Service Capabilities

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United Kingdom, Ireland, Middle East

Rail, Metro, Aviation

Cost Management Services

Introduction to Network Infrastructure Consultants Ltd

Our approach to Cost Management is taken very seriously. To be able to offer the most accurate level of output commensurate to the information received to formulate or validate cost and budget is very important.

It is in our opinion better to embed estimating within a client, contractor or designer's team as this provides a synergy of service by expediting information sharing whilst enhancing working relationships & confidence in the service. This crucially provides live updates through the technical query process, buildability & value engineering by providing live cost tracking and modelling on request.

Our vision is to create long term collaborative partnerships with clients and stakeholders, thus providing ever increasing confidence in development of service and reliability, in turn providing the best fluidity of service for the client throughout the life cycle of a construction programme. The intention is to create a truly cohesive and extensive professional service cascading from conception to completion of a major programme, at every stage.

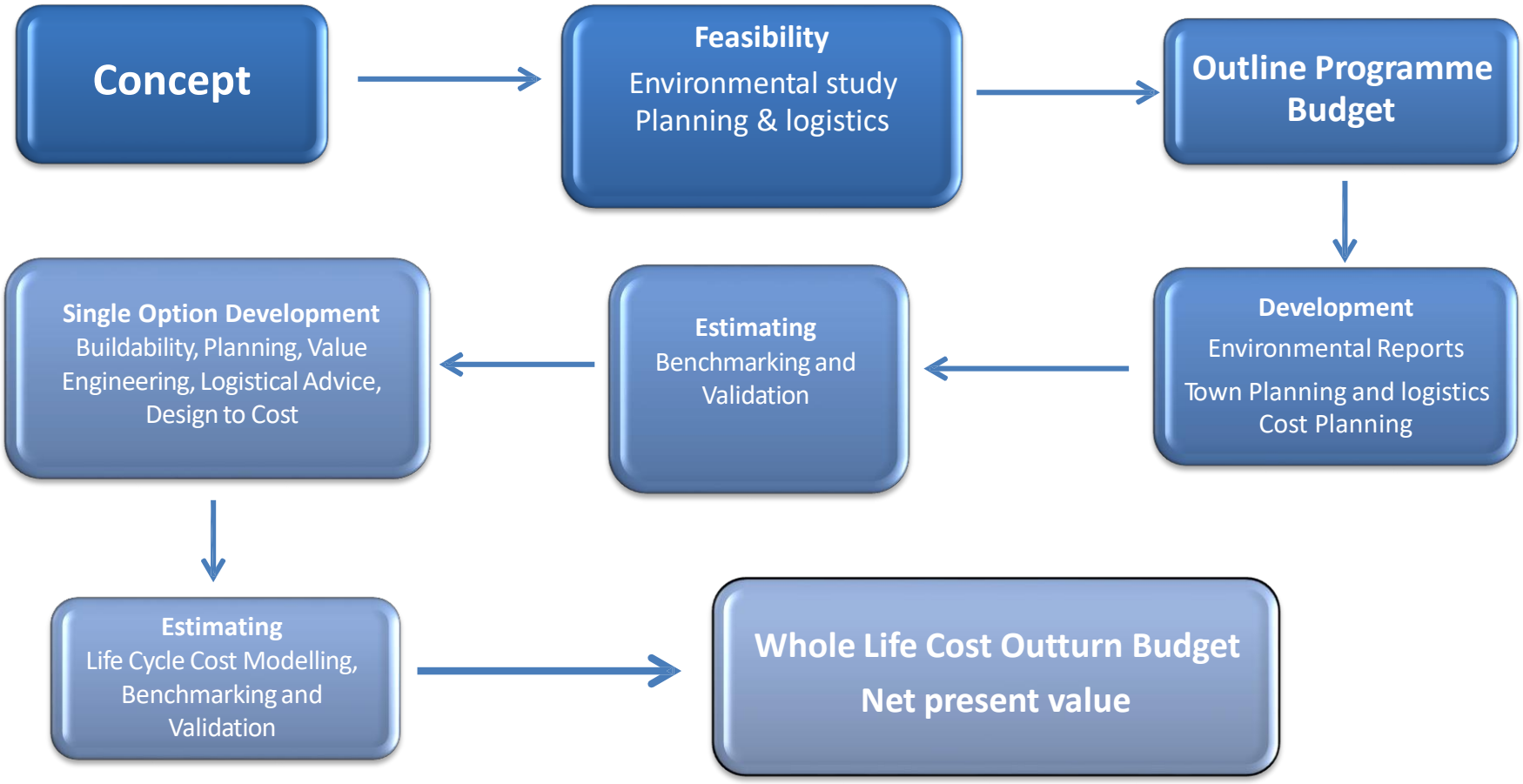
Cost planning and estimating through feasibility and development is crucial to establishing a budget and even more crucial in ensuring a design does not progress in excess of that budget. Tracking and modelling costs through the design stages provides added value by offering live updates and forecasts on budget in relation to design evolution.

Design to Budget Management is an effective way of maintaining synergy between designers and estimating the team, and thus provides up to date CAPEX costs through the evolution of a design. The normal process for Schofield Lothian is to provide staff at either the client or design team's offices. This creates good working relationships, and the ability to give live cost updates on request. This also creates more usable time to meet key milestones. The provision of cost information based on evolving design is expedited by having all the team in one place.

Whole Life Costing would be undertaken to provide the OPEX budget over the planned life of the completed project and considers planned (cyclical) maintenance, unplanned (reactive) maintenance and life expiration/replacement of components.

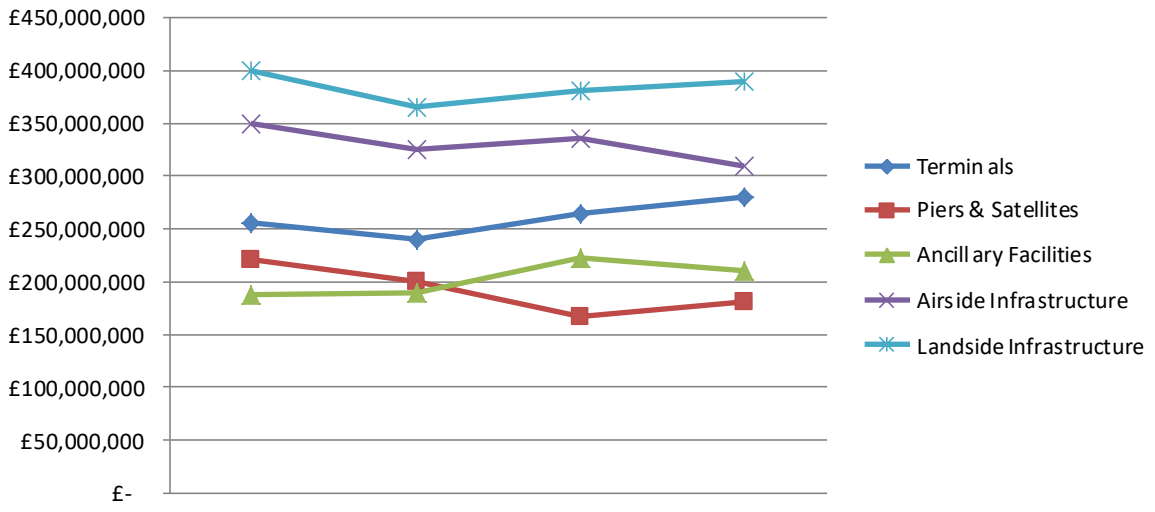
Service Structure

Estimating and cost planning should follow a standard reliable route to delivery which provides a consistent successful delivery concept throughout all stages.



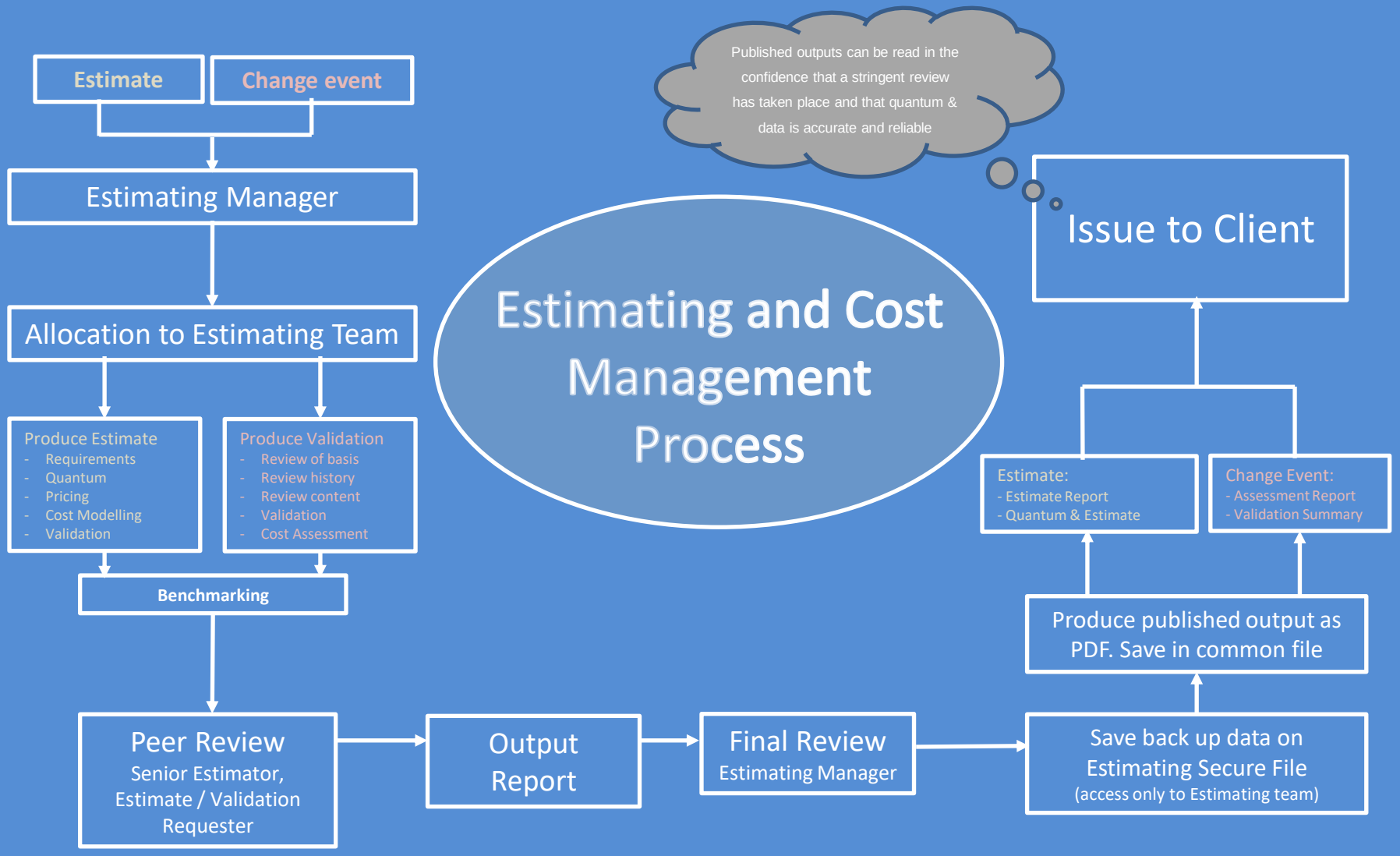
Cost Planning and Estimating

Whether through concept or reference design, or throughout the programme of a live project, it is important that the consequences of design or logistical change decisions are considered in the context of value.
It is therefore paramount to undertake a pro active approach in negotiating value for design changes and considerations on behalf of the client, to prove that a rigorous cost control process has occurred and been considered before a either design control point, or acceptance of a variation. This can be assisted by tracking changes in cost throughout the whole life cycle, and provide this information by way of a storyboard report and dashboards at progress meetings.



Cost Planning & Estimating has two principal purposes: to budget for both capital expenditure (CAPEX) of a construction programme and the operational expenditure (OPEX) required to maintain the completed project for its design life. The estimating stages offer increasing levels of accuracy commensurate to the design stage. As the design progresses and the options minimised, so the data available offers the ability to produce more detailed cost estimates. Critical to providing an accurate estimate is to consider both what is required for a scheme to progress (consents and disruptive planning), and the cost of progressing it (compensation and stakeholder related costs). It is important to maintain a presence through planning, value engineering and risk modelling to offer expert advice on cost drivers and influences to ensure a budget is maintained or change to it validated. Through all stages it's the intention to provide cost modelling, to identify where costs lie in a scheme and to explain them, validated by benchmark where possible against similar activities on commensurate projects.

Providing valuable technical advice for benchmarking and data analysis has brought with it contact to a variety of major programmes, which at varying stages of implementation, have provided independent validation, guidance, advice and recommendations.

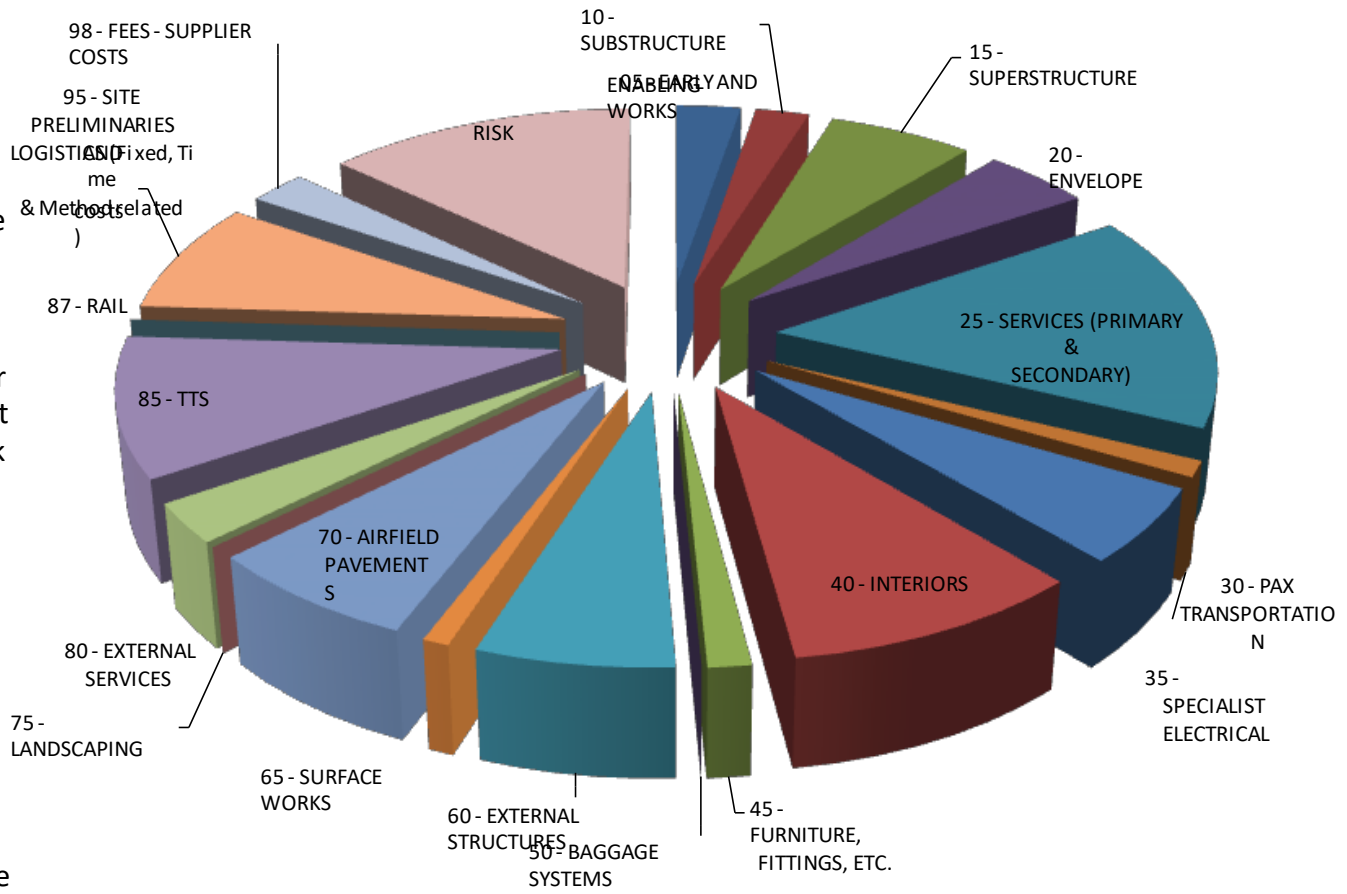

Estimate
Change event
Estimating Manager
Allocation to Estimating Team
Produce Estimate
- Requirements
- Quantum
- Pricing
- Cost Modelling
- Validation
Produce Validation
- Review of basis
- Review history
- Review content
- Validation
- Cost Assessment
Benchmarking
Peer Review
Senior Estimator, Estimate / Validation Requester
Output Report
Final Review
Estimating Manager
Save back up data on Estimating Secure File
(access only to Estimating team)
Produce published output as PDF. Save in common file
Estimate:
- Estimate Report
- Quantum & Estimate
Change Event:
- Assessment Report
- Validation Summary
Issue to Client
Published outputs can be read in the confidence that a stringent review has taken place and that quantum & data is accurate and reliable
Estimating and Cost Management Process

Cost Modelling, Benchmarking & Validation

By **modelling** an estimate or cost plan it is possible to easily identify where the key costs are and thus interrogate what the principal drivers are.

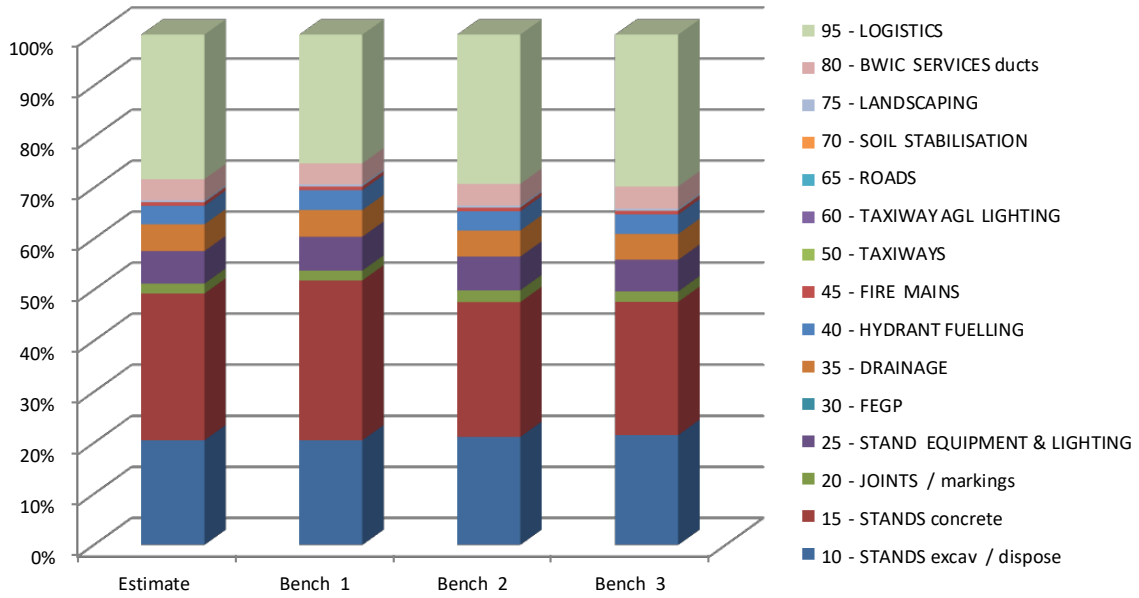
It quite often identifies that the indirect costs of undertaking a scheme can outweigh the direct construction costs. Especially for projects undertaken in a live environment requiring extensive stakeholder consideration)

Modelled costs provide key areas for interrogation to either identify an error, or validate the cost. Upon completion of cost modelling we are then able to benchmark the key areas of cost. Benchmarking is paramount to giving confidence in a budget, whether by using client's existing data or independent data, the sole purpose is to show that a cost falls within a range of what is considered sufficient for the given stage of the design. It is usual to produce a report which provides a commentary on the estimating process employed, the methods of validation employed and key areas to consider at the next stage.



Cost Modelling, Benchmarking & Validation

Benchmarking offers a validation of costs against recent schemes and similar application. This provides confidence that a particular cost falls within a range to be considered acceptable for the given stage of the design. We will always look at particular "Cost Drivers" when using benchmarking data to ensure that we are using the most relevant data in correlation the project being benchmarked. Cost drivers are the cause of the biggest differences in costs and can be driven by programme, or by construction methodology or by risk.
When showing benchmark data it is better to remove the extremities of comparative costs to provide a 'Median' rather than a 'Mean' average, which reduces the range and provides greater confidence in the data being benchmarked.



It is all too frequent that numerous schemes are identified to create a programme of works (or workbank) and given an allotted funding. A development team will subsequently inherit the programme of works and associated funding without always seeing the process behind creating its budget. It would be usual to carry out an initial high level budget validation to report back on whether there are any early warnings relating to potential funding shortfalls, undertaken by benchmarking construction related costs and modelling indirect costs against other similar schemes.

Cost Modelling, Benchmarking & Validation

Validation of third party

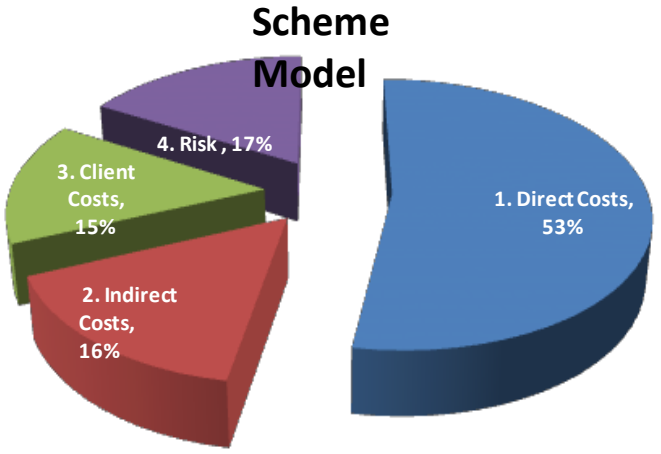
Ensuring the validity of an inherited budget is paramount in ensuring the correct budget is set with confidence. The allowance for contingency will correlate to the accuracy of a cost plan or estimate which in turn should correlate top the design stage.

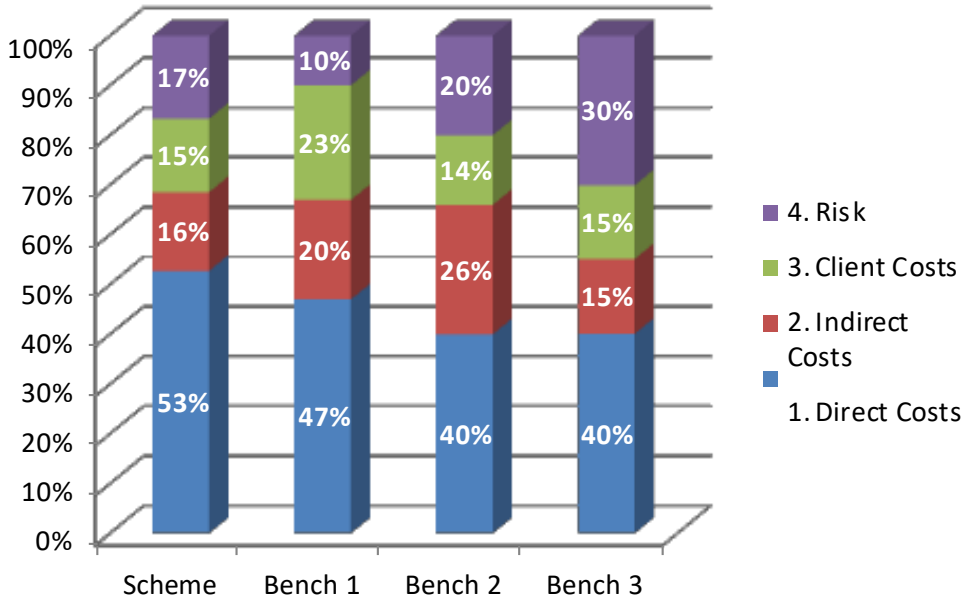
This is a very process driven audit based on existing client data. By utilising all the above capabilities it is possible to provide an evaluation and commentary on an existing estimate, cost plan or budget. It is usual to undertake an independent exercise of cost and compare this against the existing data. The results would be modelled and benchmarked to provide validity and confidence, before being presented to the client with an accompanying report. This is well received by a client as it ultimately provides either confidence in their existing budget or an early warning that further evaluation of the basis of costs is required to meet or adjust the budget.

It is a regular occurrence to undertake impartial validation exercises for clients to ensure that existing cost plans and estimates fall within an acceptable level of accuracy commensurate to the design information available for a given design stage; master-planning, feasibility, option selection, single option development.

Validation of work undertaken by others is a very important process whether setting or maintain a budget. This gives a client a greater confidence especially in the public sector when authority needs to be sought for project funding.

This is the principal applied to a **Project controls** environment when validating change.



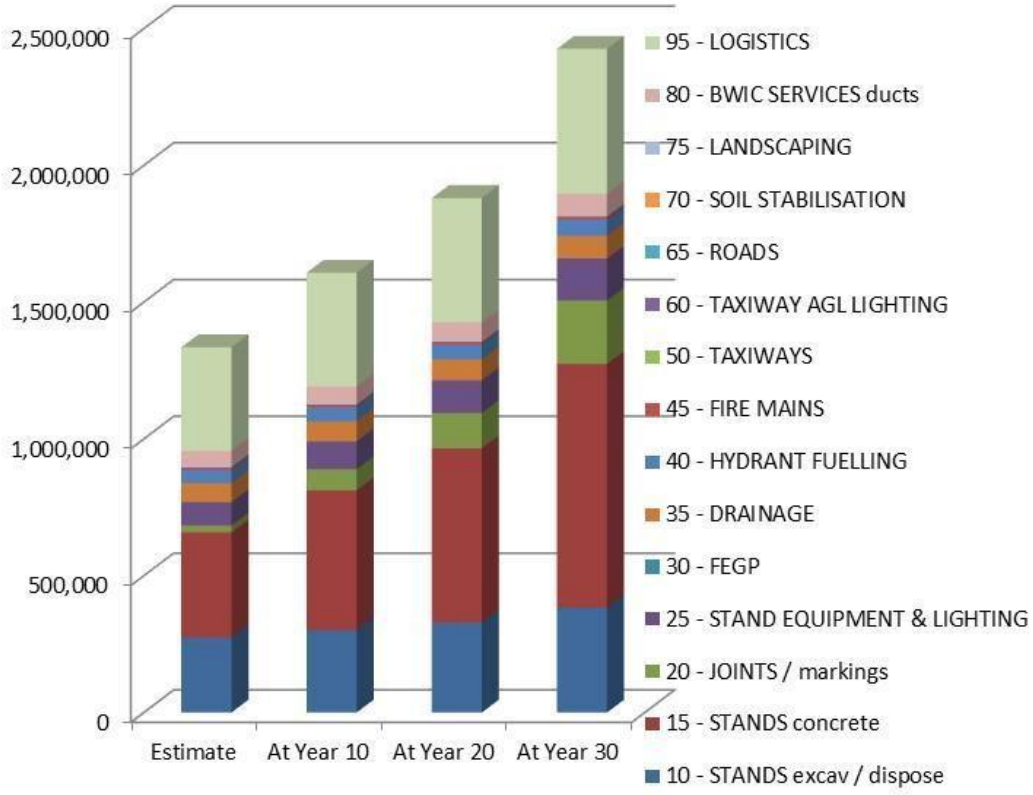


Whole Life Costing

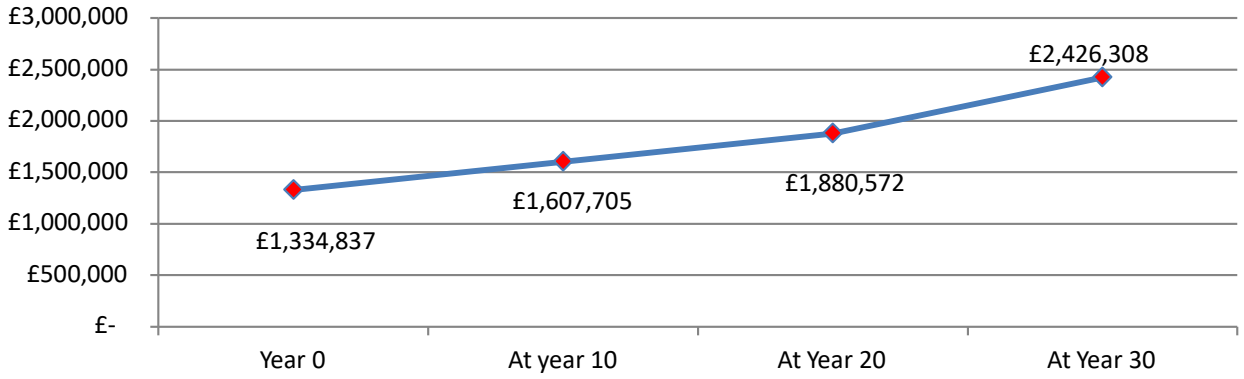
Whole life costing
Whole life and maintenance impact costing advice measures the economic impact of a built asset over its life and helps deliver value for money and reduces costs associated with day-to-day operation and maintenance (planned and reactive).
Using robust data enables the best long-term value for an end user or asset owner throughout the life of an asset.

The scope of whole life costing includes:

- Construction Budget
- Whole life cost modelling and optimisation
- Planned maintenance
- Reactive maintenance
- Life expired component replacement
- Interval surveys
- Component option appraisals
- Maintenance impact advice.
- Net present value and sinking fund calculations
- Benchmarking of whole life costs
- Durability advice



Code C Aircraft Stand Whole Life Cost



Influences and Considerations

Location
The geography of a scheme can have many influences on budget. Inner city schemes have high premiums such as night time working, delivery restrictions, availability of land for compounds, high value rent for office space etc. Location factors can also influence the cost of materials & delivery, and availability of specialist and non specialist contractors, plant and staff. Remotely located schemes may require special land acquisitions and access agreements, and can be less attractive to normal or usual bidders and suppliers.

Environment
When planning a scheme is it very important to consider both the environment of the site and the environment affected by the site. Sites of Specific Scientific Interest (SSSI), Heritage sites and Conservation areas require more detailed and specialist planning agreements. Cost and programme related issues associated with these can be lengthy planning applications and agreements, bespoke specialist representative fees and monitoring the worksite during the programme by a third party to ensure compliance with planning agreements and legislation.
Ecologically of the site may prove an obstacle with resident wildlife, and introduce planning challenges associated with protected species.
Geographical location may lend itself to sustainability consideration, and planning agreements may require sustainability challenges where local authority land is affected.

Access
Access has two principle directions. A railway access strategy and local access strategy. Railway access strategy would usually be considered principally by Network Rail and would outline available possessions to work on or close to the line. This would be used to highlight affected stakeholders and their subsequent compensations, and risks.
Site access requirements can also affect cost when considered with the sites geography as mentioned above. A railway scheme may stretch many miles and require numerous temporary access points which in turn may require temporary access roads. A highway rail level crossing affected would be replaced by an underbridge.

Stakeholders
Every scheme has stakeholders, direct and indirect. Train and Freight operators are the key stakeholders as are Airlines, retail outlets, staff office locations and most importantly the public. Other affected stakeholders are domestic and commercial land and property owners. Compensation may range from inconvenience payments to loss of revenue and even compulsory purchases. Most schemes affect numerous stakeholders and these can equate to very high indirect costs to a scheme.

Influences and Considerations Cont.

Buildability
Throughout the design process it's important to be able to offer advice on how buildability assumptions affect and drive costs. By using experience on previous schemes to provide examples of how alternative considerations can affect programme and risk, whilst maintaining knowledge on Environment, Ecology and Consents can prove extremely valuable throughout this phase.
When planning a scheme, a feasibility study may look at many iterations to meet the end users requirements. Cost Planning against those options can score them in order to offer advice on preferred direction. A data base of cost over many types of projects enables the provision of forecasts based on similar schemes (size, type, value, geography) which allows the identification of risks associated with a type of scheme and its location. By cost modelling and benchmarking it's possible to offer confidence to a range of budget and identify key areas for further investigation and consideration in terms of value and risk.

Programme – A programme doesn't just start at the beginning of a construction phase, it commences at the concept stage usually with an intended completion date from the client. It will have key milestones throughout the design in order to meet a construction start date. The construction programme can be affected by delays throughout pre construction phases such as frustrated access to carry out surveys and the effect this has on the design programme. The intention is to aim to mitigate this by embedding estimators within the design team to assist in making swift decisions based on specialist suppliers, buildability, planning or value engineering. The effect of having live cost updates on request can expedite a DRN or TQ process throughout design stages.

Risk – Risk is generally measured by a percentage value of the cost plan or estimate through early design stages. However key risks must be noted throughout each stage in order to try and mitigate them at the proceeding stages. There's a need to provide strategic advice on key risks through the early stages and to maintain a data base of cost over many types of projects which enables the provision of advice based on knowledge from similar schemes, which allows us to identify types of risks associated with a type of scheme and its location. Typical programme risks relate to buildability, methodology and planning, whilst design budget risks include site location, surface access and scope creep. As the design evolves so the risks become more specific and it's essential to work with the Risk and Project teams to continually provide advice to minimise these risks and highlight value engineering opportunities.

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