

Refurbishment in a “Net-Zero Carbon” Era

The Traditional Approach to Refurbishment

Refurbishment projects have always been seen as the less glamorous construction projects, compared to futuristic new builds.

Historically, when given the option, organisations and professional teams will opt for a new build over refurbishment, with a new build being seen as the quicker, aesthetically appealing, and less risky option. This ideology accompanied by consultants and contractors delivering worrying advice and insights, elevates the potential perceived risk of something going wrong, with their advice typically being that demolishing an existing asset and starting from nothing is quicker and less risky.

The effects of climate change

The “net-zero carbon” era has changed that forever. The true question is “Why would we wish to demolish and rebuild facilities, if that is going to release a lot more carbon into the atmosphere?”

The changes to the social, economic, and environmental landscape have meant pursuing a new build project has become increasingly difficult. With planning conditions becoming more stringent, limited availability of suitable brownfield sites and an increased focus on “reduce, reuse, recycle,” these all-place additional obstacles in the way of delivering a new build project, thus making the idea of refurbishment more desirable.

How to reduce the risks of refurbishment

It is the unknowns which make refurbishment projects less desirable than new buildings. Therefore, it is necessary to have a full understanding of the building and an effective management approach in order to reduce the risks of refurbishment.

This, combined with the social, economic, and environmental pressures of the 21st century makes refurbishment a much more obvious, and easier choice for many clients.

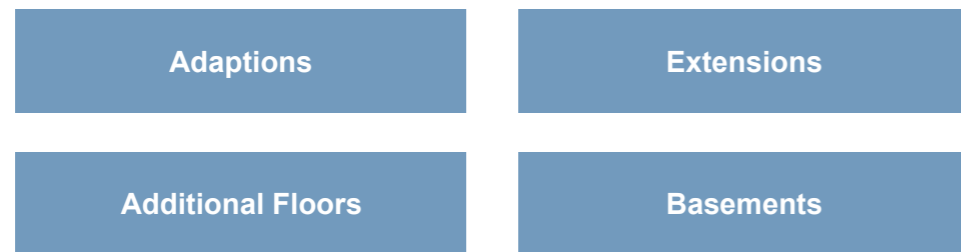
In this guide we will explore the initial considerations a client should make when deciding whether to undertake a refurbishment project and the detailed considerations that need to be made to ensure that it is effectively managed and delivered.



Initial Considerations for Effectively Managing Refurbishments

Before embarking on a refurbishment project it is important to have a full understanding of the factors involved. An initial assessment of the project and its key considerations will enable you to effectively plan and manage the project whilst ensuring you have a better understanding of any associated risks.

- 1. Familiarise yourself with similar refurbishment projects:** Refurbishment projects can be just as exciting as new-build projects. It is recommended that you familiarise yourself with what can be done. Look at similar projects and buildings that have undergone refurbishment to gain inspiration and ideas and let your imagination fly! For example, study the examples of developers transforming old warehouses into creative commercial space or high-end residential developments.
- 2. Understand your existing building assets:** Having clear insight of the existing building elements and systems is vital to a successful refurbishment. Establish what is wrong with the building (the things that must change) and what still works (the things that can be kept). Identify elements that can be reused throughout the project, which will contribute to project cost savings. Often refurbishments are oversimplified by assuming that everything can be stripped and thrown away.
- 3. Explore all refurbishment options:** A refurbishment can mean so many different things and it is important to explore all options prior to making any key decisions. Refurbishments can consist of:



Many will often be surprised at the potential opportunities that can be generated through a refurbishment project, which when carefully considered and managed a refurbishment does not have to be limiting. It is also worth remembering that even new-build projects will always require some level of compromise.

- 4. Understand planning permission:** Obtaining planning permission for a refurbishment can be a lot simpler. It can be seen as a preferred approach as it is less invasive than a new-build project, therefore you are almost pushing on an open door. Submitting an application for change of use or for ensuring that you abide by listed building consents are easier than obtaining permission for a new building. It is important to understand the time and cost implications of revisiting planning applications if they are rejected. It may be better to pursue a modest refurbishment that achieves the business goals than a daring new build that generates increased risk.
- 5. Strategic review of Building Regulations:** By understanding the existing structure and fabric you will be able to gain an understanding of the building's performance. If the structure and fabric perform well, then the refurbishment may simply be a fit-out. However, if the fabric performance is poor this will impact the cost and extent of the refurbishment.

Detailed Considerations for Effectively Managing Refurbishments

When initial considerations have been undertaken you must then embark on understanding the detail of the refurbishment. This means uncovering potential risks, eliminating any uncertainties, and appointing the right team to undertake the project.

- 1. Existing building structure:** A detailed investigation and survey into the existing building structure is money well spent. Exposing and identifying the structure of the building will ensure that any unknowns are uncovered. This is a crucial stage in effectively managing a refurbishment project, you should not rely on estimates and assumptions. Challenge operational teams to grant access to occupied spaces to eliminate guesswork.

The more you know, the easier the project will be, so investigate, investigate, investigate. Your approach should be to go looking for any problems, including items such as:

- Depth of the foundations
- Concrete cover
- Wall cavities
- Asbestos
- Isolation of services
- Voids and spaces

You will need to know this information and deal with it safely, whether you are refurbishing or not. Even if you conclude to sell a building you then have information to assist any future purchaser's surveyors.

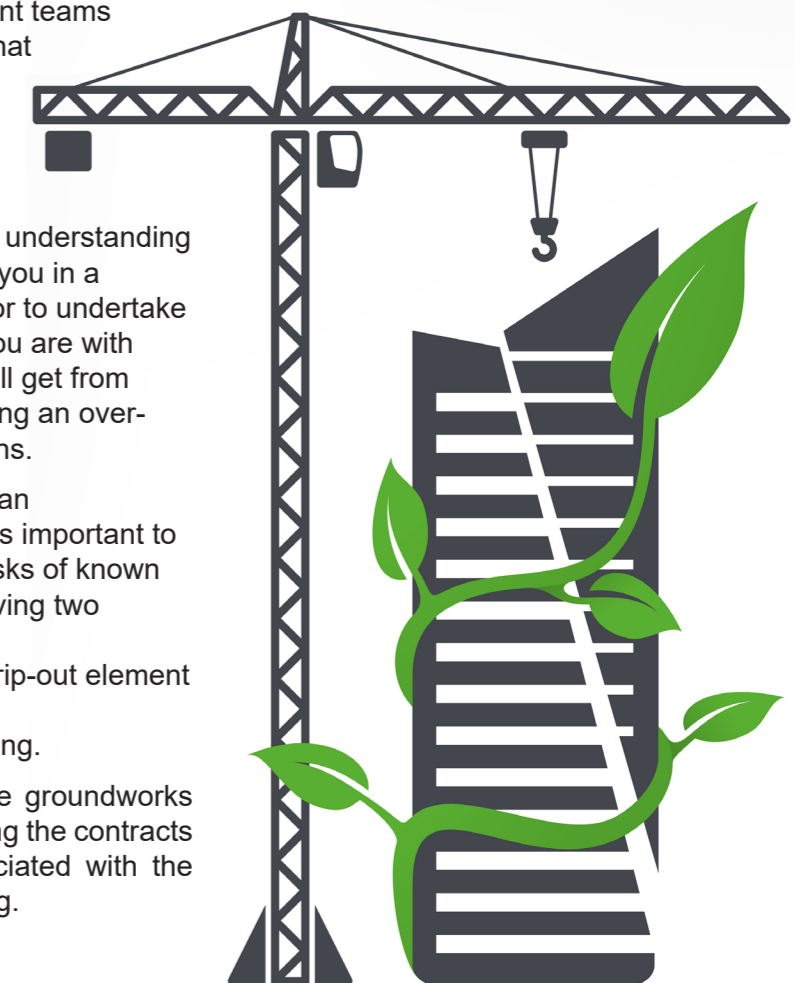
- 2. Budget and cost control:** Design Teams usually advise you that demolishing a building and starting again is the cheapest option. This may be the case when you do not have a full understanding of the building, but equipped with the right information and knowledge a refurbishment can be considerably cheaper compared to a new build.

- 3. Contractor selection:** It is essential to appoint teams that understand refurbishment. You will find that they are not phased when issues arise, they understand the risks and how to deal with them and they advise the health and safety issues from a risk informed position.

- 4. De-risking the price:** If you have a thorough understanding of the project and its potential risks, it places you in a stronger position when appointing a contractor to undertake the works. The more open and transparent you are with the building elements, the better value you will get from a contractor. It reduces the chance of receiving an over-inflated price based on risk-based assumptions.

- 5. Construction approach:** When deciding on an appropriate approach to the refurbishment it is important to consider the benefits of disaggregating the risks of known and unknowns. We therefore recommend having two contracts for the project:
 - The first being an enabling contract for the strip-out element of the building.
 - The second then being the fit-out of the building.

The biggest risks in construction projects are the groundworks and unknown elements within a building. Separating the contracts enables you to deal with the known risks associated with the above prior to undertaking the fit-out of the building.





Key Findings

In the current environment we must, as an industry, be better at dealing with what we have. We must move away from the mentality that starting from new is easier than reusing what is already in place. The construction industry promotes the notion of reduce, reuse, recycle in relation to build materials and waste, this ethos must be extended to cover buildings if we are to improve as an industry.

If we do this, we will arrive at net-zero carbon – an essential backed by more than 190 countries at the COP 2022 talks in Sharm El Sheikh, Egypt.

Refurbishment does not have to be a last resort option. When effectively managed and considered, it can provide exceptional value for money and creates some unique and exciting spaces.

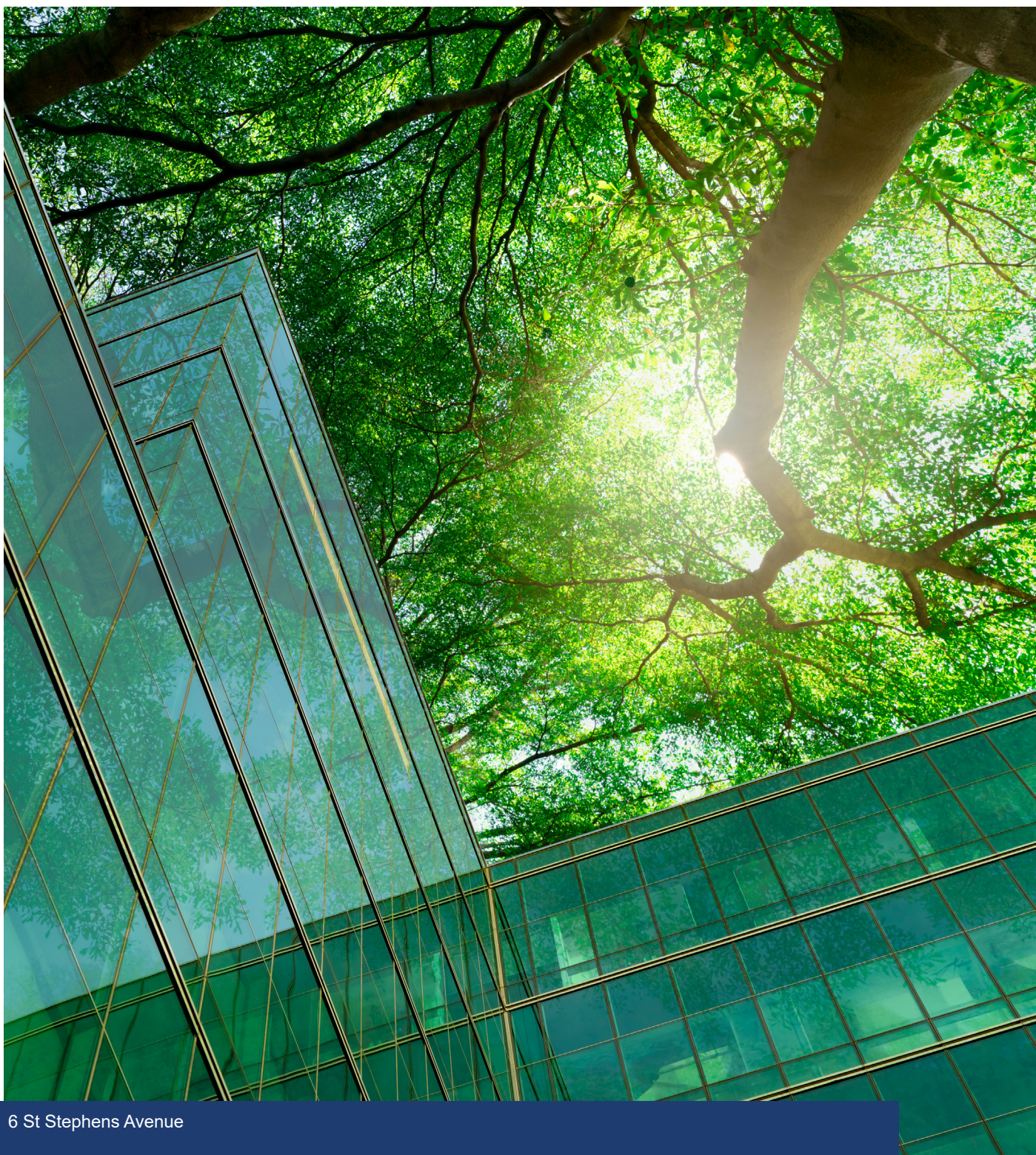
The key to refurbishment is to simply understand and demystify the risks prior to starting the project.

6. **Decant and move planning:** The decant and move planning associated with the project is a key consideration when undertaking a refurbishment. When demolishing and re-building you would have to decant and temporarily relocate tenants. With a refurbishment you can consider a phased operation which enables elements of the building to remain operational whilst works are being undertaken.
7. **Move costs:** If a move is not considered or planned it will add costs to the project, especially if opting to demolish and build new. The cost of moving building occupants is not included in the construction cost of a new build. This must be evaluated separately and considered carefully to allow comparisons and ensure value for money.
8. **Strategic programming and scheduling:** As a rule of thumb, anything involving changing the existing structure should be included within the enabling package such as moving walls and cutting lift wells. Experienced contractors understand the detailed logistics thinking that is required and the associated sequencing of the works.

Considering these elements of the programme early enable you to plan and schedule in the most efficient and productive way possible. Poorly considered and you will encounter both time and cost consequences.

9. **Asbestos and hazardous materials:** If through your investigations you uncover asbestos or other hazardous materials then you have to deal with the problem regardless of the type of project approach you adopt. Demolishing, refurbishing or even selling the building means you must deal with the problem. You will have two options; either effectively manage the material; or be prepared for it to be reflected in the building value if you decide to sell.
10. **Utilising Carbon Data:** Having a strong and factual understanding of your building's current performance, in relation to carbon production and energy usage, will enable you to further unlock refurbishment benefits through carbon reduction measures. This usage combined with the organisations net-zero targets identifies how much carbon must be reduced across the estate. This data can then be used to inform refurbishment options that best benefit the building and organisations strategy. Further to this, it allows for a programme of reduction and mitigation projects to be created. The data from this can be inserted into a wider programme of works from across the estate ensuring that carbon reduction is undertaken in conjunction with the wider commitments of the organisation's capital and maintenance programmes. This approach to carbon reduction enables organisations to:
 - Save money on overlapping programme projects (e.g. a project is identified in long-term maintenance and is also highlighted as a carbon saving project).
 - Prioritise projects that create the bigger time and cost saving by having a wider strategic scope on project delivery.
 - Efficiently undertake building works with minimal operational disruption.





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