CASE STUDY - NEW BUILD N IRELAND

AN ESTIMATION REPORT AND HOW IT IS USED IN CONSTRUCTION PROCESS

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DJ Estimations Case Study

Introduction

This case study explores the journey of a 2019 construction project, following the transformation from initial plans to final reality. It highlights the intricate process of estimation and building, uncovering the financial ups and downs along the way. Through detailed analysis, we demonstrate how our reports can play a crucial role in maintaining budget control and minimising costs throughout the project.

The Process

The journey begins with an architect consultation, where you, the client, collaborate with an architect to articulate your needs and desires. They will draft several plans tailored to your specifications. Once the plans are finalised, the next step is to consider the cost.

This is where we come in. You provide us with your finalised plans and specifications, and we commence the preparation of your estimation report. Utilising advanced measurement software and performing detailed calculations through Excel and other applications, we generate a comprehensive report. This report accounts for all materials, plant, and labour required for your project. It serves as a crucial tool for applying for a mortgage.

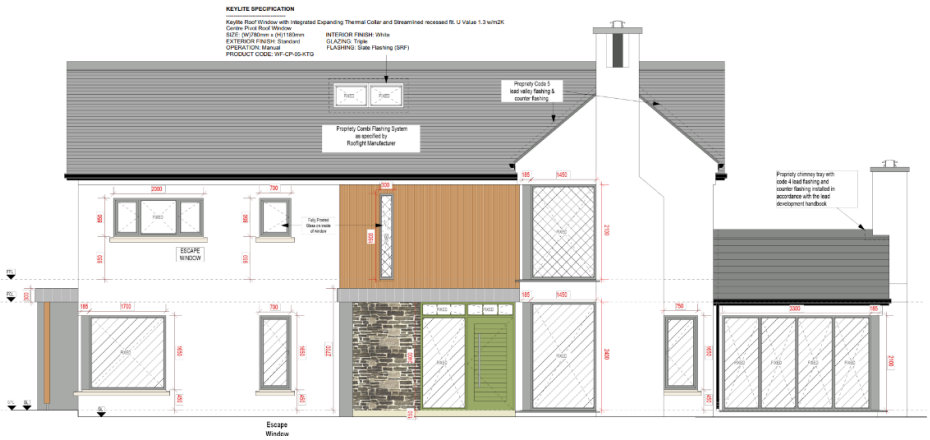
Upon securing the mortgage, the construction phase can begin. You may either engage in a tender process to find the right contractor or seek out tradesmen for a self-build project. The estimation report is crucial in both scenarios, as it provides precise material quantities for tender bids and offers a clear understanding of labour costs when evaluating contractor or tradesmen quotes.

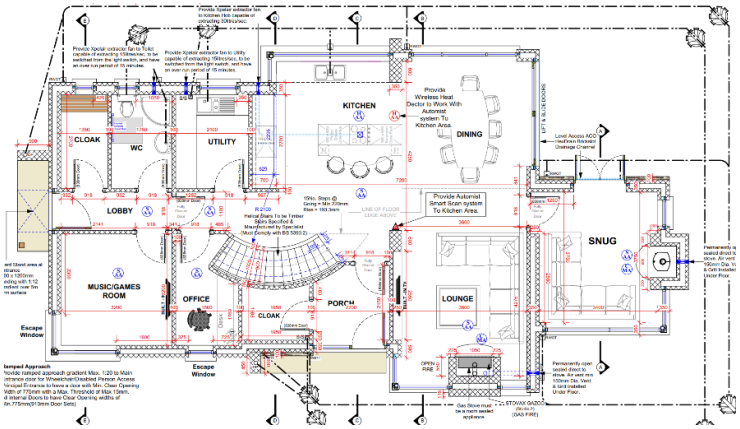
As construction progresses, the estimation report remains a vital resource for ordering materials and ensuring the project stays on budget. It allows you to compare and negotiate prices at each stage, helping to keep costs under control and optimise savings throughout the build.

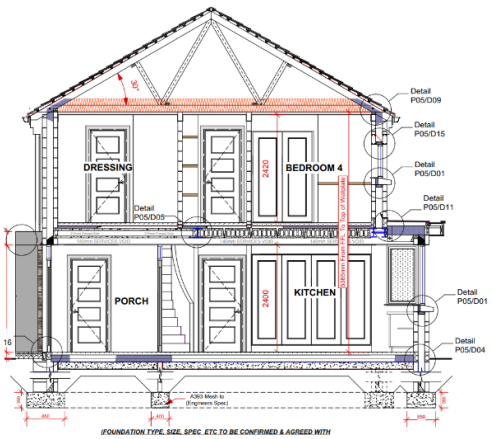
From Plans to Reality

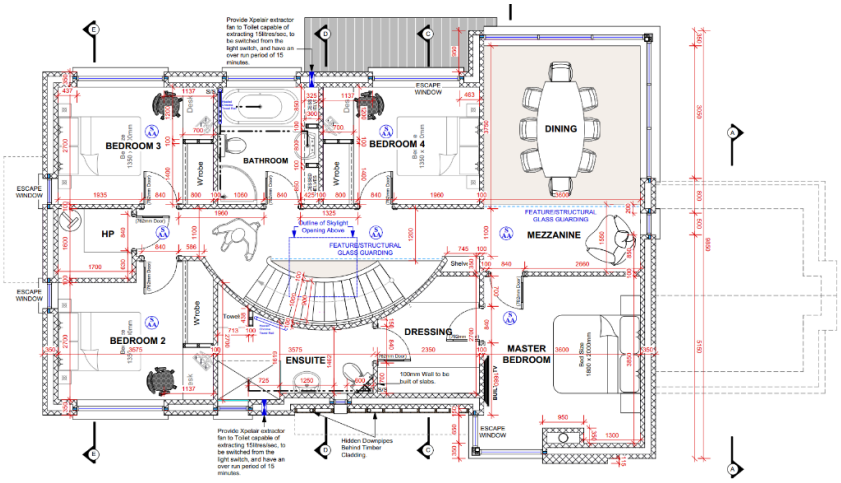
Below we can see how this client turned their plans to reality with the help of the architect, builder and estimator:

Plans:

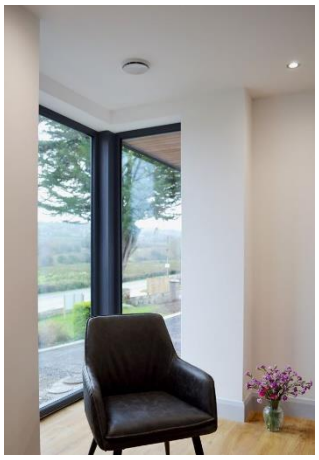


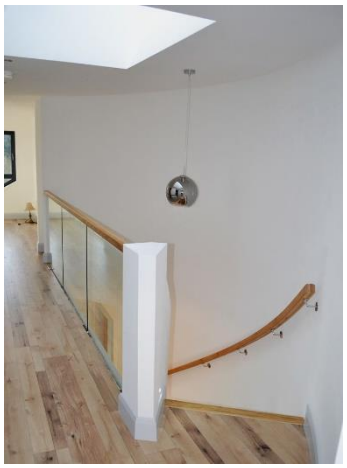






Reality:





The Build – Using the Report

Below is the final build phase breakdown that clients will receive at the end of the report which details the price for material, plant and labour at each phase of the build:

Build Phase Breakdown

Client 0

Build Phase Breakdown

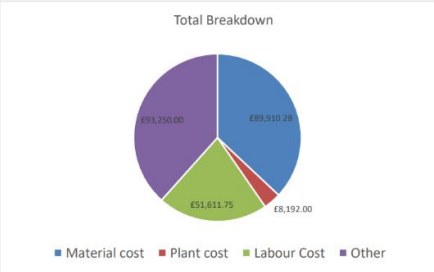
Build Phase	Material cost	Plant cost	Labour Cost	Other	Total Cost
Preliminaries	£10,170.00				£10,170.00
Site clearance/reduced dig/access	£240.00	£630.00	£283.75		£1,153.75
Foundations	£2,454.00	£888.00	£1,291.50		£4,633.50
Substructure	£1,516.40	£306.00	£1,575.00		£3,397.40
Overslab	£2,734.65	£656.00	£1,071.00		£4,461.65
Superstructure	£20,940.03	£650.00	£15,418.00		£37,008.03
Roof Structure & Finishes	£16,366.11	£550.00	£6,615.00		£23,531.11
PVC Soffit/Guttering	**PC Sum**			£1,400.00	£1,400.00
External Windows	**PC Sum**			£18,650.00	£18,650.00
1st Fix Joinery	£3,837.44	£150.00	£2,646.00		£6,633.44
Electrical	**PC Sum**			£6,500.00	£6,500.00
Fire system	**PC Sum**			£2,750.00	£2,750.00
Plastering	£2,269.55	£400.00	£10,867.50		£13,537.05
Finish floor	£6,463.50	£75.00	£850.50		£7,389.00
Plumbing	**PC Sum**			£5,000.00	£5,000.00
Heat Recovery/Heat Pump	**PC Sum**			£17,100.00	£17,100.00
Trim out	£7,160.10	£100.00	£1,890.00		£9,150.10
Streets/Paving/Footpath	£7,787.75	£791.00	£2,583.00		£11,161.75
Sewers & Services	£2,896.95	£1,942.00	£2,551.50		£7,390.45
Boundary Walls & Fencing	£5,073.80	£1,054.00	£3,969.00		£10,096.80
Stove/flu	**PC Sum**			£3,000.00	£3,000.00
Stairs	**PC Sum**			£8,500.00	£8,500.00
Sanitary Ware	**PC Sum**			£6,000.00	£6,000.00
Kitchen units	**PC Sum**			£16,000.00	£16,000.00
tiling Supply only	**PC Sum**			£6,350.00	£6,350.00
2 garage roller doors	**PC Sum**			£1,500.00	£1,500.00
Snagging				**£500.00**	£500.00

Total	£89,910.28	£8,192.00	£51,611.75	£93,250.00	£242,964.03

(Recommended for Clients)

Contingency	£10,000.00
Total	£252,964.03

*PC sums noted in
* Preliminaries relate to general set up of the site, scaffolding, skip hire and security fencing if required
If you are getting a contractor to do the works for you, please allow for their profit, overheads and preliminaries.



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The client in this case had intended the house to be a self-build project but decided against this due to work commitments, family life and the fact that her final price as somewhat below what she anticipated. She opted to go for a local contractor to undertake the construction, this comes with added costs such as builders' profits, PC Sum mark ups, overheads, contingencies and their own preliminaries. This added cost can be anywhere between 15-25% on top of the self-build estimate.

The quantities of materials and plans were distributed to several contractors in the area for tender before one was appointed.

The winning tender price was £285,406 with their PC Sums totaling £89450.
If we remove the PC Sums from each of these prices, we can find the mark up percentage.

Self-Build Price minus PC Sums	Winning Tender Price minus PC Sums	Percentage Increase/Mark Up	
£160,214.03	£195,956.00	$\frac{(£195956 - £160214)}{£160214} \times 100$	22.31%

From this calculation, we can see that the added cost is within the 15-25% range in terms of a markup.

Although not entirely accurate, these figures can be used to roughly track if the project is remaining on budget throughout the build, and where to scale down in future phases if needs be.

By adding the 'Mark Up' percentage at each to the self-build estimation, you can find the new target price to compare to the prices charged by the builder. An example of how this may be done is shown below.
Example:

Superstructure Cost Estimate (Self Build)	Superstructure Cost Estimate with Mark Up (22.31%)	Builder Charge	Verdict
£37,008.03	£45,264.11	£41,450.00	Under Budget

Now that we understand the process, we can follow how this client used the report to track the budget at a selection of different stages from the build:

Foundations

Predicted Cost	Predicted Cost with Mark Up	Actual Cost	Verdict
£4,633.50	£5,667.18	£13,450.00	Over Budget

As seen in the table above, the actual cost of the foundations came in much higher than anticipated, the reason for this being the poor ground conditions encountered in the digging process. This was very unexpected as there had been an existing building on the site with standard strip foundations.

Due to these ground conditions, building control required the contractors to dig 2.5 metres to reach load bearing strata, resulting in the need for trench fill and steel reinforcement to comply with regulations and provide a safe build. This also had complications in the upcoming substructure and overslab phases. The £10,000 contingency allowed at the end of the report leaves some leeway for complications such as this and went a long way in keeping the project on budget.

Substructure

Predicted Cost	Predicted Cost with Mark Up	Actual Cost	Verdict
£3,397.40	£4,661.69	£5,500.00	Over Budget

Again, this section was over budget due to the increased depth of footings to bring the building up to ground level from the level dug to get the foundations to load bearing strata.

Overslab

Predicted Cost	Predicted Cost with Mark Up	Actual Cost	Verdict
£4,461.65	£5,456.99	£7,200.00	Over Budget

The reason for the overslab being over the budget was again down to the depth dug by the contractor to get to load bearing strata, as the subfloor now had to be a suspended slab with steel reinforcement instead of a traditional concrete subfloor used in ideal conditions. A wetcast concrete slab was opted for and the steel reinforcement and shuttering before the pour can be seen below:

Steel Reinforcement and Shuttering to Wet-Cast Concrete Slab

Roof Structure and Finishes

Predicted Cost	Predicted Cost with Mark Up	Actual Cost	Verdict
£23,531.11	£28,780.63	£28,250.00	Under Budget

The roof structure came in reasonably under budget, with savings made in the efficient usage of timber and slate with little wastage.
The roof finishes phase is an effective way of achieving savings to claw back a budget. popular saving methods for roof finishes are as follows:

- Zinc standing seam to aluminum standing seam.
- Standing seam to slate or concrete tiles.
- Natural slate to man-made slate or concrete tiles.

In this case, the client decided to continue with the specified finish of man-made slate and came in just under budget.

Roof Before Slate Finishes

This method can be continued throughout the build to decide where to make savings if it looks like going over budget.
In this case the client continued to build the plans to specification and came in just over budget, this was thanks to the £10,000 contingency which was swallowed up mostly by the foundations.
This is not ideal to be using this up at the first stage of the build but again highlights the importance of it when it comes to groundworks and its uncertainty.

Estimation Report

This case study shows us the critical role of an estimation report in guiding and controlling the financial aspects of a project. From the initial stages of planning and securing funding to the ongoing monitoring of costs throughout the build, the estimation report serves as a comprehensive tool for maintaining budgetary discipline.
In this real-world example, despite the unexpected challenges such as the poor ground conditions that resulted in additional costs during the foundation and substructure phases, the report allowed the client to stay informed about budget deviations. By comparing predicted costs to actual expenses, the client was able to track where savings could be made and where extra expenses occurred. The inclusion of the contingency fund proved essential in managing these unexpected increases, particularly in the groundworks, which often present the highest risks due to the uncertainties involved.
Through regular use of the estimation report, the client could make informed decisions, such as choosing cost-effective materials without compromising quality. While the project went slightly over budget, the flexibility provided by the report and the contingency fund helped the client achieve a successful build, enabling clients to maintain better control and understanding over their construction projects, minimising risk and ensuring that they remain as close to their financial targets as possible.