



CASE STUDY

MULTI-STAGED DEVELOPMENT FEASIBILITY

INTRODUCTION

There are several ways to model a feasibility for a Staged Development with Estate DF.

1. Within one DF Input sheet, utilising the 'Stage CF' report to view the cash flow for each stage and apportion global costs across each one.
2. Within one DF File, utilising the 'Option/Stages' feature, where up to 8 stages can be modeled separately, then consolidated in a report.
3. Using the Enterprise Database in conjunction with EstateMaster CC, where more than 8 stages can be consolidated.

OPTION 1: SIMPLE STAGED DEVELOPMENT WITHIN A SINGLE INPUT SHEET

The advantages of putting a Staged Development within a single DF Input sheet are:

- You can easily build dependents/precedents between stages using simple spreadsheet formulas, as all the inputs are on the same page.
- Financing is applied across the entire project, funding all stages together and allowing profits from one stage to flow to the next.
- The majority of the reports provide are project-wide cash flow and chart.

The disadvantages are:

- Performance indicators for each individual stage are limited to only what is provided on the 'Stage CF' report (NPV, IRR, Margin, Profit)
- Advanced analytical tools such as Sensitivity and Probability analysis, can only be use for the entire project, and not for individual stages.
- The Input sheet can become quite bulky for detailed feasibilities or large projects.

PROJECT INTRODUCTION

This model is an example of a hypothetical 3 stage subdivision of 179 lots over 14 hectares. These stages are scheduled to be constructed at 8 month intervals, and sold immediately after completion.

Stages will commence construction as follows:

- Stage 1: June 2017 (month 12)
- Stage 2: Feb 2018 (month 20)
- Stage 3: Oct 2018 (month 28)

INPUTS

The key with this option is to split out the inputs on a stage-by-stage basis, and utilize the 'Stage' inputs for each line item to indicate what Stage that cost or revenue should be allocated to, or if it is a project-wide cost, indicate 'G' (i.e. 'Global' cost). This is required when using the 'Stage CF' report to view each Stage's performance.

3000 PROFESSIONAL FEES		
Costs to be entered Inclusive of GST		
Code	Stage	Description
3001	G	pre construction consultants
3002	1	stage 1 consultants
3003	2	stage 2 consultants
3004	3	stage 3 consultants
3015	-	.
3099	G	Development Management

COSTS

- **Land Purchase** is separated into 4 payments. One initial payment; then three more, each one month before each respective stage's construction begins. These are divided on a percentage basis.
- **Professional Fees, Construction Costs** and **Statutory Fees** have been divided and timed to coincide with each stage.
- The **Development Management Fee** is set to 2% of Project Costs, and set to pro-rata costs with the level and time frame of the Project Costs ('C' for Span).

- All **Land Holding Costs** are set to diminish with Sales ('DS' for Span) and are to be escalated up to their start date ('E' for Escalation) by 2.5% per annum (Cost Escalation Section linked with Escalation column of each line item).

REVENUE

- In the **Other Selling Costs** section, 'Legals On Sales' have been set to attribute 0.5% to each Sales on its settlement date ('S' for Span) and \$3,000 for each lot is spent on 'Marketing' 7 months before construction starts for each stage.
- All the **Sales** in this project are escalating at 2.5% per year (Sales and Rental Revenue Escalation Section linked with Land Use Code in each line item).

FINANCE

- The project is financed by 30% **Equity**.
- Since Loans 1,2 and 3 are unused, the remainder is funded by **Loan 4** (or Senior Debt) at 7.5% interest per annum; nominal, compounded monthly.
- A \$90,000 establishment fee is required from the lender.

PROJECT HURDLE RATES

- A **Project Discount Rate** (Target IRR) of 20% has been nominated, along with a Target Development Margin of 25%.

REPORTING

STAGE CASH FLOW

The standard Cash Flow report will display the cash flow of the entire project as a whole, however the Stage CF report will break up the project into its individual stages. Using the 'Select' function, you can select to view all the Stages in the project on this report, or just a few.

The screenshot displays the EstateMaster software interface. The top menu bar includes options like New, Save As, Open, Print, Save, Close File, File, Edit, Tools, Office Links, Sheets, Zoom, Data, Windows, and a 'Select' button highlighted with a red box. Below the menu bar, the 'STAGE CASH FLOW' report is visible, showing a table with columns for stages (1, 2, 3) and months (Jun-16, Jul-16, Aug-16, Sep-16, Oct-16, Nov-16, Dec-16). The report includes sections for Stage Revenue, Selling Costs (exc Commissions), Gross Rental Income, Leasing Costs (exc Rent Free, OG's, Letting Fees & Fitout), Other Income, and Stage Costs. A 'Select Stages' dialog box is open, showing a list of stages (1, 2, 3) with checkboxes. The 'Select All' checkbox is checked, and the 'Ok' button is highlighted with a red box. A red arrow points from the 'Select' button in the top menu bar to the 'Select Stages' dialog box.

Towards the middle of the report, it shows that there are approximately \$7 million in global costs that need to be apportioned to each stage, mainly the deposit for the land purchase and the interest expense for the project.

Global Revenues & Costs		Cash Flow Line Items where Stage = G
Gross Sales Revenue (inc Capitalised Sales)		
Selling Costs (inc Commissions)		(1,800,085)
Gross Rental Income		
Leasing Costs (inc Rent Free, OG's, Letting Fees & Fitout)		
Other Income		
Interest Received		
Nil Tax Payments (Liabilities)		
TOTAL GLOBAL NET REVENUE		(1,800,085)
Land and Acquisition		3,285,490
Project Contingency		
Professional Fees (inc Development Management)		812,245
Construction Costs (inc Contingency)		
Statutory Fees		80,000
Miscellaneous Costs 1		
Miscellaneous Costs 2		
Miscellaneous Costs 3		
Land Holding Costs		
Financing Costs (exc Fees)		90,000
Application and Line Fees		
Interest Expense		1,069,444
Pre-Sale Commissions		
Nil Tax Refunds (Input Credits)		
Corporate Tax		
TOTAL NET COSTS		5,337,179
GLOBAL NET CASH FLOW		(6,937,264)

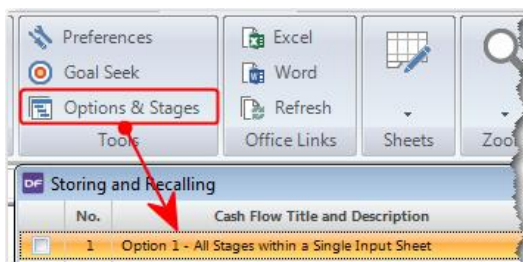
In the 'NCF Post-Allocation', this is where the global costs are allocated across each of the stages, so that the net performance of each project can be measured. The percentage allocation can be based on various logic, such as land value or gross realization of each stage, as a percentage of the total project. In this example, we have used the % of gross realization for each stage.

SALES		Total Current Sales Revenue	Total Escalated Sales Revenue
Stage	Description		
-	stage 1	16,855,874 / 58,184,897	-
1	block 1 apartments	= 28.970%	9,928,802
1	block 2 apartments		6,927,071
-	stage 2	20,763,368 / 58,184,897	-
2	block 3 townhouses	= 35.685%	4,630,679
2	block 4 townhouses		2,315,340
2	block 5		4,854,744
2	block 6		5,601,628
2	block 7		3,360,977
-	stage 3	20,565,655 / 58,184,897	-
3	block 8 houses	= 35.345%	11,568,181
3	block 9		2,570,707
3	block 10		6,426,767
-	to Tenants)		
-	Cash Flow)		
	TOTAL	54,480,000	58,184,897

NCF Post-Allocation							
Allocation	IRR	Margin	NPV	Net Profit			
28.97%	19.67%	21.93%	(36,341)	2,908,488	(951,806)	(12,312)	
35.69%	25.58%	33.96%	745,302	5,074,664	(1,172,427)	(15,166)	
35.35%	45.65%	95.42%	3,357,528	9,695,217	(1,161,256)	(15,022)	
100.00%	30.43%	46.07%	4,066,490	17,678,369	(3,285,490)	(42,500)	

Once the global costs have been allocated, you can then see the IRR, NPV Margin and Profit for each stage.

Note: For the purposes of this sample file, we have stored this Option as Option/Stage 1 in the file



OPTION 2: STORING STAGES IN SEPARATE INPUT SHEETS

The advantages of splitting up a Staged Development across separate Input sheets in a single DF file and then using the 'Options/Stages' function to consolidate them are:

- You can observe the more detailed performance indicators for each stage independently.
- You can run Sensitivity and Probability analysis on individual stages.
- The input sheet becomes less populated with data.
- Provides an option in situations where Stages need to be independently financed.

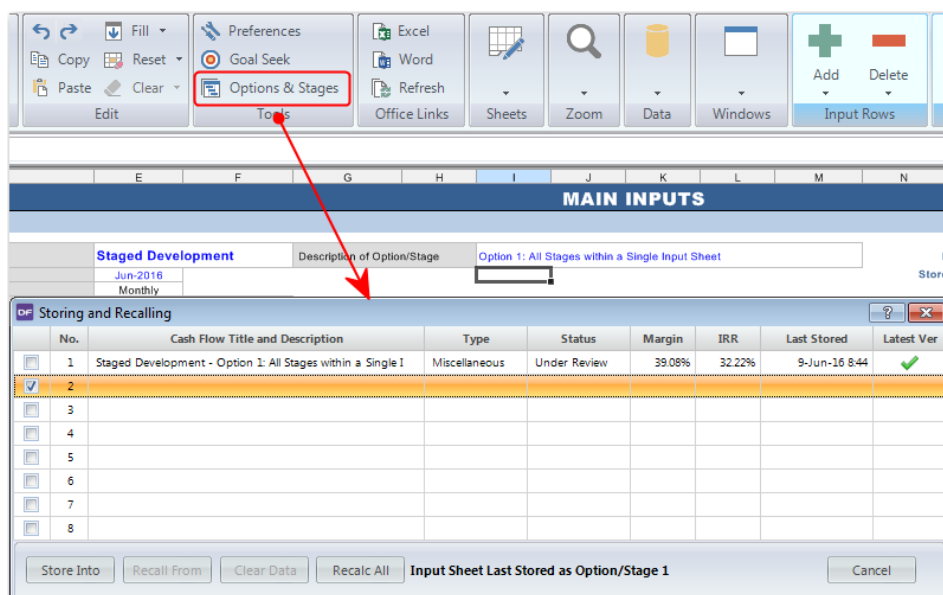
The disadvantages are:

- It is harder to build dependents/precedents between stages; this can only be achieved via a custom worksheet or link to an external Excel file, which holds key milestones that all the stages link to.
- Project-wide reporting is limited, as the main reports (Cash Flow, Charts, etc) are driven by the current Stage being managed in the inputs sheets.
- There are more steps required to toggle between Stages, using the Options/Stages function.
- It may be difficult to split certain costs across each stage or deal with global costs.
- You are limited to 8 Stages (or if you have more than 8, you need to group some together, as you can only store 8 sets of Inputs in one DF file).

INPUT SHEET

We will be using the same example as in Option 1. However, as each stage is treated independently, there are a few changes to how the data is entered.

Rather than all the stages and their respective costs/revenues be entered on the Input sheets, only the inputs for one stage at a time is entered, and then subsequently 'stored' using the 'Options/Stages' function.



This means that global costs either need to be manually apportioned across each stage, or discretionally applied in total to an individual stage. For the purpose of this sample, we have assumed that all global costs be accounted for in Stage 1 (which in turn will impact the KPI's for each stage)

COSTS

- **Land Purchase** will be divided per stage using the timings provided, with the 10% deposit (\$2mil) applied in Stage 1. The inclusion of the deposit in Stage 1 will skew the performance indicators per stage. (If you wish to align this, this deposit will have to be distributed across stages; how that is to be distributed is up to the modeler's discretion.)

Using the Option 1 input sheet as a guide, we have adjusted the total Land Purchase Price for Stage 1 to reflect on the deposit amount (\$2mil) and Stage 1's payment (\$6mil), therefore a total land purchase cost for that stage of \$8mil. The same timings have also been applied.

LAND PURCHASE & ACQUISITION COSTS						
Land Purchase Price		20,000,000				
Stage		% of Land Purchase Price % paid	Amount	AND/OR Lump Amount	Month Start	Month Span
-	Deposit in Trust Account ¹	0.00%	-	-	0	-
G	Payment 1	10.00%	2,000,000	-	0	1
1	Payment 2	30.00%	6,000,000	-	11	1
2	Payment 3	40.00%	8,000,000	-	19	1
-	Payment 4	0.00%	-	-	0	1
3	Settlement (Balance)	20.00%	-	4,000,000	27	1
G	Stamp Duty ¹	NSW	-	1,085,490	0	1

Figure 1 - Land Purchase inputs as per Option 1 - All Stages in one Input sheet

LAND PURCHASE & ACQUISITION COSTS						
Land Purchase Price		8,000,000				
Stage		% of Land Purchase Price % paid	Amount	AND/OR Lump Amount	Month Start	Month Span
-	Deposit in Trust Account ¹	0.00%	-	-	0	-
-	Payment 1	0.00%	-	2,000,000	0	1
-	Payment 2	0.00%	-	-	0	1
-	Payment 3	0.00%	-	-	0	1
-	Payment 4	0.00%	-	-	0	1
-	Settlement (Balance)	75.00%	6,000,000	-	11	1
-	Stamp Duty ¹	NSW	-	425,490	0	1

Figure 2 - Land Purchase inputs as per Option 2 - Individual Stages in separate Input sheets

- **Professional Fees, Construction Costs, Statutory Fees, Land Holding Costs and Selling Costs** have been divided into each respective stage.
 - Any costs not attributed to a specific stage will be applied to Stage 1 (same rules apply to distribution of Land Purchase Price.).
 - Costs that have been entered as a %, have been left as-is, as they will automatically adjust to be only a percentage of that's stages costs and/or revenues.

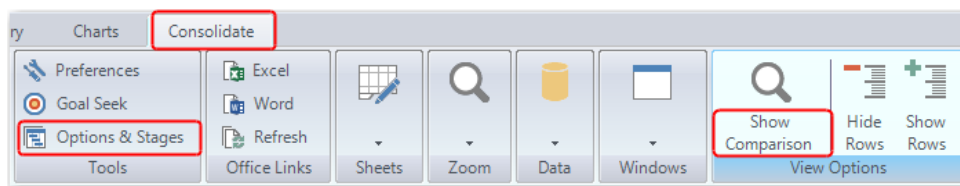
REVENUE

- All the **Sales Revenue** are divided by stage and escalated as in the previous example.

FINANCE

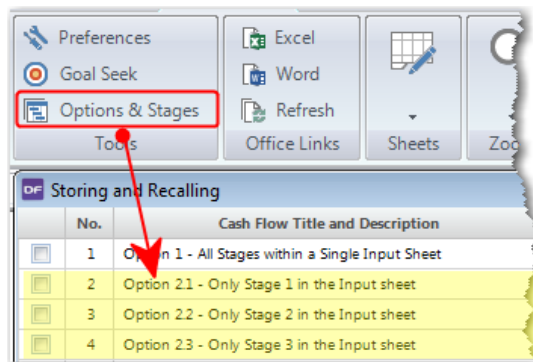
- Each of the stages has independent financing in this method, based on 30% Equity and the balance funded by debt at 7.5%.

USING THE OPTIONS/STAGES FUNCTION



Each stage is put into the Input sheet independently. Once the stage is completed, it is stored as a Stage by choosing the **Options/Stages** in Tools.

Note: For the purposes of this sample file, we have stored 3 separate Options (one for each Stage we have created using this method) as Option/Stage 2, 3 and 4 in the file



REPORTING

CONSOLIDATE REPORT

When all stages have been stored, if not already there, the consolidation sheet can display totals of all stages by pressing the **Show Consolidation** button.

Note: For the purposes of this sample file, and so we can view the separate stages in isolation, we temporarily disable Option/Stage 1 from the Consolidate report, and leave 2, 3 and 4 enabled. This ensures that the option that had all the stages in the single input sheet (Option 1), is ignored when consolidating the data in this report.

Disable	Enable	Enable	Enable
1	2	3	4
	Option 2.1	Option 2.2	Option 2.3
	Only Stage 1 in the Input sheet	Only Stage 2 in the Input sheet	Only Stage 3 in the Input sheet
	4 ha 73 lots	14 ha 58 lots	5 ha 48 lots

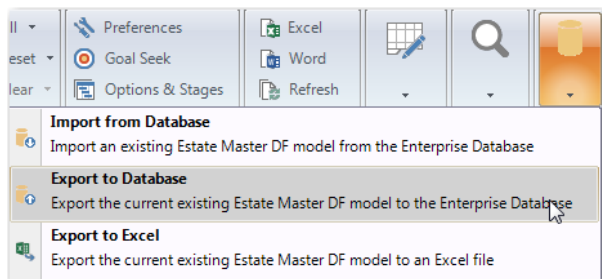
When viewing the Consolidate report, each Stage is reported in its own column, with a 'Total' column then show a consolidate view of the project.

Due to the independent nature of each stage, some costs such as Stamp Duty calculations, Land Holding Costs and Interest Expense may alter slightly compared to having all stages in one input sheet.

EstateMaster Development Feasibility		2	3	4	5	6	7	8	TOTAL
CONSOLIDATION OF STAGES		Option 2 1	Option 2 2	Option 2 3					
DF Case Study 1		Only Stage 1 in the Input sheet	Only Stage 2 in the Input sheet	Only Stage 3 in the Input sheet					
		4 ha 73 lots	14 ha 58 lots	5 ha 48 lots					
Estate Master Licensed to: Estate Master Administration		Miscellaneous Under Review	Miscellaneous Under Review	Miscellaneous Under Review					
Revenues									
Gross Sales Revenue		16,855,874	20,763,368	20,565,655					58,184,897
Less Selling Costs		(682,537)	(744,993)	(709,556)					(2,137,085)
Less Purchasers Costs		-	-	-					-
NET SALES REVENUE		16,173,337	20,018,376	19,856,100					56,047,813
Gross Rental Income		-	-	-					-
Less Outgoings & Vacancies		-	-	-					-
Less Letting Fees		-	-	-					-
Less Incentives (Rent Free and Fit Out Costs)		-	-	-					-
Less Other Leasing Costs		-	-	-					-
NET RENTAL INCOME		-	-	-					-
Interest Received		-	-	-					-
Other Income		-	-	-					-
TOTAL REVENUE		16,173,337	20,018,376	19,856,100					56,047,813
Costs									
Land Purchase Cost		8,000,000	8,000,000	4,000,000					20,000,000
Land Acquisition Costs		505,490	505,490	245,490					1,256,470
Construction (Inc. Construct. Contingency)		2,555,000	2,505,000	2,160,000					7,220,000
Professional Fees		725,185	200,736	185,953					1,111,874
Statutory Fees		3,000,000	2,320,000	1,920,000					7,240,000
Miscellaneous Costs 1		-	-	-					-
Miscellaneous Costs 2		-	-	-					-
Miscellaneous Costs 3		-	-	-					-
Project Contingency (Reserve)		-	-	-					-
Land Holding Costs		104,255	111,805	117,651					333,711
Pre-Sale Commissions		-	-	-					-
Finance Charges (Inc. Line Fees)		90,000	-	-					90,000
Interest Expense		691,610	575,757	318,463					1,585,829
Plus Corporate Tax		-	-	-					-
TOTAL COSTS		15,671,540	14,218,788	8,947,556					38,837,884
Performance Indicators		2	3	4	5	6	7	8	TOTAL
¹ Gross Development Profit		501,797	5,799,588	10,908,543					17,209,929
² Net Developer's Profit after Profit Share		501,797	5,799,588	10,908,543					17,209,929
³ Development Margin (Profit/Risk Margin)		3.07%	38.76%	112.96%					42.00%
Target Development Margin		25.00%	25.00%	25.00%					
⁴ Residual Land Value (Target Margin)		5,462,152	9,460,541	10,049,933					24,972,627
⁵ Breakeven Date for Cumulative Cash Flow		Sep-2018	Mar-2019	Sep-2019					Jul-2015
Discount Rate (Target IRR)		20.00%	20.00%	20.00%					
⁶ Net Present Value @ Start of Stage		(1,861,408)	1,904,976	4,805,910					
Date of Commencement		Jun-16	Jun-16	Jun-16					
Holding Discount Rate		10.00%							
⁷ NPV at Start of Consolidated Cash Flow		(1,861,408)	1,904,976	4,805,910					4,849,478
⁸ Benefit Cost Ratio		0.855	1.191	1.871					
⁹ Project Internal Rate of Return (IRR)		6.58%	36.62%	75.74%					32.48%
¹⁰ Residual Land Value (NPV) @ Start of Stage		6,020,435	10,394,758	10,816,920					27,232,113

OPTION 3: USING THE ENTERPRISE DATABASE AND ESTATEMASTER CC

The theory behind the previous option and this one is the same. All stages are set up independently, with each stage being stored as a separate set of inputs using the Options/Stages feature in DF. Once the file is completed, you can export your stages to the Enterprise Database.



Then you can use EstateMaster CC (Corporate Consolidation) to a multitude of different reports and dashboards.

The advantages and disadvantages of putting a Staged Development into the Enterprise Database and using EstateMaster CC are nearly the same as the previous option; however with the following **major benefits**:

- There is essentially no limit as to how many stages you can consolidate. For example, if you had a 12 stage project, you would use 2 separate DF files - one would have the first 8 stages exporting (since 8 is the limit per DF file) and the second would have the final 4 stages. These two DF files can then be exported to the Enterprise Database and consolidated and reported on in EstateMaster CC.
- There are many more reporting options available in EstateMaster CC.
- There is a Portfolio Financing feature in EstateMaster CC that allows you to ignore the independent financing for each Cash Flow, and apply financing facility over the consolidated Stages.

To learn more about using EstateMaster CC, please view this demonstration video:

<http://www.estatemaster.com/products/corporate-consolidation/demo-video>