

John Edwards explains how to manage risks in building conservation projects

Registering risks

A robust risk management strategy starts when one looks at a building for the first time, and does not end at the completion of a project, but continues into the use and occupation of a building.

A robust approach also involves employing a competent team, deploying the necessary activities and risk management tools, and then understanding that when one moves away from this ideal situation that risks are increased. However, one has to be proportionate, and through a cost-benefit analysis, the balance of what are deemed to be reasonable actions and activities can be ascertained.

There are many types of risk: although controlling costs and completion dates often steal the headlines, specifying the most appropriate work and making sure it is properly undertaken while optimum quality standards are achieved should also be considered part of evaluating risk.

The most critical initial stage starts with the appointment of the consultant or in-house team to follow the standard BS 7913: 2013: Guide to the Conservation of Historic Buildings, which sets out the overall process for undertaking work to historic and traditional older buildings. Describing competence and citing accreditations, also known as certifications, to identify suitable personnel is one way of minimising risk.

Understanding the building

There are greater risks in dealing with existing buildings than there are in constructing new ones. There can be uncertainty as to the exact design and condition, and we must also understand a building's historic significance.

It is not uncommon to find that a building's condition is worse than one thought, and to expose features that were previously unknown requires an awareness that more will be found

out about a structure as the project progresses. However, we should aim to keep the risk of these unknowns to an absolute minimum.

Such risks can be minimised if their possibility is understood at the outset, and a well thought-out strategy is developed at that stage. This needs to be properly resourced and implemented. The strategy should stretch into the ongoing management of a building and not end at the completion of a project.

At the outset, a risk management strategy must focus on the logical stages:

1. understanding the design and materials, as well as the chronological stages of its development
2. understanding the significance and vulnerability of the building
3. understanding the building's condition.

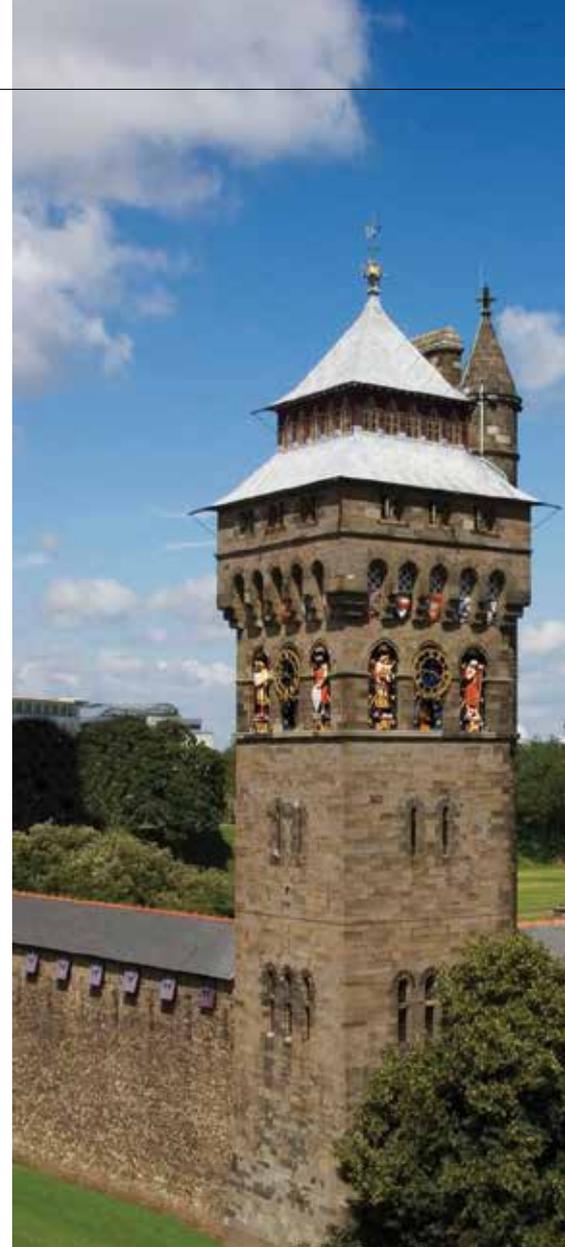
The more work that is put into comprehending these, the less risk one takes. One has to be proportionate and consider the cost-benefit analysis; there will be a limit to the amount of work that can be undertaken before this is considered unreasonable.

In relation to points 1 and 3 above, the amount and quality of information derived will depend on:

- **the type of building survey:** the choice between a purely visual inspection or a building pathological analysis
- **the competence of the surveyor:** whether they are accredited or certified for conservation work can make a very big difference to the outcome
- **the equipment used:** this can range from a simple electric moisture meter to surveying equipment that can test the strength of materials, analyse moisture sources and record true moisture levels as well as environmental conditions.

Interventions

All interventions will rely on these factors, and the extent to which the building is understood will have a huge bearing on the risks that are taken. Proper understanding of the impact of all the



types of possible intervention, including repair, is essential.

The problems that necessitate the repair should be the focus; if not, then there remains a possibility that they will occur again. If a repair is not on a like-for-like basis, it runs the risk of having an adverse effect on a building's historic significance. Therefore, a heritage impact assessment needs to be undertaken. If this process is properly followed by those with the required competence, the risk of inappropriate and technically unsound repairs will be minimised.

When planning to adapt a building, the same risks apply, but these can be even greater. Older buildings may have been performing in a reasonable way for a hundred years or more, but when adaptations are made, they can have a huge impact on that function, depending on the form of the adaptation. Risks can be managed if we understand the building and all the issues sufficiently.

Procurement

Selecting contractors that are specifically suitable for the project in question could



1 At Cardiff Castle, project risks were managed in several ways, including an extensive research and analysis programme, proactive quality management and an ongoing building management regime with environmental control

2 A major repair and refurbishment project at Trafalgar Square in Sunderland; the reintroduction of vapour permeability means managing the risk of residents applying impermeable decoration by having the landlord supply permeable paint to each resident regularly

go some way to minimise any potential risk. Look at a contractor's previous experience – both recent and historic – talk to its former clients, obtain the CVs of those working on the project and review the contractor's management structure and the expertise of its staff. The extent to which this is necessary will depend on the scale of the project: it could be that the contractors are so well known that not all of this would be required. However, overlooking any of the above will increase risks.

Procurement options have particular advantages and disadvantages, so it is important to choose one that can provide

the best results for the least risk, as it is to ensure that responsibilities are clearly understood and backed up in contracts.

The contractor will always be taking some risk in terms of its tender and allowances. Such risk needs to be reasonable because if excessive risk is put on the contractor then a higher tender sum may result, or tenders may not even be received.

Programming

Clients and their consultant team will program a project before appointing a contractor – it is wise to be aware that there are many preparations needed before the commencement of a project, and these may take longer than expected. Examples may include consenting to undertake work, though using competent advisors will help to reduce the risk of uncertainty. It is always possible, too, that the scope may change as the work progresses, especially if the client is relying on occupying the building soon after the project's completion. Factors such as weather can affect the work; choosing the most appropriate



time of year to begin will reduce this risk, although specifying protection measures will also help.

Cost management

Controlling the scope of a project is essential if costs are to be managed. The risk that the work will change and budgets may have to be increased must be accepted at the outset and a framework put in place to ensure that the cost of the work, including any variation, is fairly tendered. Any extension of a contract owing to an increase or variation of work should be on the basis of the original tender sum or done pro rata.

This means that sums received from each tendering contractor should be broken down consistently. The only way of doing so is for a measured schedule of works to be produced for all competing contractors to price. This may include provisional quantities, which are an estimate of what might be required. This will help to manage the risks of the client paying inflated prices for additional works to those previously specified.

Quality management

Ensuring that the contractor complies with the specification is essential, and BS 7913: 2913 contains advice through project supervision. This emphasises that simply checking over the work on completion may not always be adequate. Bearing in mind that some defects resulting from failure to comply with the specification may not themselves become obvious for many years – a more concerted approach is necessary in order to reduce these risks.

It is a contractor's responsibility to ensure specification compliance, and not that of a clerk of works, architect or any other member of the design team. Work should only be certified as complete on either an interim or final basis if it complies with the specification.

BS 7913: 2013 highlights a risk management approach to ensuring specification compliance and quality. From the outset, it requires the specifiers to detail areas of work that are high priority in terms of quality.

It means that, where it is not possible to determine whether an item of work has been properly implemented through inspection on completion, the contractor has to propose a method in a project execution plan by which they will manage the quality of work and demonstrate this to the architect, building surveyor or other client representative.

It is the responsibility of the architect or building surveyor to be satisfied, and they can undertake their own inspections and tests as necessary. In this way, the risk of non-compliance with the specification can be reduced.

There are many activities that one would expect to see in a contractor's project execution plan that include inspections at certain times, tests, managing materials storage and such like.

Soft landing

If a project has been properly initiated and completed, with all risks understood and managed, then the building should be appropriate for its intended occupation. If there are any limitations on this, then they must be understood by the building's occupants and managers.

It is also important from the inception stage that appropriate expertise is deployed in the use and operation of the building, as this will minimise the risk of adapting a building in a way that renders it unsuitable. Such expertise may cover both operational and commercial factors.

Implementing mitigation

All the various possible risks need listing collectively at the very beginning of a project in a risk register. In this way, they can be assessed, mitigatory approaches determined and recommendations made.

These may include the ideal means of managing the risks along with second, third and perhaps further options. There will no doubt be instances when implementing risk mitigation may depend on the client's willingness to put in sufficient resources. ●



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