then receive a final warning message to explain that proceeding with the maximisation will overwrite any formula previously entered as the lump sum input for the chosen cost:
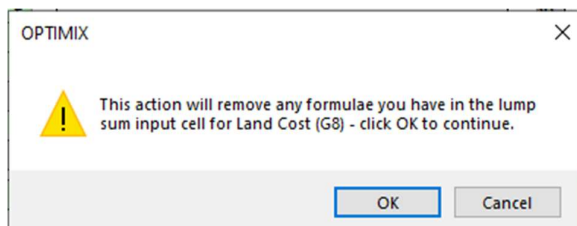
If you click *OK* to proceed, the model will take a few seconds to perform the necessary goal-seek calculations, and will then display confirmation of the calculated value:

This value is then automatically set in the appropriate lump sum input cell for the chosen cost (i.e. **Cell G8** or **Cell G20**). If the value produced by the goal-seek is negative, the user will be specifically notified that this is the case, so that a manual review can be carried out after completion of the goal-seek:
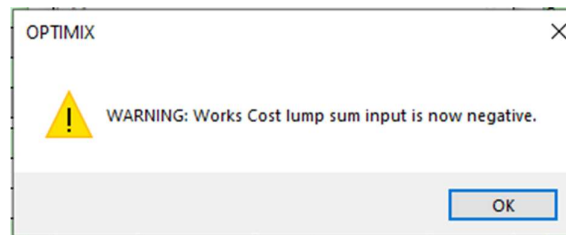
8. Development cashflow timings

The *Timing* sheet allows the user to change when capital costs and funding in a scheme are accounted for in the development cashflow in their appraisal, and is comprised of the following input areas:

- Cashflow start date & social housing grant distribution percentages
- Sales Profiler for Shared Ownership, Discounted Sale, Private Sale and Non-Residential (commercial) Sale units
- Start month and end month timings for all scheme costs and capital funding
- A manual cashflow to facilitate exact or fine-tuned timing requirements

At the top of the *Timing* sheet, beside the sheet and master audit statuses, **Cells E2 and G2** show the total capitalised interest and NPV for the scheme. **Cell M2** allows the user to specify a zoom level to be applied to the *Timing* sheet (both immediately, and upon worksheet reactivation):

Optimix can model cashflow for a **development period of up to 10 years** (120 months). A detailed view of the development cashflow can be found in **Columns J to DY**, broken down by month for every cost and income line:

The user should first review the inputs for the *Cashflow Start Date* and the distribution profile for social housing grant across scheme milestone dates, found in **Cells D8** and **F10 to F12** respectively:

CASHFLOW START AND END LIMITS - 10 YEAR LIMIT			
Cashflow Start Date	30/04/2023	ALL PAYMENTS MUST BE WITHIN THIS RANGE	
Cashflow Limit	31/03/2033		
EVENT	DATE	MONTH	% OF SHG
Cashflow Start Date	01/04/2023		
Planning	07/05/2024	14	
Acquisition	01/06/2024	15	
Start on Site	14/08/2024	17	65%
Practical Completion (TO REVENUE INDEX)	22/11/2026	44	35%
Last Sale	31/03/2027	48	
End of Cashflow	31/03/2027	48	
Land Deposit Paid (exchange of contracts)	31/03/2024	12	5%

> **IMPORTANT:** When amending the *Cashflow Start Date*, please ensure that the period spanned by the 10-year cashflow starting with the date entered (see **Cells D5 and D6**) will cover all scheme milestone events listed in **Cells D9 to D13** and the expected timing of all costs and income in the appraisal:

CASHFLOW START AND END LIMITS - 10 YEAR LIMIT			
Cashflow Start Date	30/04/2023	ALL PAYMENTS MUST BE WITHIN	
Cashflow Limit	31/03/2033	THIS RANGE	
EVENT	DATE	MONTH	% OF SHG
Cashflow Start Date	01/04/2023		
Planning	07/05/2024	14	
Acquisition	01/06/2024	15	
Start on Site	14/08/2024	17	65%
Practical Completion (TO REVENUE INDEX)	22/11/2026	44	35%
Last Sale	31/03/2027	48	
End of Cashflow	31/03/2027	48	
Land Deposit Paid (exchange of contracts)	31/03/2024	12	5%

If the *Cashflow Start Date* is set too early, the cashflow could end before all payments are accounted for; too late, and milestone/event dates may not be reflected correctly in timings.

Sales profiling

The *Sales Profile* settings in **Cells J5 to M9** include the ability to select the profile method for each sale tenure, the start date for off-plan sales, and the sales rate pre- and post-completion.

SALES PROFILE	SHARED OWN	DISCOUNTED SALE	PRIVATE SALE	NON-RESI
Sales Profile Method	SALES RATE	SALES RATE	SALES RATE	SALES PERIOD
Units to Sell	18	12	10	0
Start Sales Off Plan From	01/01/2026	01/01/2026	01/01/2026	01/01/2026
Sales Per Month Off Plan	2	2	2	0
Sales RATE or PERIOD Post PC (Months)	6	4	4	1

The available sales profiles are as follows:

- **Sales Rate:** based on a specified **number of units** being sold per month
- **Sales Period:** based on all units being sold within the specified **number of months**
- **Manual:** monthly sales income to be provided by user input into the manual cashflow **(Rows 220 to 223)**

Sales Rate profile

For this profile, required inputs in **Rows 7 to 9** are as follows:

- **Start Sales Off Plan From:** The launch date for unit sales (pre-completion)
- **Sales Per Month Off Plan:** Units that will be sold per month (**pre**-completion)
- **Sales RATE… Post PC:** Units that will be sold per month (**post**-completion)

Sales Period profile

For this profile, required inputs in **Rows 7 to 9** are as follows:

- **Start Sales Off Plan From:** The launch date for unit sales (pre-completion)
- **Sales Per Month Off Plan:** Units that will be sold per month (**pre**-completion)
- **Sales PERIOD Post PC:** Months within which all units will sell (**post**-completion)

Income from any off-plan sales will appear in the development cashflow in the **same month as Practical Completion**.

Manual profile

If this profile method is selected for a sales tenure, monthly sales figures should be entered on the row of the capital funding manual cashflow that then becomes activated (one of **Rows 220 to 223**) for that tenure:

Selecting the manual sales profile method also results in the *Start Sales Off Plan From*, *Sales Per Month Off Plan* and *Sales RATE or PERIOD Post PC (Months)* input cells (**Rows 7 to 9**) being locked and greyed out, preventing their use for input (as illustrated above).

This is done because, with the manual sales profile method enabled, these values are determined instead by the entries made in the manual cashflow for sales figures.

> **IMPORTANT:** If the sum of the sales figures entered in the capital funding manual cashflow differs from the total sales receipts expected (based on inputs elsewhere, e.g. total Applied OMV for the tenure on the *Resi Units* sheet), four things will happen to clearly indicate there is a problem which must be resolved:
>
> - the row will be highlighted red
> - an ACTIVE-ERROR status message will be displayed in **Column D**
> - the variance producing the error will be indicated in **Column I**
> - the sheet audit (and therefore the master audit) flag will be set to FALSE
>
>
>
> Users encountering this error should review their inputs in the manual cashflow on that row and ensure that the indicated variance is added/subtracted in the appropriate months, so that the expected and input totals match (see *Input Sheet* in **Column G** and *This Sheet* in **Column H** respectively).

Timing controls

The *Timing* sheet also includes the ability to set start month and end month timings for all capital costs and funding, across which payments can be spread in the development cashflow using a method of the user's choosing.

Capital costs profiling

For all capital costs, the dropdowns in **Column D** offer the following choice of timing methods:

Month   S-Curve   Manual

CAPITAL COSTS	TIMING	Start Month	End Month
Acquisition	MONTH ▾	13	13
Main Works	MONTH	13	25
Demolition excl VAT- Apportioned by SQM	S-CURVE MANUAL	13	16

The **Month** timing method will spread the payments for the cost on that row evenly (i.e. the same amount per month) across the period between the *Start month* and *End month* selected in **Columns E and F**, as illustrated in the following diagram:

Flat monthly rate   Linear increase
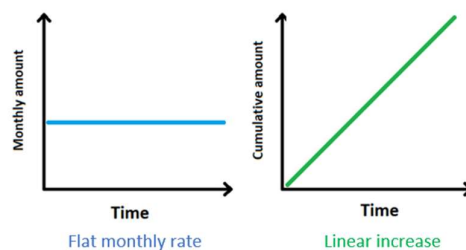
The **S-Curve** timing method will automatically spread payments between the SOS and PC dates (across a period of up to 5 years) based on the classic cumulative spend S-curve – as illustrated in the diagram below. Any pre-existing start month and end month inputs in **Columns E and F** on rows with this method selected are locked, greyed out and ignored.

'Bell-shaped' curve   S-curve
(normal distribution)
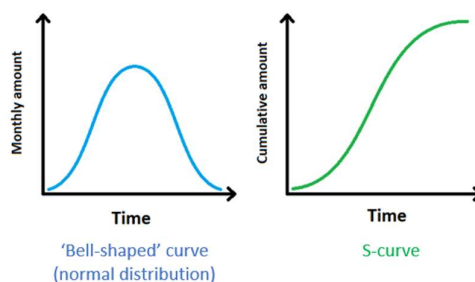
If the user selects the **Manual** timing method for a cost element, inputs totalling the value of the cost element should be made on the row of the manual cashflow that then becomes activated (one of **Rows 130 to 211**):

Selecting the manual timing method for a cost element also results in the *Start Month* and *End Month* input cells (**Columns E and F**) being locked and greyed out on that row, preventing their use for input.

This is done because, with the manual timing profile method enabled, these values are determined instead by which months contain entries for that cost element in the manual cashflow.

IMPORTANT: If the sum of the cost element figures entered in the manual cashflow differs from the total expected (based on inputs elsewhere, mostly the *Costs & Grants* sheet), five things will happen to clearly indicate there is a problem which must be resolved:

- the variance will be indicated and highlighted red in **Column I** of the automatic cashflow

- the row will be highlighted red in the manual cashflow
- an ACTIVE-ERROR status message will be displayed in **Column D** of the manual cashflow
- the variance producing the error will be indicated in **Column I** of the manual cashflow
- the sheet audit (and therefore the master audit) flag will be set to FALSE

Users encountering this error should review their inputs in the manual cashflow on that row and ensure that the indicated variance is added/subtracted in the appropriate months, so that the expected and input totals match (see *Input Sheet* in **Column G** and *This Sheet* in **Column H** respectively).

## Capital funding profiling

For the capital funding elements of a scheme, the available timing methods vary according to the type of funding.

The dropdowns in **Column D** offer timing methods for funding elements as follows:

	GLA & HE Grant	LA Grants & RTB Receipts	RCGF & DPF	S106 Income	Capital Subsidy & Reserves	Other Funding
Auto *Funding is spread according to the % of SHG distribution percentage inputs made in Cells F10 to F12 (see page 64)*	✔					
Month *Funding is spread evenly (i.e. the same amount per month) across the period between the Start month and End month selected in Columns E and F*		✔	✔	✔	✔	✔
% of Spend *Funding is allocated as a percentage of monthly expenditure, based on the overall ratio between total LA Grants/RTB Receipts and total scheme costs*		✔				
Manual *Income should be input by the user on the relevant row of the capital funding manual cashflow (rows 214 to 219)*	✔	✔	✔	✔	✔	✔

Timing

Interest calculation

The method for calculating capitalised interest in Optimix depends on the *Stop Capitalised Interest at* setting in **cell V156** of the *Assumptions* sheet (see also Advanced Settings on page 24):

Base Year for operational costs (Yr end March)	2024	Client setting. Beacon default is		
Mid Point Development Interest Calculation	No	Default is No. If set to yes, capit		
Stop Capitalised Interest at:	Individual Tenure	PC	PC	PC
Include Liquidity/Non utilisation costs	No	Default is No. This is only to be		
Liquidity/Non-Utilisation Costs (rate per year)	0.00%	If Yes is selected above, enter t		

If it is set to either *PC*, *Scheme Last Sale* or *Scheme Last Payment*, then the monthly capitalised interest calculations can be seen on **Rows 119 to 126** of the *Timing* sheet:

CAPITALISED INTEREST CALCULATION						
Opening Balance						
Net Cashflow						
Interest charged on Negative Balances	Mid Point Int.	No	1	0.33%	-£	4,101,379
Interest charged on Positive Balances				0.00%	£	-
Actual Interest					£	-
Closing Balance					-£	4,101,379
MONTHLY CASHFLOW WITH INTEREST (NOT CUMULATIVE)						

…and the **approximate** apportionment of interest between tenures will be found on **Row 245**. These values are then used to populate capitalised interest figures on **Row 108** of the *Costs & Grants* sheet.

If the *Stop Capitalised Interest at* setting on the *Assumptions* sheet is *Individual Tenure*, **Rows 119 to 126** of the *Timing* sheet will be greyed out (indicating they are inactive), capitalised interest values will instead be taken from multiple tenure-specific calculation sections (on **Rows 435 to 1402**):

AFFORDABLE RENT						
CAPITALISED INTEREST CALCULATION	PC					
Opening Balance						
Net Cashflow						
Interest charged on Negative Balances	Mid Point Int	No	1	0.55%	-£	163,023
Interest charged on Positive Balances				0.00%	£	-
Actual Interest					£	-
Closing Balance					-£	163,023
NET CASHFLOW BEFORE INTEREST						
Cashflow Active for Adding Interest - PC	1					
Cashflow Active for Adding Interest - Last Payment	3					
CASHFLOW ACTIVE	1					

…and the amount of capitalised interest coming from each tenure will be displayed on **Row 247**. These values are then used to populate capitalised interest figures on **Row 108** of the *Costs & Grants* sheet.

Known/actual interest figures can be entered manually on **Row 226.**

Default month number formula restore

Optimix is preconfigured with formulae in the *Start Month* and *End Month* input cells for all capital cost and capital funding rows, which link to certain milestone dates in the *Event* section in the top-left of the *Timing* sheet (see page 64).

If you overwrite any of these with your own formulae or hard-coded month numbers, and subsequently wish to restore the original preconfigured formulas for those rows, simply select them using the checkboxes on each row (or using the select all checkbox at the top of each section to select/deselect all rows in a section), and then click the formula restore icon:

CAPITAL COSTS	What's this?		☐	TIMING	Start Month	End Month
Acquisition			☐	MONTH	13	13
Main Works			☐	S-CURVE	25	37
Demolition excl VAT- Apportioned by SQM			☑	MONTH	25	28
Abnormal Works excl VAT - Apportioned by SQM			☑	S-CURVE	25	37
Other Works excl VAT			☑	MONTH	25	37
Other Works excl VAT			☐	MONTH	25	37

A warning will then be displayed to emphasise that there is **no undo available** for this formula restore operation, and you will be prompted for your confirmation to proceed:

> **OPTIMIX**   ✕
>
> ⚠ This action will OVERWRITE any existing timing methods, start month numbers/formulas, and end month numbers/formulas for the selected cost rows.
>
> There is NO UNDO AVAILABLE once this is done - you would have to manually re-enter all your timing inputs if you change your mind.
>
> Are you sure you wish to proceed?
>
>   [Yes]   [No]
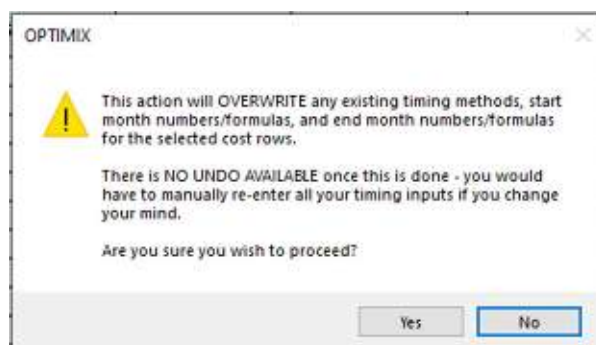
Choosing *Yes* at this prompt will then restore the original preconfigured formulas to the *Start Month* and *End Month* cells for the selected capital cost/funding elements.

9.   Charts & graphics

Optimix includes a sheet named *Visuals* which is dedicated to generating charts and graphics which summarise and illustrate key information from the outputs of your appraisal.

A checkbox for revealing and hiding the *Visuals* sheet can be found on the *Welcome* sheet, in the *Tools and Reports* section.

Taking screenshots

Alongside the master audit status and key identifying scheme labels at the top of the sheet, you will find a *Take screenshot* button:

Clicking this will launch the default Windows screenshot tool. Depending on the version of Windows operating system you have installed on your computer, this will be either:

 the Snipping Tool, or

 Snip & Sketch

If your display goes slightly darker after clicking the *Take screenshot* button, and you see this toolbar at the top of the screen:

…this is the new Snipping Toolbar, and the darkened screen indicates that using Snip & Sketch is enabled and is in capture mode.

Either tool can be used to select an area of the screen to capture, and therefore to copy specific charts or graphics from the *Visuals* sheet to the clipboard. You can then annotate or highlight the captured image, paste it into any other document or report you may be working on, save it as an image file, print it or open it for editing in another application.

Chart groups

The *Visuals* sheet is organised into six groups, stacked vertically:

- Tenure, Unit Mix and Design Efficiencies
- Capitals Costs and Income
- Cross Subsidy
- Scheme Financial Performance and KPIs
- Residential Sales
- Non-Residential Uses

We will examine each of these groups – and the charts and graphics they contain – in the pages that follow. A selection of example charts and graphics output is provided in each section.

Tenure, Unit Mix and Design Efficiencies

Charts in this group include:

- *Overall Residential Mix by Tenure and Unit Type*
- *Residential Mix by Unit Type*
    - including dropdown to filter chart output by tenure or whole scheme
- *Residential Mix by Tenure*
- *Tenure Split*
    - including dropdown to show split by either total number of homes, or total number of habitable rooms
- *NPV Contribution by Tenure and Unit Type*
    - including button to run the *Optimiser* (see chapter 10 *Reports* for more on the *Optimix* report and this function)
- *Average Floor Area vs NDSS Minimum by Unit Type*
- *Net to Gross Floor Area by Tenure*
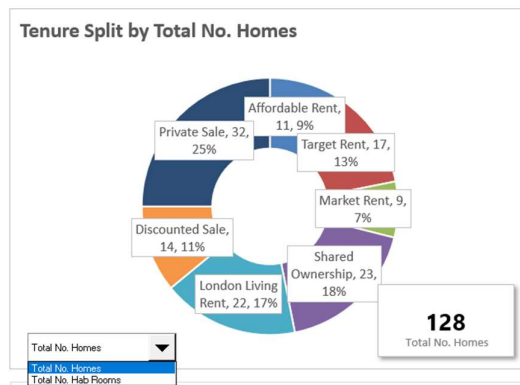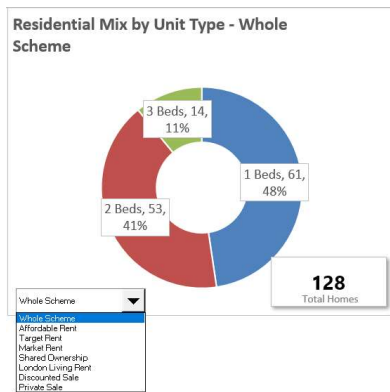
Capitals Costs and Income

Charts in this group include:

- *Costs by Tenure*
  - including dropdown to filter chart output by land costs, works costs, on costs or whole scheme
- *Income by Tenure*
  - Including dropdown to filter chart output by sales income, grants, S106 income, other funding, reserves or long-term debt
- *Capital Costs and Income by Category*
  - Including dropdown to filter chart output by tenure or whole scheme
- *On Costs Breakdown*
- *Development Period – Monthly Cashflow*
- *Development Period – Cumulative Cashflow*
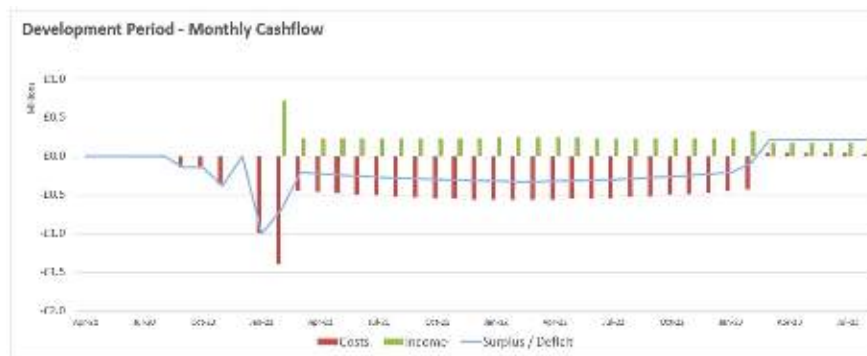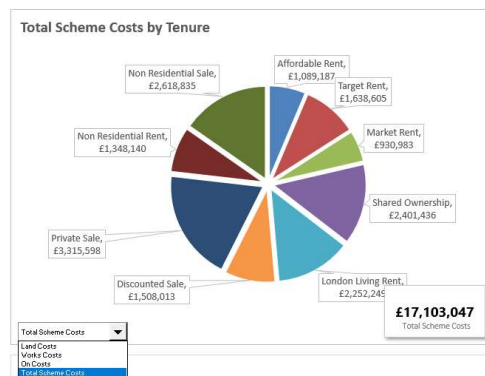
Cross Subsidy

All charts in this group have their output filtered by a dropdown on the *Cross Subsidy Summary* chart (shown below) to select from any tenures receiving cross-subsidy (i.e. having a negative NPV). They include:

- *Cross Subsidy Summary*
- *Costs and Cross Subsidy Loss per Unit*
- *Income per Unit*

Cross Subsidy Summary - Target Rent

Costs and Cross Subsidy Loss Per Unit - London Affordable Rent
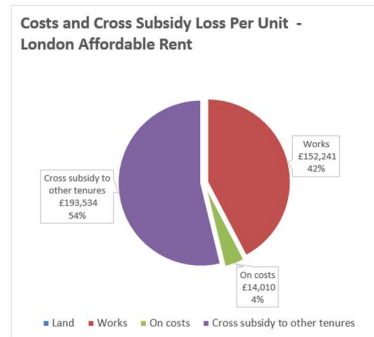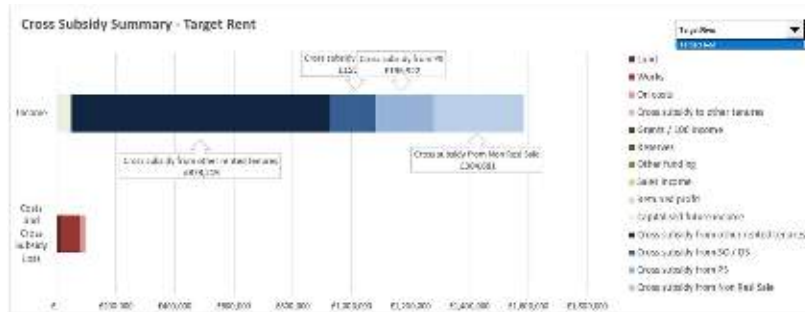
Scheme Financial Performance and KPIs

Charts in this group include:

- *Loan Balance by Year*
- *Net Present Value by Tenure*
- *Interest and Net Operating Income by Year*
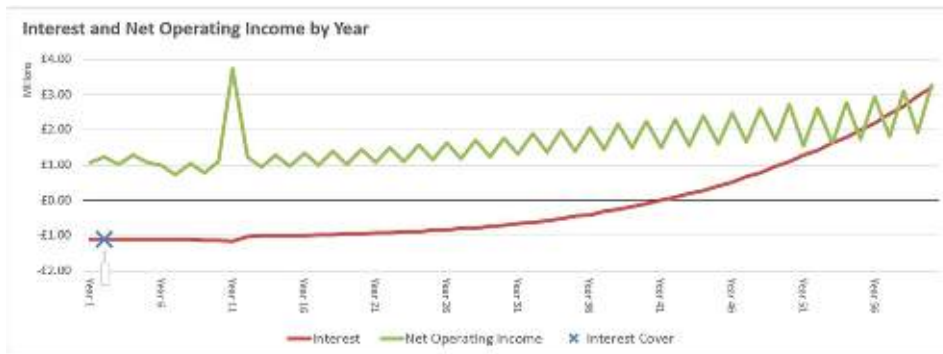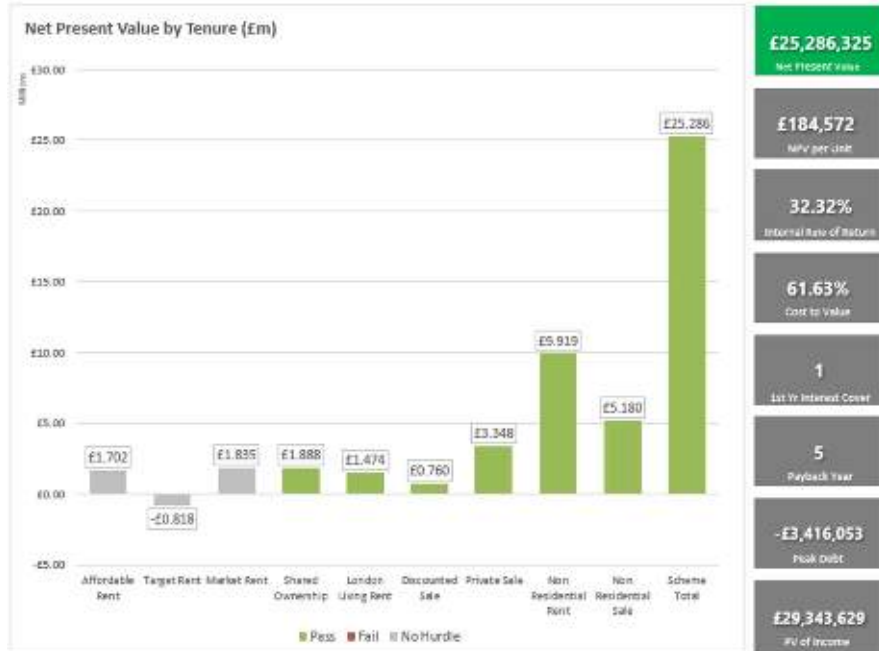
Residential Sales

Charts in this group include:

- *Shared Ownership Surplus (% OMV)*
- *Value of Shared Ownership Homes*
- *Private Sales Surplus (% OMV)*
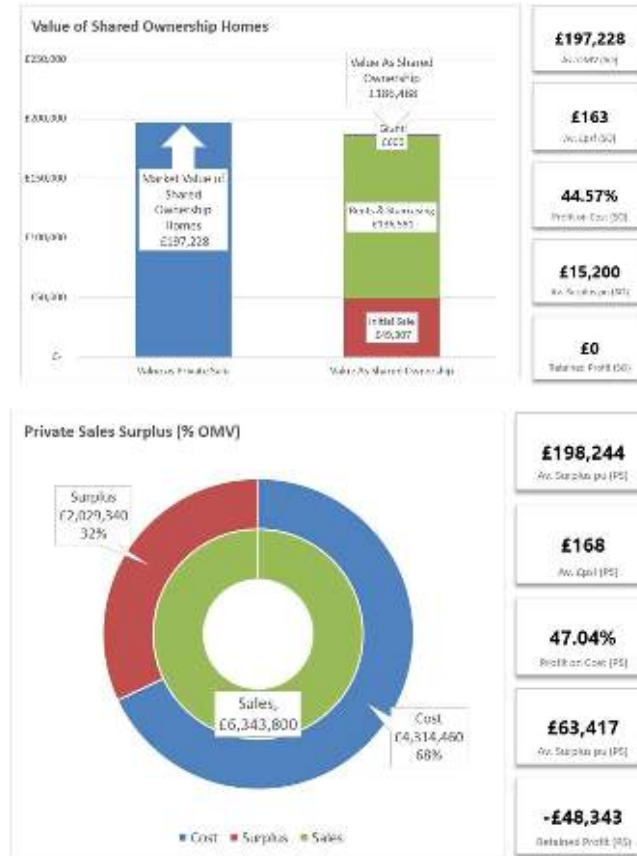
Non-Residential Uses

Charts in this group include:

- *Schemes Uses by Floor Area*
- *Non Residential Rent Loan Balance by Year*
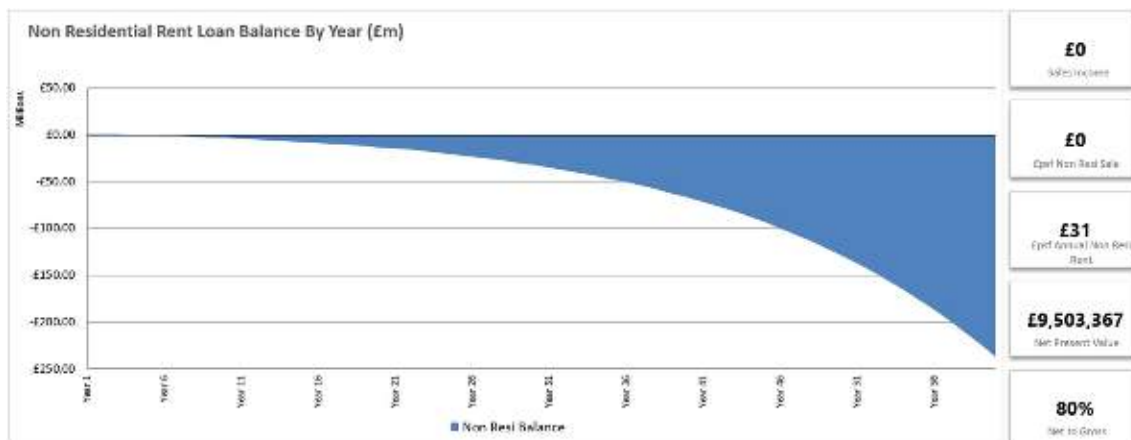
10. Reports

Optimix includes a series of reports whose output is recalculated and updated in real-time as you change inputs in your appraisal. This responsiveness enables users to make instant assessments of the impact of any proposed amendments to the scheme.

The following reports are generated in Optimix and will be reviewed in the pages that follow:

- Summary
- Tenure
- RLV
- Unit

- Cashflow
- Affordability
- Sensitivities
- Optimix

The sheets featuring each of the above reports can be revealed or hidden by using the checkboxes in the *Tools and Reports* section on the *Welcome* sheet:

Reports can be printed separately or in combinations using the *Print Reports* button in the *Actions* section on the *Welcome* sheet – for more information, see the *Printing Reports* section on page 11 of this user guide:

If the *Revenue Income & Costs* sheet is activated and contains any inputs – i.e. it has an effect on the discounted cashflow – then the message DIRECT CASHFLOW INPUTS will be displayed on many of these report sheets, in a different cell on each report (e.g. on the *Tenure* report, shown below).

If you select the cell containing this status, Optimix will offer to navigate directly to the *Revenue Income & Costs* sheet, where the direct cashflow inputs are located:

Summary report

The *Summary* report collates key data at the whole scheme level for the following:

- Dates
- Residential & Non-Residential Units
- Scheme Costs
- Scheme Funding
- Financial Performance
- Scheme Benchmarks

Good to Know…

This report has been designed to double as a scheme approval sign-off sheet for printing – see **Rows 57 to 70**.

Outputs in the *Financial Performance* section will be highlighted red or green according to their comparison with any hurdles defined on the *Assumptions* sheet (see page 21):

FINANCIAL PERFORMANCE				SCHEME BENCHMARKS		
NET PRESENT VALUE (NPV)	-£	0		MAIN WORKS (£/M2 RESI ONLY)	£	716
INTERNAL RATE OF RETURN (IRR)		5.00%		TOTAL WORKS (£/M2 RESI ONLY)	£	716
1ST YEAR OF INTEREST COVER		2		TOTAL COST (£ PER UNIT - RESI)	£	166,250
LOAN REPAYMENT YEAR		42		TOTAL SUBSIDY (£ / AFFORDABLE UNIT)	£	1,163
NET INTEREST COVER (YR1)		95.97%		COST TO VALUE RATIO		86.61%
NET INTEREST COVER (YR5) – FLEXIBLE		96.95%		ON COSTS % ACQUISITION & WORKS		9.20%
NET INTEREST COVER (YR5) - ANNUITY		99.82%				
SURPLUS / DEFICIT (£ PER RESI UNIT YEAR 1)	-£	149				

Tenure report

The *Tenure* report summarises various aspects of the appraisal broken down by tenure, by residential and non-residential elements, and for the entire scheme:

- Unit Summary (including habitable rooms, persons, internal area, etc)
- Capital Costs & Funding
- Financial Performance
- Scheme Benchmarks

Good to Know…

Outputs in the *Financial Performance* section will be highlighted red or green according to their comparison with any hurdles defined on the *Assumptions* sheet (see page 21):

FINANCIAL PERFORMANCE	AFFORDABLE RENT	TARGET RENT	MARKET RENT	SHARED OWNERSHIP	LONDON LIVING RENT	DISCOUNTED SALE	PRIVATE SALE	RESIDENTIAL TOTAL	NON RESIDENTIAL RENT	NON RESIDENTIAL SALE	SCHEME TOTAL
Net Present Value (£)	£ 1,701,261	-£ 816,176	£ 1,854,711	£ 3,062,792	£ 2,070,090	£ 260,527	£ 3,542,628	£10,187,788	£ 5,018,068	£ 5,579,525	£25,286,325
Net Present Value (Unit)	£ 354,687	£ 48,146	£ 203,857	£ 82,078	£ 67,022	£ 54,288	£ 104,605	£ 79,392	£ 3,306,321	£ 863,262	£ 184,572
Internal Rate of Return	12.90%	0.93%	13.87%	12.43%	9.54%	46.82%	81.11%	19.75%	29.52%	61.27%	32.32%
Cost to Value	49.40%	48.29%	50.59%	52.04%	66.73%	70.64%	52.27%	55.21%	261.37%	76.33%	61.63%
Present Value of Income (£)	£ 2,280,748	£ 889,090	£ 2,265,695	£ 5,143,371	£ 3,605,999	£ 153,240	£ 562,795	£13,710,117	£11,264,718	£ 6,356,408	£29,345,629
Open Market Value (£)	£ 2,205,000	£ 3,345,000	£ 1,855,000	£ 4,536,250	£ 3,375,000	£ 2,134,800	£ 6,343,800	£23,794,850	£ 515,789	£ 3,440,000	£27,750,639
1st Year of Interest Cover	1	NO COVER	1	1	1	n/a	n/a	1	2	n/a	1
Loan Repayment Year	13	NOT REPAID	12	13	14	n/a	n/a	8	6	n/a	5
Peak Debt (£)	-£ 1,031,312	INFINITE	-£ 874,458	-£ 1,242,043	-£ 2,190,889	n/a	n/a	-£ 3,110,829	-£ 1,421,442	n/a	-£ 3,416,053
Peak Debt Year	1	INFINITE	1	1	1	n/a	n/a	1	1	n/a	1
Net Interest Cover (Yr1)	230.93%	76.32%	221.43%	117.76%	181.53%	n/a	n/a	337.65%	n/a	n/a	416.10%
Net Interest Cover (Yr5) - Flex.	373.47%	82.20%	347.44%	297.59%	252.16%	n/a	n/a	1034.98%	6654.67%	n/a	n/a
Net Interest Cover (Yr5) - Annuity	269.53%	89.02%	258.40%	203.65%	211.88%	n/a	n/a	429.57%	724.95%	n/a	781.11%

RLV report

The *Residual Land Value* report is presented in the industry-standard RLV format. The purpose of the report is to help you understand the potential land value of a scheme after assessing development potential, considering all development costs – including planning requirements, statutory requirements and developer profit.

In cases where units are being sold on to another provider, you can apply a reduction to gross development value to account for end user fees (see page 61).

The visible rows of the report will vary according to which tenures in the appraisal have units input, and which cost and funding elements are present.

Residual Land Value Summary:	Scenario A									MASTER AUDIT
REVENUE		DIRECT CASHFLOW INPUTS								TRUE
Sales Valuation	Units	ft²	Gross Sales	RP Fees		Sales Rate	Unit Price		Net Sales	
London Affordable Rent	10	16,469	£ 2,040,200	£ -	£	124	£ 204,020	£	2,040,200	
Target Rent	10	14,747	£ 807,081	£ 24,212	£	53	£ 78,287	£	782,868	
Market Rent	22	35,198	£ 11,302,455	£ 30,800	£	320	£ 512,348	£	11,271,655	
Shared Ownership	18	28,955	£ 5,406,968	£ 216,279	£	179	£ 288,372	£	5,190,689	
London Living Rent	14	22,712	£ 4,508,824	£ -	£	199	£ 322,059	£	4,508,824	
Discounted Sale	12	20,021	£ 3,841,200		£	192	£ 320,100	£	3,841,200	
Private Sale	10	14,902	£ 2,980,000		£	199	£ 298,000	£	2,980,000	
Totals	96	153,063	£ 30,886,728	£ 271,291	£	200	£ 318,911	£	30,615,437	

GROSS DEVELOPMENT VALUE £ 30,615,437

Unit report

The *Unit* report summarises and averages key data at the unit schedule level, including:

- Number of bedrooms

- Number of units in the scheme for each tenure

- Gross and net rent levels

- Open Market Value for Private Sale, Discounted Sale and Shared Ownership units

- Affordability income level for Private Sale, Discounted Sale and Shared Ownership units

RESIDENTIAL SCHEDULE			NUMBER OF UNITS								NET RENT CHARGED PER WEEK			
UNIT TYPE	BEDS	NIA (m2)	AFFORDABLE RENT	TARGET RENT	MARKET RENT	SHARED OWNERSHIP	LONDON LIVING RENT	DISCOUNTED SALE	PRIVATE SALE	TOTAL	AFFORDABLE RENT	TARGET RENT	MARKET RENT	LONDON LIVING RENT
Unit Type A	2	133		5		3	1	2		11		£158.34		£234.92
Unit Type B	1	84	3	1	4	3	1		3	15	£50.91	£96.94	£67.00	£140.00
Unit Type C	4	216		2	4	3	1	2		12		£145.46	£249.00	£241.00
Unit Type D	3	177	7		4	5	1	3	6	26	£199.00		£199.00	£257.61
Unit Type E	3	165	2	6		5	1			14	£168.70	£129.54		£256.61
Unit Type F	2	141	5	3	4		1	3	4	20	£99.40	£130.00	£119.00	£229.92
Unit Type G	2	159				8	1	2	5	16			£104.00	£152.00
Unit Type H	3	181				3	1		7	11				£253.81
Unit Type I	3	179	4	3			1	2	2	12	£201.15	£157.04		£160.00
Unit Type J	4	222	9		8	1	1		9	28	£252.10		£288.00	£177.30
TOTAL			30	20	32	23	10	14	36	165	£ 971	£ 797	£1,026	£2,203

AVERAGES			NUMBER OF UNITS								NET RENT CHARGED PER WEEK			
BED SIZE	BEDS	NIA	AFF	TAR	MAR	SHA	LLR	DIS	PRI	TOT	AFF	TAR	MAR	LLR
1 Bed Units	1	84	3	1	4	3	1	0	3	15	£ 51	£ 97	£ 67	£ 140
2 Bed Units	2	145	5	8	12	3	3	7	9	47	£ 99	£ 140	£ 109	£ 206
3 Bed Units	3	175	13	9	4	13	4	5	15	63	£ 195	£ 139	£ 199	£ 232
4 Bed Units	4	220	9	2	12	4	2	2	9	40	£ 252	£ 145	£ 275	£ 259
5+ Bed Units	5+		0	0	0	0	0	0	0	0				

Cashflow report

The *Cashflow* report summarises key elements of the discounted cashflow for the scheme as a whole and how initial funding requirements are repaid over time.

Cashflow data is tabulated as a breakdown of net operating income into categories:

- Gross rent
- Ground rent
- Sales income
- Other income
- Service costs

- Management costs
- Maintenance costs
- Sinking fund
- Voids & bad debt
- Other costs

NET OPERATING INCOME BREAKDOWN

Year	Gross Rent	Ground Rent	Sales Income	Other Income	Service Cost
1	£ 4,078,571	£ 437,700	£ -	£ -	£ 143,446
2	£ 4,151,128	£ 437,700	£ -	£ -	£ 147,749
3	£ 4,225,862	£ 437,700	£ -	£ 25,000	£ 152,181
4	£ 4,302,838	£ 437,700	£ -	£ 25,000	£ 156,747
5	£ 4,477,510	£ 437,700	£ -	£ 25,000	£ 161,449
6	£ 4,554,763	£ 437,700	£ 152,758	£ 25,000	£ 166,293
7	£ 4,808,848	£ 437,700	£ 155,814	£ 25,000	£ 171,282
8	£ 4,890,533	£ 437,700	£ 158,930	£ 25,000	£ 176,420
9	£ 5,081,887	£ 437,700	£ 162,108	£ 25,000	£ 181,713
10	£ 5,168,257	£ 437,700	£ 165,351	£ 40,000	£ 187,164
11 to 15	£ 25,007,610	£ 2,188,500	£ 2,717,895	£ 75,000	£ 1,023,489
16 to 20	£ 28,546,280	£ 2,188,500	£ 1,749,607	£ 75,000	£ 1,186,505
21 to 25	£ 32,583,817	£ 2,188,500	£ 1,982,522	£ -	£ 1,375,484
26 to 30	£ 36,983,565	£ 2,188,500	£ 2,239,680	£ -	£ 1,594,563
31 to 35	£ 42,512,016	£ 2,188,500	£ 1,219,385	£ -	£ 1,848,536
36 to 40	£ 48,555,321	£ 2,188,500	£ 1,397,114	£ -	£ 2,142,959
41 to 45	£ 56,169,467	£ 2,188,500	£ -	£ -	£ 2,484,277
46 to 50	£ -	£ -	£ -	£ -	£ -
51 to 55	£ -	£ -	£ -	£ -	£ -
56 to 60	£ -	£ -	£ -	£ -	£ -

				DIRECT CASHFLOW INPUTS	
Management (Incl. op cost as % of rent)	Maintenance	Sinking Fund	Voids & Bad Debt	Other Costs	Net Operating Income
£ 1,963,872	£ 68,711	£ -	£ 88,949	£ -	£ 2,251,293
£ 337,582	£ 70,429	£ -	£ 91,618	£ -	£ 3,941,452
£ 346,647	£ 72,189	£ -	£ 94,366	£ -	£ 4,023,178
£ 355,977	£ 73,994	£ -	£ 97,197	£ -	£ 4,081,623
£ 373,853	£ 75,844	£ -	£ 100,113	£ -	£ 4,228,951
£ 376,787	£ 77,740	£ 302,972	£ 103,072	£ -	£ 4,143,357
£ 398,063	£ 79,684	£ 310,547	£ 106,119	£ -	£ 4,361,668
£ 399,816	£ 81,676	£ 318,310	£ 109,256	£ -	£ 4,426,685
£ 419,779	£ 83,718	£ 326,268	£ 112,485	£ -	£ 4,582,733
£ 423,035	£ 85,810	£ 334,425	£ 115,810	£ -	£ 4,665,063
£ 2,201,022	£ 331,544	£ 1,036,624	£ 492,447	£ -	£ 24,903,878
£ 2,536,459	£ 375,112	£ 1,172,845	£ 567,229	£ -	£ 26,721,237
£ 2,936,384	£ 266,045	£ 1,326,967	£ 651,811	£ -	£ 30,198,149
£ 3,352,540	£ 301,005	£ 1,501,341	£ 748,946	£ -	£ 33,913,349
£ 5,615,355	£ 340,560	£ 1,698,629	£ 861,989	£ -	£ 35,554,831
£ 4,487,632	£ 385,312	£ 1,921,843	£ 993,145	£ -	£ 42,210,044
£ 7,798,364	£ 435,945	£ 2,174,389	£ 1,148,565	£ -	£ 44,316,426
£ -	£ -	£ -	£ -	£ -	£ -
£ -	£ -	£ -	£ -	£ -	£ -
£ -	£ -	£ -	£ -	£ -	£ -

Affordability report

The *Affordability* report details potential buyers' required household income levels for each unit type – under the Shared Ownership, Discounted Sale and Private Sale tenures – in terms of:

- Income required to afford mortgage
- Income required to afford all housing costs (i.e. including service charges and ground rent)

SHARED OWNERSHIP

UNIT SCHEDULE			AFFORDABILITY TEST (INCOME FOR MORTGAGE)						
UNIT TYPE	BEDS	UNITS	OPEN MARKET VALUE	INITIAL SALES %	PURCHASE PRICE	DEPOSIT	MORTGAGE REQUIRED	GROSS INCOME REQUIRED (PA)	AFFORDABILITY CRITERIA PASSED?
UNIT TYPE A	2	3	£ 511,500	80%	£ 409,200	£ 60,920	£ 308,280	£ 81,840	Ineligible
UNIT TYPE B	1	3	£ 97,777	60%	£ 58,666	£ 5,867	£ 52,800	£ 11,733	Yes
UNIT TYPE C	4	9	£ 218,147	45%	£ 98,166	£ 9,817	£ 88,350	£ 19,633	Yes
UNIT TYPE D	3	5	£ 168,888	66%	£ 111,466	£ 11,147	£ 100,320	£ 22,293	Yes
UNIT TYPE F	5	5	£ 175,506	70%	£ 133,506	£ 13,351	£ 120,155	£ 26,701	Yes
UNIT TYPE H	5	3	£ 417,777	80%	£ 334,222	£ 33,422	£ 300,800	£ 66,844	Yes
UNIT TYPE J	4	1	£ 516,666	70%	£ 361,666	£ 36,167	£ 325,500	£ 72,333	Yes

SHARED OWNERSHIP

UNIT SCHEDULE			AFFORDABILITY TEST (HOUSING COSTS AS % OF INCOME)								
UNIT TYPE	BEDS	UNITS	RENT (% UNSOLD EQUITY)	RENT (PA)	SERVICE CHARGE (PA)	MORTGAGE PAYMENT (PA)	HOUSING COSTS (PA)	NET INCOME REQUIRED (PA)	GROSS INCOME REQUIRED (PA)	AFFORDABILITY CRITERIA PASSED?	COSTS % NET INCOME	COSTS % GROSS INCOME
UNIT TYPE A	2	3	4.00%	£ 4,092	£ 522	£ 24,564	£ 29,178	£ 60,982	£ 88,418	Ineligible	48.96%	33.00%
UNIT TYPE B	1	3	15.00%	£ 8,525	£ 417	£ 5,522	£ 10,452	£ 25,580	£ 31,702	Yes	40.90%	35.00%
UNIT TYPE C	4	9	17.00%	£ 20,397	£ 470	£ 5,893	£ 26,759	£ 56,081	£ 81,089	Ineligible	47.72%	33.00%
UNIT TYPE D	3	5	9.00%	£ 5,168	£ 365	£ 5,901	£ 12,225	£ 29,212	£ 37,044	Yes	41.85%	33.00%
UNIT TYPE F	5	5	11.00%	£ 4,538	£ 526	£ 8,014	£ 13,278	£ 31,583	£ 40,257	Yes	42.51%	35.00%
UNIT TYPE H	3	3	12.00%	£ 10,027	£ 783	£ 20,063	£ 30,873	£ 63,310	£ 93,554	Ineligible	48.79%	33.00%
UNIT TYPE J	4	1	12.00%	£ 18,500	£ 1,252	£ 21,711	£ 41,563	£ 82,100	£ 125,940	Ineligible	50.65%	35.00%

Methodologies and settings

Affordability test results are based on:

- the user's choice of methodology for calculating affordability **(Cells R2 to S2)**
  - ○ the one used by the Greater London Authority (*GLA*)
  - ○ the one used by *Homes England*
  - ○ the set of default affordability assumptions applicable in previous versions of Optimix (*Bespoke*)

AFFORDABILITY CALCULATIONS	Scenario A		Affordability Calculation Method	Homes England

- the pre-configured thresholds and rates set on **rows 321 to 340** which define each of those methodologies:

ASSUMPTIONS		GLA	Homes England	Bespoke	GLA	Comment
Max % of Net Income		40%	30%	40%	40%	
Inc. Multiplier for Mortgage		4.50	4.50	3.00	4.50	
Deposit %		10.00%	10.00%	10.00%	10.00%	
Loan Period		25	25	25	25	
Interest Rate		6.50%	6.50%	6.50%	6.50%	
Gross to Net Ratio		70%	FORMULA	70%	70%	HE calc using formula in F347
Max Gross Inc - 1 Beds	1	£ 90,000	£ 80,000	£ 90,000	£ 90,000	As per Capital Funding Guide
Max Gross Inc - 2 Beds	2	£ 90,000	£ 80,000	£ 90,000	£ 90,000	As per Capital Funding Guide
Max Gross Inc - 3 Beds	3	£ 90,000	£ 80,000	£ 90,000	£ 90,000	As per Capital Funding Guide
Max Gross Inc - 4 Beds	4	£ 90,000	£ 80,000	£ 90,000	£ 90,000	As per Capital Funding Guide
Upper Tax £			£ 50,270			For GLA/HE Gross to Net Calc
Tax Free £			£ 12,570			For GLA/HE Gross to Net Calc
Lower Tax £			£ 37,700			For GLA/HE Gross to Net Calc
Lower Tax %			20.00%			For GLA/HE Gross to Net Calc
Upper Tax %			40.00%			For GLA/HE Gross to Net Calc
NI Free £			£ 12,570			For GLA/HE Gross to Net Calc
NI %			12.00%			For GLA/HE Gross to Net Calc
Upper NI %			2.00%			For GLA/HE Gross to Net Calc
Max % of Gross Income			33.00%			Used to force a Gross Inc Calc

The pre-configured thresholds and rates in the pale green cells, as per the colour-coding convention elsewhere in Optimix, are editable for reconfiguration by the user – however, we would recommend use of the *Bespoke* methodology for trying any new configurations, as those for the *GLA* and *Homes England* methodologies are known settings.

Those in the light blue cells, as per the colour-coding convention elsewhere in Optimix, are only editable by the superuser in possession of the password protecting those inputs. Changes to these are unlikely to be necessary unless the tax/NI thresholds used by Homes England in their gross-to-net salary calculations are amended.

The settings defining the affordability calculation methodologies are as follows:

- **Max % of Net Income (Row 322)**: The percentage of net income that housing costs should not exceed.

- **Income Multiplier for Mortgage (Row 323)**: The multiplier used to determine the maximum level of mortgage that could be achieved.

- **Deposit % (Row 324)**: How much deposit a buyer is likely to pay, as a percentage of the mortgage amount.

- **Loan Period (Row 325)**: The length in years of the mortgage loan.

- **Interest Rate (Row 326)**: The percentage interest rate used by the model to calculate mortgage costs.

- **Gross to Net Ratio (Row 327)**: The ratio used to reduce gross mortgage income to a net income.

- **Maximum Gross Income (Rows 328 to 331)**: The maximum household income assumed by the model in determining mortgage affordability of units with different numbers of bedrooms.

- **Tax & NI thresholds/allowances (Rows 332 to 339)**: Used in calculations under the *GLA* and *Homes England* methodologies for converting gross income to net income.

- **Max % of Gross Income (Row 340)**: Used to force comparison of housing costs with gross income instead of net income under the Homes England methodology.

Columns L and U will display a status for each unit type according to whether or not they pass the affordability criteria applicable under the selected methodology (for Shared Ownership and Discounted Sale only).

A failure can be indicated by one of two possible statuses:

Ineligible: The gross income required to be eligible for a mortgage on this unit type exceeds the setting for *Maximum Gross Income* under the selected methodology.

AFFORDABILITY TEST (INCOME FOR MORTGAGE)						
OPEN MARKET VALUE	INITIAL SALES %	PURCHASE PRICE	DEPOSIT	MORTGAGE REQUIRED	GROSS INCOME REQUIRED (PA)	AFFORDABILITY CRITERIA PASSED?
£ 440,000	69%	£ 303,600	£ 30,360	£ 273,240	£ 91,080	Ineligible
£ 98,765	69%	£ 68,148	£ 6,815	£ 61,333	£ 20,444	Yes
£ 234,567	69%	£ 161,851	£ 16,185	£ 145,666	£ 48,555	Yes
£ 177,777	69%	£ 122,666	£ 12,267	£ 110,400	£ 36,800	Yes
£ 234,234	69%	£ 161,621	£ 16,162	£ 145,459	£ 48,486	Yes
£ 444,444	69%	£ 306,666	£ 30,667	£ 276,000	£ 92,000	Ineligible
£ 345,345	69%	£ 238,288	£ 23,829	£ 214,459	£ 71,486	Yes

No: The unit type fails the affordability test defined by the selected methodology and its configured settings/thresholds/rates.

AFFORDABILITY TEST (HOUSING COSTS AS % OF INCOME)								
RENT (% UNSOLD EQUITY)	RENT (PA)	SERVICE CHARGE (PA)	MORTGAGE PAYMENT (PA)	HOUSING COSTS (PA)	NET INCOME REQUIRED (PA)	GROSS INCOME REQUIRED (PA)	AFFORDABILITY CRITERIA PASSED?	COSTS % NET INCOME	COSTS % GROSS INCOME
2.60%	£ 3,546	£ 522	£ 18,225	£ 22,293	£ 48,232	£ 67,555	No	46.22%	33.00%
2.60%	£ 6,523	£ 417	£ 4,091	£ 11,031	£ 26,753	£ 33,427	Yes	41.23%	33.00%
2.60%	£ 1,891	£ 470	£ 9,716	£ 12,076	£ 28,907	£ 36,594	Yes	41.78%	33.00%
2.60%	£ 1,433	£ 365	£ 7,364	£ 9,162	£ 22,901	£ 27,763	Yes	40.01%	33.00%
2.60%	£ 1,888	£ 626	£ 9,702	£ 12,216	£ 29,195	£ 37,019	Yes	41.84%	33.00%
2.60%	£ 3,582	£ 783	£ 18,409	£ 22,774	£ 49,077	£ 69,012	No	46.41%	33.00%
2.60%	£ 2,783	£ 1,252	£ 14,304	£ 18,340	£ 41,284	£ 55,576	Yes	44.42%	33.00%

Affordability goal-seek

IMPORTANT: This function is not available for Discounted Sale or Private Sale units.

For Shared Ownership units, Optimix includes a goal-seek function to perform automatic and iterative adjustment of input values on the *Resi Units* sheet – for **First Tranche Sale %**, **Rent %**, or **Net Rent Override** (if applicable) – related to any unit types which currently fail the affordability tests under the selected methodology for mortgage and/or housing costs, in an attempt to determine a new input value which would result in affordability being achieved for those units.

The button used to launch the affordability goal-seek can be found in **Cells Y7 to Z7**. If no Shared Ownership units currently fail the affordability tests under the selected methodology (or if there are no Shared Ownership units in the appraisal), the button will be labelled **All SO affordable**, and the goal-seek function will be unavailable:
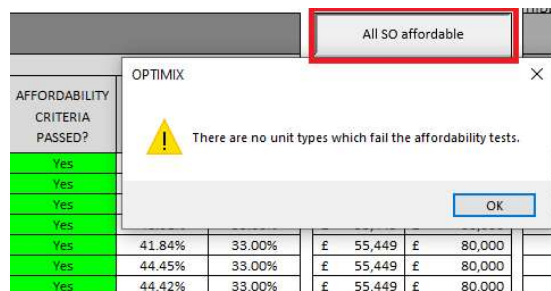
If there is at least one unit type which currently fails the mortgage and/or housing costs test under the selected methodology, the button will be labelled **Make SO affordable**, indicating that the goal-seek function is available:

GOOD TO KNOW

The affordability goal-seek function can also be launched from a similar button on the *Resi Units* sheet **(Cells AP13 to AR13)**, the label for which will also change to indicate the absence/presence of unaffordable SO units:

Upon first launching the affordability goal-seek function, a warning will be displayed, advising the user that **existing inputs will be overwritten** and that the **Undo function in Excel will not be able to revert to the original inputs** after use of the function.

Click OK to acknowledge and dismiss the warning – if you wish to abort the use of the goal-seek function (perhaps to save a copy of your appraisal in its current state first), click the *Cancel* button on the *Make SO affordable* dialog which is then displayed:
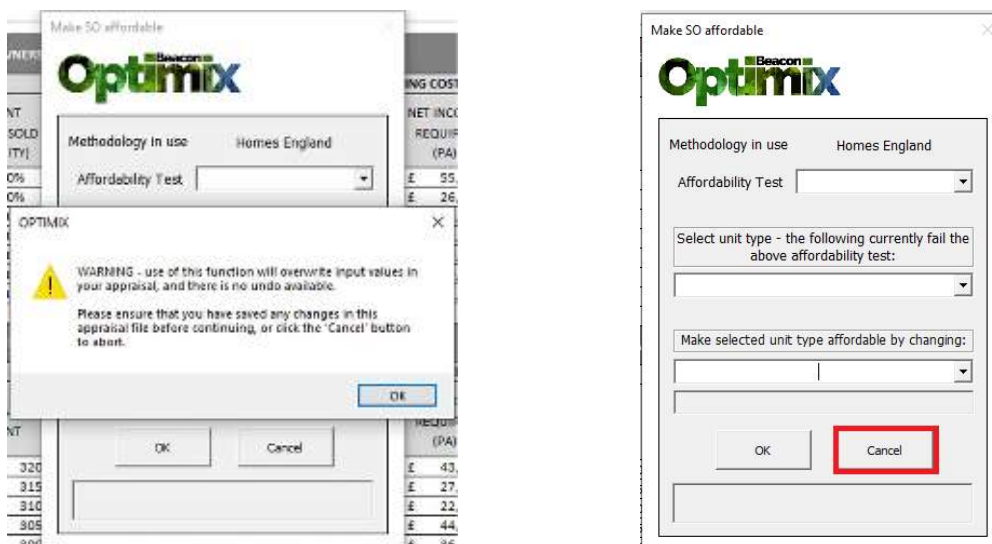
If you choose to proceed with the affordability goal-seek, the first step is to select which affordability test you wish to focus on getting your Shared Ownership units to pass:

You will be notified if you choose a test type which no Shared Ownership units currently fail, and you would then need to select the other test type:


The next step is to select which unit type you wish the goal-seek to attempt to achieve affordability for – only those unit types failing the selected affordability test will be available in the dropdown:
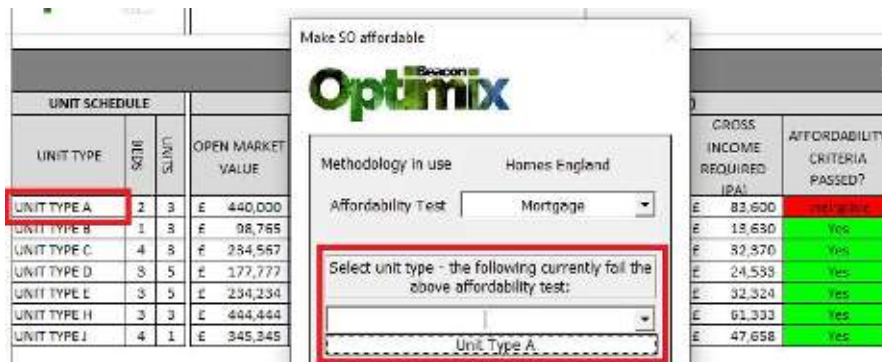
The last step before running the affordability goal-seek for your selected unit type is to choose which input value it should iteratively change in attempting to achieve affordability.

For the **Mortgage** affordability test type, the only option is **First Tranche % Sold**:
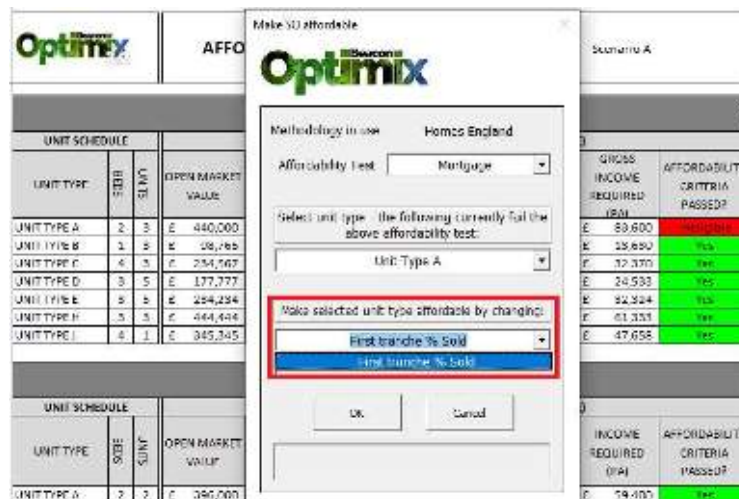
For the **Housing Costs** affordability test type, the option to vary the **Rent %** input is added to the dropdown:

If the selected unit type also has a non-zero input for **Shared Ownership net rent override** in **Column CG** of the *Resi Units* sheet, a notification will be displayed at the bottom of the *Make SO affordable* dialog, and **Rent Override £** will replace the *Rent %* option in the dropdown:

Finally, to begin the goal-seek attempt with the selected options, click the *OK* button.

As the function iterates over new values for the selected input, an update on progress towards affordability will be displayed at the bottom of the *Make SO affordable dialog*:
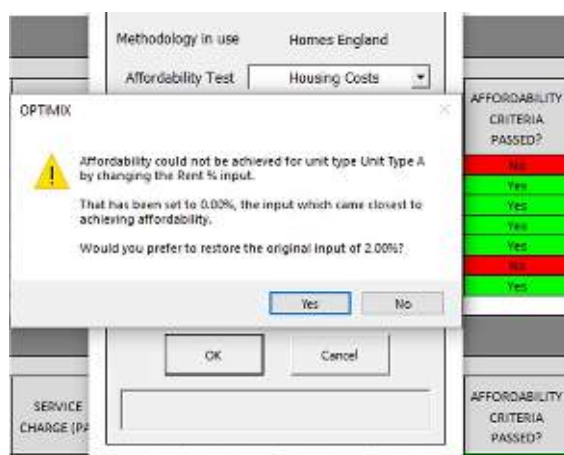

Possible goal-seek outcomes

At the conclusion of the goal-seek for a unit type, one of three outcomes is possible:

- **Affordability was achieved** for the selected unit type by changing the selected input; the new value for which will be confirmed by the subsequent message displayed:

- The goal-seek achieved affordability <u>but</u> with an input value which lies **outside of the recommended upper/lower data validation limits** for the selected input type; the user will then be offered the option to change the input to the value of that limit (click *Yes*), or retain the value reached by the goal-seek (click *No*):

- **Affordability could not be achieved** by changing the selected input value; the user will then be offered the option to revert to the original value for that input (click *Yes*) or retain the input value (often zero) which came closest to achieving affordability (click *No*):

Once the affordability goal-seek has been run for all Shared Ownership unit types which previously failed the selected affordability test, if they all now pass that test, the user will be notified of the successful completion:

It is recommended that the user performs a manual sense-check of the new inputs calculated by the affordability goal-seek at this stage, by reviewing them on the *Resi Units* sheet in **Columns AO and AP** (and **Column CG** if any net rent overrides were applicable).

Sensitivities report

The *Sensitivities* report is an analysis of the potential impact of hypothetical increases or decreases in works costs and/or sales values, and of the combined impact of both.

COMBINED SENSITIVITY	AFFORDABLE RENT	TARGET RENT	MARKET RENT	SHARED OWNERSHIP	LONDON LIVING RENT	DISCOUNTED SALE	PRIVATE SALE	NON-RESI RENT	NON-RESI SALE	TOTAL
Units	11	17	9	23	22	14	42	5	6	137
NPV £ (without sensitivity)	£ 1,701,561	£ 818,476	£ 1,834,711	£ 1,887,797	£ 1,474,490	£ 760,027	£ 3,347,678	£ 9,918,964	£ 3,179,573	£ 25,286,325
Works & Sales Variations above	-£ 38,168	-£ 57,421	-£ 32,618	-£ 307,410	-£ 150,370	-£ 159,575	-£ 431,354	-£ 47,234	-£ 166,468	-£ 1,480,619
NPV (with sensitivity)	£ 1,663,394	£ 875,896	£ 1,801,093	£ 1,580,387	£ 1,324,120	£ 600,452	£ 2,916,323	£ 9,871,730	£ 3,013,105	£ 23,205,706

User input is required in this report in order to set the percentage **(Cells E4 and J4)** and direction **(Cells F4 and K4)** of variances under consideration:

Works Cost	5%	Increase		Sales Values	5%	Decrease

Good to Know…

The hypothetical variances in works costs and sales values modelled in this report **do not impact the output elsewhere in the appraisal**. As such, interest calculations and on cost values are not adjusted to reflect them, as the report is self-contained.

The percentages applied only increase or decrease works costs and sales values in the calculations on this sheet, and therefore do not change the value of any on-costs or interest calculated elsewhere in Optimix.

Optimix

The *Optimix* report operates in conjunction with the *Optimiser* tool, which offers the ability to analyse the performance of each residential unit type in the schedule and under each residential tenure (for those where inputs have been made).

After optimisation calculations have been performed, the top section of the report – **Rows 8 to 110** (unused rows are auto-hidden) will display results in terms of one the following indicators:

- Total Scheme Costs
- Present Value of Income
- Initial Sales, Grant, and Present Values (less retained profit)
- Net Present Value
- Residual Land Value
- Capital Surplus/Deficit
- Package Deal Price (Acquisition & Works)

DESCRIPTION	BEDS	PERSONS	GIA	AFFORDABLE RENT UNITS	AFFORDABLE RENT NPV	TARGET RENT UNITS	TARGET RENT NPV	MARKET RENT UNITS	MARKET RENT NPV	SHARED OWNERSHIP UNITS	SHARED OWNERSHIP NPV
Unit Type A	2	3	163			5	-£ 174,857			3	£ 185,331
Unit Type B	1	2	108	3	-£ 47,101	1	-£ 101,899	4	-£ 11,993	3	£ 182,373
Unit Type C	4	6	252			2	-£ 411,622	4	£ 162,595	3	£ 156,388
Unit Type D	3	5	203	7	£ 161,088			4	£ 114,629	5	£ 112,561
Unit Type E	3	5	196	2	£ 115,243	6	£ 232,446			5	£ 108,902
Unit Type F	2	3	171	5	£ 12,171	1	-£ 248,885	4	£ 11,562		
Unit Type G	2	4	200					8	£ 7,237		
Unit Type H	3	5	210							1	£ 291,467
Unit Type I	3	5	206	4	£ 164,047	3	-£ 273,007				
Unit Type J	4	6	256	9	£ 232,400			8	£ 206,114	1	£ 263,763
TOTAL RESI	458	742	27846	30	£ 4,026,801	20	-£ 5,050,723	32	£ 2,002,794	23	£ 4,730,357

The Optimiser tool

Once all inputs in an appraisal have been finalised, users should then run the *Optimiser* tool in order to prepare and regularise unit schedule and scheme data for display in the report.

Before the first run of the Optimiser, the synchronisation status in **Cells H6 to I6** will be highlighted red and set to **ERROR**. This is an indication that the report data has not yet been prepared.

To run the Optimiser, users should first select the indicator for which they wish to see results:

…and then select the preferred basis for summarising the results:

…before clicking the *Run Optimiser* button:

Optimix will display a dialog as it synchronises and regularises the report data, to indicate progress:

…and will confirm once these calculations are finished, at which point the synchronisation status will be highlighted green and set to TRUE:

The user may then, if they wish, change their choice of indicator and/or summary basis. The top section of the report will update to reflect any change to the selections.

> **Good to know…**
>
> If changes are made to inputs elsewhere in the appraisal (e.g. *Resi Units*, *Scheme Assumptions Used*) after the Optimiser has been run – and if those changes impact the long-term cashflow – then the synchronisation status will be highlighted red and reset to **ERROR.** This is an indication that the Optimiser needs to be re-run to refresh the data displayed by the report:
>
> | SYNCHRONISE |
> |:---:|
> | Run Optimiser |
> | **ERROR** |

IMPORTANT:

Optimiser NPV results - Shared Ownership & London Living Rent

In some circumstances, the Optimiser may produce a different NPV compared to that calculated elsewhere in the appraisal. In this case, the synchronisation status will be highlighted orange and set to WARNING:

SYNCHRONISE
Run Optimiser
WARNING

…and an explanatory message will be displayed:
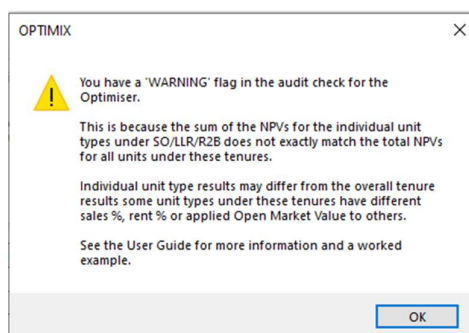
This can occur in schemes including Shared Ownership and/or London Living Rent units, for the following reason.

When staircasing is set to a fixed percentage of the whole property value – rather than a percentage of unsold equity – it follows that units with a higher initial sales percentage will go on to staircase less than units with a lower initial sales percentage, since they begin closer to the staircasing ceiling.

The Shared Ownership cashflow takes the average initial sales **amount** and uses it as the basis for calculating the average initial sales **percentage**. Staircasing is then applied from that initial sales percentage up to the staircasing ceiling throughout the staircasing period.

As staircasing occurs, the average rent decreases to reflect the increasing proportion of equity. This is the way staircasing is forecast in all major models. A different NPV result to the main is generated in the Optimiser data if staircasing is calculated for individual unit types **AND** if initial sales percentages and rents are **BOTH** different.

Clicking the WARNING synchronisation status will show (or subsequently hide) a similar explanatory note on the *Optimix* sheet itself:

11. Secondary input

Optimix includes three additional sheets which accept input and provide supplementary functionality and output. Using them is optional – they are available for users who need to account for other factors and variables which may be applicable to your appraisal of a scheme, but which are not reflected elsewhere in the model.

> **IMPORTANT:**
>
> As mentioned in the introductory section of this user guide, the screenshots in this section contain example or test inputs included solely to illustrate how they are used in this area of Optimix, and to show you where and how they are presented.
>
> They are not representative of any realistic inputs, averages or benchmarks for real-world housing development schemes, and are not indicative of the inputs you may or may not need to produce a viable/non-viable scheme within your organisation.

Rent Loss

The *Rent Loss* sheet enables the user to assess the potential impact of any loss of future rental income from existing units that are due to be demolished as part of the proposed development.

The top section **(Rows 4 to 11)** summarises the overall impact on NPV per tenure and across the scheme as a whole, on the basis of the inputs provided:

There are three input areas on this sheet:

- Schedule of Rented Homes Lost

- Assumptions applicable to these existing units

- Manual apportionment (optional)

> **Good to Know…**
>
> Outputs from this sheet do not affect those in the rest of your appraisal. They merely provide an adjusted NPV to reflect the impact of the hypothetical rent loss defined by the user's inputs on this sheet; in this sense, the sheet is self-contained.

Unit schedule

SCHEDULE OF RENTED HOMES LOST		
UNIT TYPE	NO. UNITS	RENT PW (EX. SC)
2b3p flats	24	£ 150.00
TOTAL	24	£ 3,600.00

Inputs for the schedule of existing rented units are as follows:

- *Unit Type* **(Column B)**

    o   A label to appropriately describe and identify each type of rented home being lost.

- *No. of Units* **(Column C)**

    o   How many of each unit type will be demolished.

- *Rent PW (Ex. SC)* **(Column D)**

    o   Weekly rental income (excluding service charge) being lost per home.

Assumptions

Rent loss calculations depend upon a set of assumptions that the user must provide. The scope of these assumptions is limited to the *Rent Loss* sheet – they **do not affect Scheme Assumptions** or Standard Assumptions on the main *Assumptions* sheet.

Consideration should be given to how best to reflect the period over which the rental income will be lost when setting these values.

ASSUMPTIONS			
RENT CALC	On	MAJOR REPAIRS PER UNIT - YRS 1-5	£1,000
DCF PERIOD	40	MAJOR REPAIRS PER UNIT - YRS 6-10	£2,000
RENT INFLATION	3.00%	MAJOR REPAIRS PER UNIT - YRS 11-15	£3,000
MANAGEMENT COST INFLATION	3.00%	MAJOR REPAIRS PER UNIT - YRS 16-20	£4,000
MAINTENANCE COST INFLATION	3.00%	MAJOR REPAIRS PER UNIT - YRS 21-25	£4,000
MANAGEMENT COSTS	£ 1,000	MAJOR REPAIRS PER UNIT - YRS 26-100	£4,000
MAINTENANCE COSTS	£ 1,000	DISCOUNT RATE	5.00%
VOIDS & BAD DEBTS %	5.00%	APPORTIONMENT BASIS	% Units

PRESENT VALUE OF LOST RENT		£ 2,393,299

Inputs required are as follows:

- *Rent Calc* **(Cell G15)**

    o   This turns the rent loss calculator on and off.

- *DCF Period* **(Cell G16)**

    o   The number of years over which to calculate the rent loss, usually set to match the expected remaining lifetime of the existing homes were they not to be demolished.

- *Rent Inflation* **(Cell G17)**

  - Annual rate by which rent will be inflated over the DCF period specified above when calculating rent loss.

  - This will often be set to match the equivalent standard/scheme assumption.

- *Management Cost Inflation* **(Cell G18)**

  - Management inflation - annual rate by which management costs inflate over the DCF period specified above when calculating overall impact of the loss of rented homes.

  - This will often be set to match the equivalent standard/scheme assumption.

- *Maintenance Cost Inflation* **(Cell G19)**

  - Maintenance inflation - annual rate by which maintenance costs inflate over the DCF period specified above when calculating overall impact of the loss of rented homes.

  - This will often be set to match the equivalent standard/scheme assumption.

- *Management Costs* **(Cell G20)**

  - The **annual** cost of management per unit – this may need to be higher than the equivalent standard/scheme assumption to reflect the units possibly being situated in an area with higher levels of anti-social behaviour in the area etc.

- *Maintenance Costs* **(Cell G21)**

  - The **annual** cost of day-to-day maintenance per unit – this may need to be higher than the equivalent standard/scheme assumption to reflect the units potentially being in poorer condition etc.

- *Voids & Bad Debts %* **(Cell G22)**

  - Rate of voids & bad debts, expressed as a percentage of gross rent - this may need to be higher than the equivalent standard/scheme assumption to reflect the potential undesirability of the units etc.

- *Major Repairs Per Unit* **(Cells I15 to I20)**

  - The annual cost of major repairs per unit that would have been invested in the existing homes to ensure that they are fit for purpose throughout the DCF period specified.

- *Discount Rate* **(Cell I21)**

  - The discount rate that will be applied to net rental income when calculating the capitalised value of the rental stream.

  - This will often be set to match the equivalent standard/scheme assumption.

- *Apportionment Basis* **(Cell I22)**

  - The basis upon which to distribute the impact of rent loss between the different tenures within the scheme being appraised.

  - The user can choose from apportionment based on:

    - ***% Units*** – the percentage of the total number of new units in the scheme coming from units in each tenure

    - ***% GIA*** – the percentage of the total gross internal area of all units in the scheme coming from the units in each tenure

    - ***Manual*** – see below

Manual apportionment

If the *Manual* option is selected for the apportionment of rent loss, percentages must be input in the section highlighted below, to be used in distributing the impact amongst the tenures within the scheme **(Cells G29 to G37)**:

TENURE	UNITS	GIA	MANUAL APP'T	SPLIT	NPV		RENT LOSS		ADJUSTED NPV
AFFORDABLE RENT	11	1,760		8.03%	£	1,701,561	£	397,561	£	1,304,000
TARGET RENT	17	2,204		12.41%	£	818,476	£	614,412	£	1,432,888
MARKET RENT	5	1,252		6.57%	£	1,834,711	£	325,277	£	1,509,433
SHARED OWNERSHIP	23	3,250		16.79%	£	1,687,297	£	831,264	£	1,056,533
LONDON LIVING RENT	22	3,190		16.06%	£	1,474,480	£	795,122	£	679,360
DISCOUNTED SALE	14	2,028		10.22%	£	54,288	£	505,987	-£	451,699
PRIVATE SALE	32	4,382		23.30%	£	3,347,078	£	1,156,541	£	2,191,137
NON RESIDENTIAL RENT	3	1,813		2.17%	£	9,018,964	£	108,426	£	8,910,539
NON RESIDENTIAL SALE	6	3,626		4.38%	£	5,179,573	£	216,851	£	4,962,721
TOTAL	117	23,090	0.00%	100.00%	£	24,590,596	£	4,957,440	£	19,629,745

These inputs must sum to exactly 100% - the audit status for the sheet and the appraisal as a whole will be set to FALSE if they do not.

The *Split* percentages, *NPV*, *Rent Loss* and *Adjusted NPV* shown above **(Columns H, I, J and K)** will reflect the unit schedule, assumptions and apportionment method provided by the user.

Detailed rent loss calculations can be examined from **Row 40** downwards.

Stock Condition

The *Stock Condition* sheet enables the user to model stock transfer proposals or the purchase of existing stock. This is done by entering stock condition survey costs to be accounted for in the appraisal in place of sinking fund calculations. The impact of the stock transfer on the overall cumulative present value of the scheme over the course of the DCF can then be assessed.

There are three input areas on this sheet, as follows:

- Assumptions to be applied when modelling the impact of the stock transfer

- Stock condition survey data (and manual adjustments, if required)

- Manual apportionment percentages

IMPORTANT

The outputs on this sheet will only be incorporated into cashflow calculations elsewhere in Optimix if the *Sinking Fund Type* setting for each tenure is set to *Stock Condition* on **Row 50** of the *Assumptions* sheet:

Sinking Fund Type		% Rebuild ▼
Sinking Fund (Start Year, Measured from CF Start)		Per Unit
		% Rebuild
Sinking Fund - Rebuild Cost per m2		Whole Life
Sinking Fund % - Years 1-5 (NB)		**Stock Condition**

Assumptions

ASSUMPTIONS					
INFLATION	3.00%	DCF PERIOD	40	APPORTIONMENT BETWEEN TENURES	% Units
VAT	20.00%	DISCOUNT RATE	5.00%	PRESENT VALUE OF MAJOR WORKS	£ 5,662,721

Note: Present Value here is for indicative purposes only

Inputs required for the *Assumptions* section on this sheet (**Rows 6 and 7**, shown above) are as follows:

- *Inflation* **(Cell G6)**

  o The rate by which sinking fund costs are to be inflated over the DCF period.

  o This will often be set to match the equivalent standard/scheme assumption.

- *VAT* **(Cell G7)**

  o The applicable percentage VAT rate.

  o This will often be set to match the equivalent standard/scheme assumption.

- *DCF Period* **(Cell I6)**

  o The number of years over which the discounted cashflow will be calculated (minimum 1 year; maximum 100 years).

  o This will often be set to match the equivalent standard/scheme assumption.

- *Discount Rate* **(Cell I7)**

  o Percentage discount rate to be applied in each year of the discounted cashflow.

- *Apportionment between tenures* **(Cell L6)**

  o The basis upon which to distribute between the different tenures within the scheme the impact of the cost of major works required on stock being transferred.

  o The user can choose from apportionment based on:

    ▪ *% Units* – the percentage of the total number of new units in the scheme coming from units in each tenure

    ▪ *% GIA* – the percentage of the total gross internal area of all units in the scheme coming from units in each tenure

    ▪ *Manual* – see below

Survey data

The assessed yearly cost of major works from your stock condition survey data should be entered (in today's money, i.e. not adjusted for future inflation) in **Column C**. Any manual adjustments that may be required can be entered in **Column D**. The sheet can accommodate entries for up to 100 years.

YEAR	STOCK CONDITION SURVEY DATA	MANUAL ADJUSTMENTS	COSTS INCLUDING ADJUSTMENTS	VAT	STOCK INCLUDING VAT
			CURRENT VALUES		
1	£ 2,500,000	£ 15,000	£ 2,515,000	£ 503,000	£ 3,003,000
2	£ 2,500,000		£ 2,500,000	£ 500,000	£ 3,000,000
3			£ -	£ -	£ -
4			£ -	£ -	£ -

Manual apportionment

If the *Manual* option is selected in **Cell L6** for the apportionment of stock condition costs, percentages must be input in the section highlighted below, to be used in distributing the impact of the costs amongst the tenures within the scheme **(Cells H116 to H119)**.

The manual apportionment inputs for tenures…

- whose *Sinking Fund Type* is set to *Stock Condition* on the *Assumptions* sheet (see the *IMPORTANT* note on the previous page), and
- under which there are units in the appraisal, and
- under which there are GIA inputs in the appraisal

…must sum to exactly 100%:

The *Split* percentages and *NPV* shown in the section above will reflect the survey data, assumptions and apportionment method provided by the user.

Detailed stock condition calculations can be examined from **Row 122** downwards.

Revenue Income & Costs

This sheet enables users to perform manual input of any long term income and costs not already represented elsewhere in the appraisal. Values entered are then incorporated into the discounted cashflow (i.e. the revenue period) and inflated accordingly.

> **IMPORTANT**
>
> The inputs on this sheet will only be incorporated into cashflow calculations elsewhere in Optimix if the on/off switch for the sheet is set to *On* (**Cells B4 to B6**):

Assumptions

Before inputting cost and income values, be sure to populate the assumptions on this sheet (**Columns G and I**), to specify inflation and VAT rates to be applied to the values entered. Entries made here do not affect the Scheme Assumptions or Standard Assumptions on the main *Assumptions* sheet, but you may wish to use those as the basis for the inputs here:

ASSUMPTIONS			
INCOME INFLATION	3.00%	INCOME VAT	20.00%
COST INFLATION	3.00%	COSTS VAT	20.00%

Income and cost entry

Up to 100 years of revenue period income and revenue period costs can be entered under each tenure. The main input areas of the sheet are divided into separate sections for each tenure, with the tenures arranged horizontally. Income input can be done in **Rows 12 to 111** and cost input in **Rows 116 to 215**.

For example, the first 10 years of the input section for revenue income for the first rent tenure – **Columns E to I, Rows 12 to 21**:

		AFFORDABLE RENT				
		ENTER INCOME AT 2024 PRICES			INFLATION	
YEAR	YR END MARCH	REVENUE INCOME	VAT	INCOME INCLUDING VAT	INFLATION	FUTURE INCOME
1	2024		£ -	£ -	100%	£ -
2	2025		£ -	£ -	100%	£ -
3	2026		£ -	£ -	100%	£ -
4	2027		£ -	£ -	100%	£ -
5	2028		£ -	£ -	100%	£ -
6	2029		£ -	£ -	100%	£ -
7	2030		£ -	£ -	100%	£ -
8	2031		£ -	£ -	100%	£ -
9	2032		£ -	£ -	100%	£ -
10	2033		£ -	£ -	100%	£ -

Users will also find a *Notes* section in **Column BG** for unrestricted text or formula inputs as required.

12. Other sheets

Optimix contains several sheets used as working areas for internal cashflow calculations and lookups. These are read-only sheets but can be examined by the user after revealing them by ticking the *Cashflow Calculations* checkbox on the *Welcome* sheet:

Sheets revealed by this checkbox include:

DCF   Calculations of the following for each residential tenure and for the entire scheme:

- a 100-year discounted cashflow

- a 100-year flexible mortgage cashflow

- a 100-year annuity calculation

Non-Resi CF Calcs   This calculates the cashflow for each non-residential unit type.

The **Rents** sheet contains other calculations and data tables used in lookups related to Target Rent **(Columns B to BF)**, London Affordable Rent **(Columns BH to CZ)**, London Living Rent **(Columns DB to DI)**, as well as:

- Local Housing Allowance data **(Columns DK to DQ)**
- Regional earnings data **(Columns DS to DU)**
- Regional house price data (from Nationwide House Price Indexation)
  - See **Columns DW to ER** – if required, future average property values and indices per region (i.e. beyond the last known/published figures) can be specified by a superuser using the blue password-protected input cells.
  - By default, these are repeats of the last known/published HPI figures.
- The BRMAs found within each local authority within England **(Columns EY to QZ)**

Again, this is a read-only sheet but can be examined by the user after revealing it by ticking the *Rents* checkbox on the *Welcome* sheet:

Audit sheet

Lastly, the *Audit* sheet contains a summary of various cross-checks and validations which, when combined, determine whether the model as a whole is in an error state. Most of the compiled results relate to sheet-specific audits which perform these tests:

Sheet	Result	Notes	Override
Resi Inputs	TRUE	Check sheet operates correctly	FALSE
Non-Resi Inputs	TRUE	Check sheet operates correctly	FALSE
Costs & Grants	TRUE	Check sheet operates correctly	FALSE
Timing	TRUE	Check sheet operates correctly	FALSE
Rent Loss	TRUE	Check rent losses are apportioned ok if manually apportioned	FALSE
Stock Condition	TRUE	Check applied apportionment of survey costs sums to 100%	FALSE
Assumptions	TRUE	Check inflation dates and rates entered for all tenures, check grant reclaim method vs R2B type	FALSE
DCF	TRUE	Check sheet operates correctly	FALSE
Summary Report	TRUE	Checks report matches inputs in key areas	FALSE
Tenure Report	TRUE	Checks report matches inputs in key areas	FALSE
RLV report	TRUE	Checks report matches inputs in key areas	FALSE
Version Numbering	TRUE	Checks the version numbering is compatible with consolidator (v[int].[int].[int])	N/A
Export to Sequel	TRUE	Checks sequel cash flow matches cost input	FALSE
Export to consolidator	TRUE	Confirms this scheme will export correctly to the consolidator	FALSE
Cashflow report	TRUE	Check sheet operates correctly	FALSE
Macro enabled file	TRUE	Check saved in valid file format	N/A
User-defined check	TRUE	[description of user-defined check]	
Master	TRUE	This needs to show TRUE to confirm the model has no error.	

This summary should be your first port of call for troubleshooting when you see a FALSE audit flag on any of the sheets in an appraisal – it's the best starting point for identifying the source of the problem.

	VERSION	v3.2.20
	AUDIT	FALSE

See page 4 for more information on audit checks and common causes of failures/errors.

There are manual overrides for the sheet-specific audit flags in **Column F**. These are password-protected and therefore only for use by superusers in possession of the password.

> **IMPORTANT**
>
> Audit flag overrides should only be used when the **root cause** of a false audit flag has been correctly identified, is well understood, and has been assessed by the superuser to have no genuine impact on the accuracy or reliability of report outputs and financial metrics related to the scheme being appraised.
>
> It is also important to be aware that, once an override is set for a particular sheet, if you make any further changes to the appraisal, that override will **continue to suppress and mask any additional errors** that may arise.
>
> It is therefore good practice to **reset any overrides before making input changes** elsewhere in the model, so that you can be sure your override is only being applied to known issues.

Tolerance to variances and rounding errors

On **rows 25 to 27** of the *Audit* sheet, there are superuser inputs for the tolerances allowed by formulas throughout Optimix which perform cross-checks for variances between totals whose values should match. These facilitate a configurable degree of sensitivity to such variances within the model, which is usually desirable when it is considered that small differences due to rounding are acceptable:

£ TOLERANCE	10	The allowance made by internal audit checks for rounding errors on monetary values.
% TOLERANCE	0.01	The allowance made by internal audit checks for rounding errors on percentage values.
# TOLERANCE	0.5	The allowance made by internal audit checks for rounding errors on integer count values.

13. Acronyms

BRMA	Broad Rental Market Area
CIL	Community Infrastructure Levy
D&B	Design and Build
DCF	Discounted Cash-flow
DPF	Disposal Proceeds Fund
GDV	Gross Development Value
GIA	Gross Internal Area
GLA	Greater London Authority
HCA	Homes and Communities Agency
HE	Homes England
IRR	Internal Rate of Return
LA	Local Authority
LHA	Local Housing Allowance
NB	New Build
NDSS	Nationally Described Space Standard
NIA	Net Internal Area
NPV	Net Present Value
OMV	Open Market Value
PC	Practical Completion
RCGF	Recycled Capital Grant Funding
RF	Refurbishment
RLV	Residual Land Value
RTB	Right to Buy
SF	Sinking Fund
SOS	Start on Site
S106	Section 106
V&BD	Voids & Bad Debts

14. Glossary

Cost to Value

The ratio of the total costs involved in developing and building homes to their open market value, expressed as a percentage. If this is less than 100%, this means that the total open market value exceeds the total scheme costs. If this is greater than 100%, this means that the scheme costs more to build than the completed homes would be worth on the open market, according to your OMV inputs.

Discounted Cashflow

Discounted cashflow (DCF) is a valuation method used to estimate the value of an investment based on its future cashflows. DCF analysis finds the present value of future cashflows using a discount rate. A present value estimate is then used to evaluate a potential investment. If the value calculated through DCF is higher than the current cost of the investment, the opportunity should be considered.

Disposal Proceeds Fund

Disposal Proceeds Fund (DPF) is where the grant from the sale of a publicly owned asset is recycled for future investment in affordable housing.

Discount Rate

This is the rate used to calculate the present value of an investment.

Internal Rate of Return

The internal rate of return (IRR) is a metric used in capital budgeting to estimate the profitability of potential investments. The internal rate of return is a discount rate that makes the net present value (NPV) of all cash flows in a particular project equal to zero.

Net Present Value

Net present value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows over a period of time. NPV is used in capital budgeting and investment planning to analyse the profitability of a projected investment or project.

Present Value

Present value (PV) is the current value of a future sum of money or stream of cashflows given a specified rate of return. Future cashflows are discounted at the discount rate, and the higher the discount rate, the lower the present value of the future cash flows. Determining the appropriate discount rate is the key to effective valuation of future cash flows, whether they are earnings or obligations. It is also can be defined as the capitalised value of the income stream.

Recycled Capital Grant Fund

Recycled Capital Grant Fund (RCGF) is where the grant from shared ownership assets is recycled for future investment in affordable housing.

Right to Buy Receipts

Right to Buy receipts are the income generated from the sale of council housing, which is to be ringfenced for future investment in affordable housing.

Section 106 Contributions

Contributions made by developers for investment in infrastructure or affordable housing.

15. Terms & Conditions

Copyright

The intellectual property rights for the Optimix toolkit belong to Beacon Partnership LLP.

The copyright for the toolkit is to remain exclusively with Beacon Partnership LLP and the toolkit is provided to the Customer for the exclusive use of the Customer only.

The Customer shall have no right (and shall not permit any third party) to copy, reverse engineer, decompile, disassemble the toolkit in whole or in part.

The toolkit may be used and accessed only by users who are employees, contractors and other third parties providing services to the Customer (including by local and remote access), provided that they access and use the toolkit only via the Customer's servers and computers.

The Customer shall not make the toolkit available for use to any third parties (other than above) or distribute or resell the toolkit, unless it is for the purpose of audit or inspection.

The Customer may distribute some or the entire toolkit to third parties in paper format, picture format, or pdf format.

Beacon Partnership LLP retains the right to sell the toolkit to other clients as it wishes. Any commercial assumptions used by the Customer will remain confidential and will not be divulged to third parties by Beacon Partnership LLP or included in any future toolkit sold.

This copyright applies to any subsequent adapted toolkit that is developed by the Customer using the toolkit as a base or starting point.

Audit

Beacon Partnership LLP will undertake all reasonable endeavours to ensure that the toolkit is issued without any mathematical errors, and a full internal audit of the toolkit prior to issue.

Updates

The toolkit will likely require an update on at least an annual basis. Such updates will be charged as outlined in the initial quotation.

Any errors or defects which are discovered in the toolkit will be corrected as soon as practicably possible at nil additional cost to the Customer. Such corrections will be undertaken in accordance with an assessment of priorities based on the severity and impact to the Customer and to the consistency and reliability of the toolkit.

Any customisation or adaptations to the toolkit that the Customer requires will be undertaken following acceptance by the Customer of a quotation, and will be subject to a charge as outlined in the quotation. This includes any amendments that may be required in response to unforeseen or unexpected governmental or regulatory policy changes etc.

16. About Beacon Partnership

Beacon Partnership are a housing, development and financial consultancy who work with clients to increase the provision of safe, high-quality homes through development and asset management. The company was established in 2017 (previously named EthiXL LLP) and provides products and services to clients across the United Kingdom.

Our products include our Optimix suite of development appraisal and financial viability toolkits.

Our services include:

- Development of Bespoke Viability Toolkits
- Financial Viability Modelling, Analysis and Review
- Independent Financial Viability Assessments
- Development, Regeneration, and Asset Management Support
- Interim Development and Asset Management Placements from Project Officer through to Strategic Director
- Strategies, Policies & Procedures
- Research, Bids, and Training
- HCA / GLA Audit Assessments and Services

The Beacon Partnership team consists of:

- Steve Beard, Partner
- James Edge, Partner
- Dave Markham, Partner
- Phil Purkiss, Partner
- Richard Lake, Commercial Director
- Vince Hardwick, Optimix Manager
- Rachel Askew, Development Consultant
- Charlie Rogers, Accounts Manager

www.beaconpartnership.com

17. Appendix A: Cut, copy and paste in Excel

It may be natural to assume that the main difference between cut-and-paste and copy-and-paste in Excel is that the latter seems to leave the content of the original cell(s) unchanged, whereas the former moves the content from the original cell(s) to the destination cell(s).

However, although that is one difference between the two operations, there is a more significant consequence of using Cut instead of Copy, which some users may be unaware of, and which can result in problems in a complex workbook like Optimix (more detail on this on the next page).

When using copy and paste, it is often advisable to use **Paste Special (Ctrl + Alt + V)**, so that you can selectively paste only values or formulas in isolation:
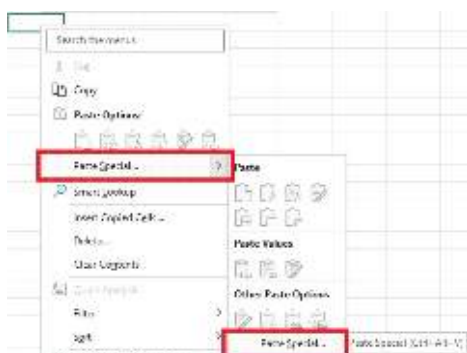
Via the right-click menu on a selection　　　**The Paste Special dialog, with values selected**
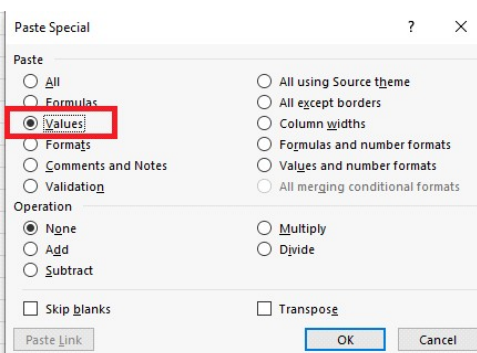
When Cut is used on a cell selection in a normal workbook, it is bordered by the same 'marching ants' animation of dashed lines around the cell as you would see after using copy:

This is perhaps one factor which misleads some Excel users into believing that there is not really that much difference between cut and copy, except for what is left behind after the contents are pasted.

However, cut and paste in Excel is actually the equivalent of drag and drop, and comes with the same consequences. If you move the mouse cursor to the border of a selected cell (or range of cells), it will change to the move pointer:

This allows you to click to drag the entire cell and its contents to another location, which overwrites the contents of the destination cell.

Importantly, however, it is not just the contents of the target cell which are updated by this operation. **References** to the source and destination cells are also updated throughout the workbook. For the source cell, this is usually desirable, as you would want any formulas or named ranges which refer to the source cell to have their references updated to point to its new location.

However, the destination cell may also be referred to in formulas and named ranges elsewhere in the workbook. As it is overwritten by a cut/copy or drag-and-drop move operation, it has no new location with which to update these references.

This key difference between cut and copy is often overlooked, but it can introduce referential errors and unreliable results in a complex workbook – this is the reason for Cut being disabled in Optimix. It is all too easy to inadvertently drag and drop a cell in error, since the change to the move pointer when clicking on a cell border is quite subtle and is easily missed.

To illustrate the potential issues that such a slip of the mouse can cause, imagine that you wanted to change the *Sales Profile Method* used for the Shared Ownership tenure, **cell J5** on the *Timing* sheet of Optimix. When you navigate to the *Timing* sheet, **cell K7** is already selected:

You move your mouse cursor across the screen from right to left, towards **cell J5** (immediately underneath *SHARED OWN* above) to select it, so that the dropdown arrow for selecting a profile method is displayed.

However, you inadvertently click too soon as you move your mouse across the screen, just as your cursor moves over the border of the currently selected **cell K7**.

Your mouse cursor changed to the move cursor ⧴ just before you clicked, and you released the mouse button as your cursor reached **cell J5**, which you intended to select:

This then has the effect of dragging and dropping **cell K7** onto **cell J5**. Both cells J5 and K7 are unprotected input cells, so this is allowed by Excel. Many other cells on the *Timing* sheet contain formulas which refer to cell J5; for example, **cell F250**:

Watch what happens to this formula after accidentally dragging and dropping cell K7 onto cell J5:

This **#REF!** error then cascades through the formulae on the sheet, through the audit formulae, and on to the master audit (see next section for details), putting the entire appraisal into an error state.

There is an advanced setting in Excel which will warn you in these circumstances that you are about to overwrite cells which already contain data. See File → Options → Advanced → Editing options:
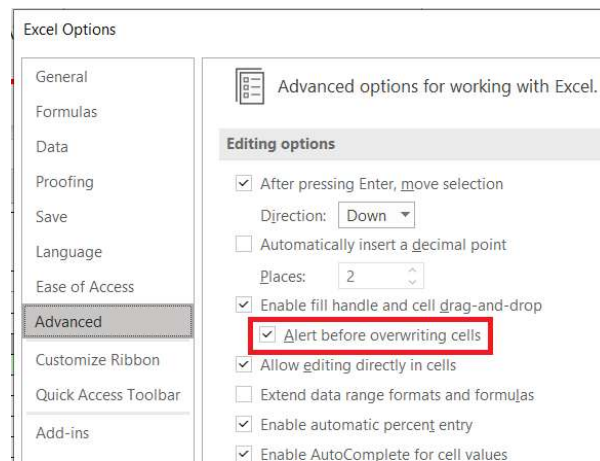
With this setting enabled, you would be presented with the following warning when dragging and dropping one cell on top of another which contains data:
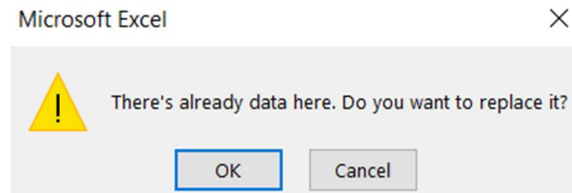
Optimix programmatically ensures that *Alert before overwriting cells* is enabled when it is first opened, and we **strongly recommend** that you leave this advanced setting checkbox ticked while using Optimix in order to warn you that you may be about to perform a drag-and-drop move that you did not intend to.

We usually leave drag-and-drop enabled in Optimix because disabling it would also disable the fill handle, which is widely and commonly used to quickly copy formulas down/across into adjacent rows/columns. However, it can be disabled for you if you have difficulty in avoiding its accidental use.

18. Appendix B: Macro security in Optimix

Since macro code in workbooks from unknown sources can be used to mount cyberattacks by malicious agents, Excel disables macros by default to encourage caution and reduce risk. It is no longer as simple to enable macros as just clicking *Enable Content*, as it was in older versions of Excel.

For more information from Microsoft about the risks of macro-based malware, please click the following link or paste the address into your browser's navigation bar:

https://support.microsoft.com/en-us/office/protect-yourself-from-macro-viruses-a3f3576a-bfef-4d25-84dc-70d18bde5903

We have produced a YouTube video to explain how to ensure macros are enabled in Optimix, which you can watch by visiting:

https://www.youtube.com/watch?v=qyzJc3tAJSE

The video will walk you through how to deal with the pinkish-red *Security Risk* macro block notification shown above, so that you can continue to use Optimix. The video is divided into chapters so that you can skip to specific sections – chapters 1 and 2 provide some background, whereas chapters 3 onwards cover enabling macros.

Some further points about macro security to reassure any concerns that may be raised by your IT service provider:

- The macro code in Optimix is password-protected and has been signed using Beacon Partnership's digital certificate (more information on this in the YouTube video linked above). This acts as a **cryptographically secure guarantee** that the code in an Optimix macro-enabled workbook has not been tampered with by any third parties whilst in transit or storage. You can therefore be confident that an Optimix file's macro code remains unchanged since we issued your template to you.

  - The YouTube video above details how to **add Beacon Partnership as a trusted publisher** of macro code on each computer that Optimix will be used on – this is by far the **most convenient and effective way** to ensure that Optimix opens with macros enabled every time, without additional intervention by the user being necessary for every appraisal file.

- **Macros must be enabled to use Optimix**. Although having macros disabled will not affect most calculations in the model, it does disable important functionality related to controlling its structure and visibility of certain elements, e.g. the ability to show/hide sheets automatically using checkboxes, auto-hiding of unused rows, and complex operations like the *Optimiser* function and importing scheme data.

- Macro code is used to implement these features, so it must therefore be allowed to run when an Optimix appraisal or template is open on your computer, in order for these features to operate correctly and provide you with the full user experience as designed. Appraisals can end up in an inconsistent and unusable state if the enabling of macros is omitted or delayed.

If your IT service providers would like more information on what the macros do – or indeed how they do it – before they are willing to relax any security restrictions related to macros, we would be more than happy to discuss this with them and provide any details necessary to allay their concerns.

19. Index