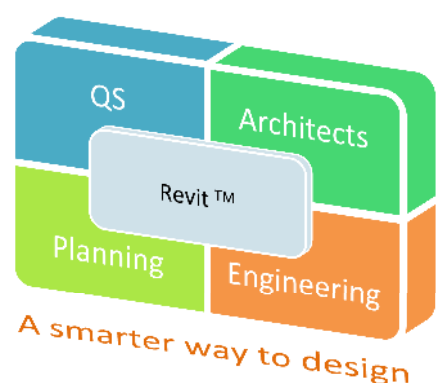


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Twenty years ago consultants abandoned their drawing boards in favour of using Computer-Aided Design (CAD). The then technology reproduced line drawings within a computer. The paper drawings went but design principles stayed the same. Even today CAD drawings are overlaid on other consultants' layouts to check design compliance. However wouldn't it be nice if all consultants drew simultaneously on the same paper? Wouldn't it be even better from the start if everything was drawn in three-dimensions, and the paper kept track of the building costs, etc. Today we have Building

Information Management (BIM) software that provides this ability; it is not a new technology but one that has come of age. The government recognises this and from 2016 all public projects will have to be procured using BIM platforms.

The benefits to the client for using this technology are significant. As a general rule of thumb at the start of a project you want to know:

- what it will look like,
- how much will it cost,
- if you can get planning,
- how fast the design and construction process will be.

If we take a traditional approach the answers to the above questions would be "it will take some time." Designs will have to be produced, cost estimates calculated and images made for the planning authorities. Thereafter production drawings, details bills of quantities, coordination of consultant works will all need to be undertaken before going to tender.

Using Revit™ we can produce very quickly designs at the pre-application stage. Because the design elements used by the architect are pre-priced by the QS it is easier to design the building around a budget. Adding or altering an element will automatically affect the costs.

Seeing is believing: showing how the building looks and its interactions with its surroundings allows better engagement with the planners which in turn can increase the chances of approval. As if the project was drawn on stretchy paper it is possible to stretch and pull the building shape. Naturally the costs will automatically update.

The orientation of the building may have significant impact upon its running costs. Not only Revit™ automatically updates the budget but it also keeps track of the buildings orientation and its impact upon energy usage. In the light of energy usage data it is significantly harder for planners to dictate the shape and location of your building. The program also allows for a seamless integration of the building structure into the design.

Revit™ simplifies coordination between design disciplines. Firstly Revit™ is a database driven program; there are inbuilt logic gates within it that recognise that certain elements cannot reside in

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the same space. If so “warning lights” automatically come on. Secondly everybody works from the same 3-D paper (model) thus most clashes become self-evident. This ability to work on the same platform significantly increases productivity.

Revit™ is very quick at producing the broad brush design strokes. Therefore it allows multiple approaches to the production information and tender stages. When the model is combined with the specification and costing information it lends its self to design and build contracts. For clients that wish for fully designed building the model can be developed further. Generally speaking the production information stage is considerably quicker in Revit™. For clients where time is of the essence this can have significant financial advantages.

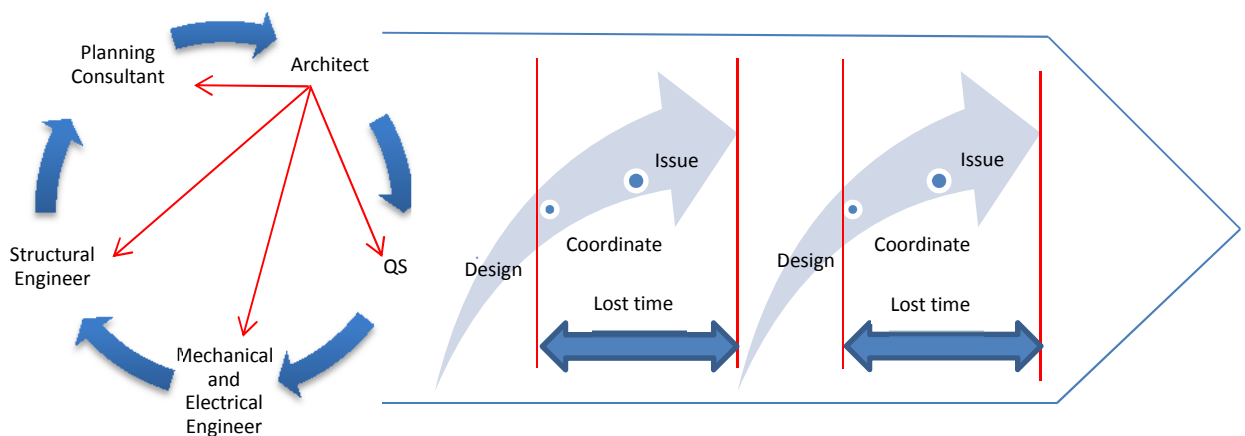
If the contractor understands the documentation, then construction becomes easier. We recently completed a building where the 3-D representations were just as important as the traditional plans and elevations. Peeling the 3-D drawings like an onion allowed the contractor to understand the build-up and therefore enabled him to correctly sequence the project. This reduced the construction costs and time to completion.

A BIM designed building provides the user with a maintenance interactive information system,

Whilst we’d like to say that Revit™ even makes cups of tea it does have downsides. It costs consultants more to get going and less at the middle and end of a project. With traditional procurement methods maximum expenditure usually occurs in the production information stage. It is best to employ Revit™ on projects where there is a high degree of certainty that a scheme will go ahead.

In order to achieve the above the consultants need to work differently. See diagram below.

Traditional procurement

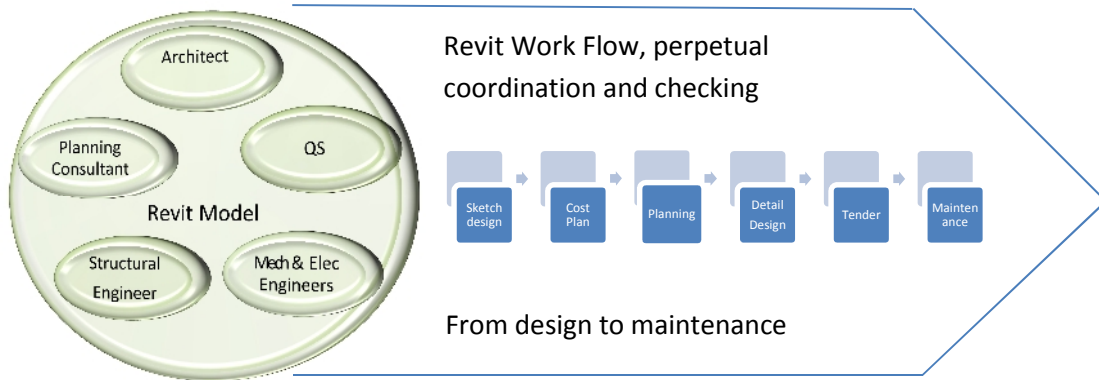


Multiples pool of information that need to be coordinated. Design alliterations are sequential.

Design alliteration for planning, building control, construction etc.

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Optimum Revit™ procurement



One pool of information

To leverage the above you need a design team that is prepared to work as a group using the same platform for their design processes. Whilst the below list of members are all independent consultants, we see the need to work closer together in a new way to offer this service. The aim of the group is to deliver the best possible service to our clients



QS
M&E Consultants

Structural Engineers

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A smarter way to design

92 William Street Swindon Wiltshire
Tel 01793 686462