

Good practice guidance for refurbishing occupied buildings

W Fawcett

J Palmer

Summary

This good practice guidance has been written for people involved in refurbishing occupied buildings. Its contents are relevant for clients, occupants, consultants and contractors.

The guidance is based on 30 interviews with experts who have worked on refurbishments in different sectors. It describes good practice principles for the main issues that come up over and over when occupied buildings are refurbished: project planning, collaboration and communication, health and safety, security, and avoiding nuisance to occupants.

The guidance will help readers to identify the potential pitfalls for their project, and to take pre-emptive action so that people using the building are disturbed as little as possible. There is advice for all stages of work: planning, design and work on site. The advice will improve readers' understanding on the special problems of refurbishing occupied buildings, and will help them to ensure their projects run as smoothly as possible.

Good practice guidance for refurbishing occupied buildings

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Consultation and being interviewed do not imply that these people endorse all views expressed in this guidance.

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A series of common questions about refurbishing occupied buildings.	

This section explains how to use the guidance, describes the implications of refurbishing an occupied building, and helps clients to decide whether to proceed with their refurbishment project.

Objectives

This good practice guidance has been written for people who are involved in refurbishing occupied buildings – including clients and occupants, as well as designers, builders and other people with a role in projects of this type. The good practice principles, based on the experience of refurbishing many occupied buildings, should help to ensure an efficient refurbishment with minimum disruption to business continuity. Here, “business continuity” means the on-going activities of any organisation occupying a building under refurbishment, including public sector organisations like schools and hospitals as well as commercial firms.

Audience

The guidance has been written for a wide readership, including non-specialists. It is intended particularly for clients and people in construction firms who have limited experience of refurbishment in occupied buildings, but it also has lessons for more experienced readers.

For simplicity the wide range of people who get involved in these projects are divided into groups. Two of the groups are on the organisation side:

- **the client** – decision-makers responsible for initiating and directing the project
- **occupants** – people using the building;

and two of the of the groups are on the design and construction side:

- **the design team** – architects, engineers, quantity surveyors and specialist consultants
- **the construction team** – general contractor, management contractor, specialist sub-contractors or suppliers.

In addition there is often a role for legal experts, insurance specialists, etc. **The project team** includes everyone. All groups stand to gain from reading this guidance.

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Scope of the guidance

There is a very wide range of refurbishment projects. This guidance assumes that refurbishment involves more than routine maintenance, and normally requires the occupants of the particular area under refurbishment to move away temporarily so that the builders can carry out the refurbishment tasks. The simplest refurbishment projects may mean renewing finishes, such as a coat of paint and some new carpeting, while larger projects could include structural changes and the renewal of building services. Sometimes refurbishment affects a single room, while on other occasions it affects every room on a floor, or even multiple floors of a building. In some projects refurbishment is rolled together with an extension or new building.

Most of the recommendations offered here apply for all scales of project. They should also apply to most types of building. None of the case studies was of a residential project, although many of the good practice principles are equally relevant for housing refurbishment.

The guidance focuses on the special issues that arise when an occupied building is refurbished. Therefore many important points that apply to all construction projects, but are not specific to occupied refurbishment, are not covered. The guidance gives some suggestions for sources of information on these more general topics.

When discussing the impact of refurbishment, the area around the refurbishment site is also included. This guidance extends to traffic and delivery issues, the health and safety of passers-by and neighbours, and signage outside the building being refurbished.

The guidance applies through all stages of project development and implementation, including the earliest pre-design stages.

How to use the guidance

Readers are not expected to read the guidance all the way through. Rather, it has been written as a series of modules that can be read in any order. We suggest that novice readers skim through it quickly, when they first contemplate refurbishing an occupied building, to get an overview of the range of issues that need to be considered.

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As the project develops, readers are advised to focus in more detail on particular parts of the guidance. The order of modules is meant to reflect approximately the stages of project development, so that the issues in Chapter 1 are likely to be addressed before those in Chapter 8, but readers may prefer to skip backwards and forwards through the guidance at all stages of the project.

Most of the points raised need to be planned before work starts on site, so it would be unwise to put the guidance aside with the intention of returning to it when construction actually starts.

All the good practice principles in the guidance are based on case study experience, but not every principle will be applicable to every project. The project team should evaluate all the principles and select those that are appropriate for a particular case.

The guidance ends with a set of Frequently-Asked Questions (FAQs) about refurbishing occupied buildings. These give basic background information. People who are new to construction should look at these before moving on to the guidance itself.

When contemplating the refurbishment of an occupied building, the most important decision is whether to proceed with the project or find some other way of meeting the client's objectives. A decision aid to help with this is included at the end of this introduction.

Health and safety issues and risk management

Two issues that affect all construction projects need particular attention when refurbishing an occupied building:

- **health and safety** – as well as addressing the health and safety issues that arise in conventional construction projects, the project team also needs to ensure that occupants and building users remain healthy and safe during refurbishment
- **risk** – occupied buildings introduce additional complications in terms of identifying and managing risk.

Both health and safety and risk management must be tackled from the start, as soon as the concept has formed. Indeed, an appraisal of risks may be central to the decision to stay in occupation or to vacate the building. Holding a risk and value management workshop at

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the outset, using the themes raised in this document, will form an excellent starting point for discussion. Clients are strongly advised to carry out an integrated risk and value management exercise at concept stage, both to confirm the nature and scope of the project, and as a basis for managing the project through to completion.

Detailed approaches to health and safety and risk management are beyond the scope of this guide: references are given at the end of this section. The common issues for health and safety in refurbishment are identified in Section 5.

Implications of the decision to refurbish

Managing disruption

The impact of refurbishing an occupied building depends on the extent and scale of the work, how the work will be managed and how the building is used. To give some idea though, people using a building undergoing refurbishment should anticipate at least some of the following:

- increased risk to health and/or safety from construction (which must be managed)
- restricted access and temporary circulation routes
- reduced facilities (including car parking)
- individuals having to move away from normal work areas
- temporary disruption to services (power, lighting, heating, etc)
- noise, vibration, dust and odours
- the presence of builders
- potentially, reduced security
- visual impact of building work, externally and internally.

These are the negative impacts of refurbishing an occupied building, but vacating the building brings another set of questions to consider. For example:

- Can alternative premises be found, and at what cost? Is it worth the upheaval of moving twice – out and back in again? It is rare for a business to vacate a building and move back into it post-refurbishment, unless it is a very special building or in a very special location.

- Will customers, employees, or members of the public be inconvenienced if the business is temporarily relocated? Department stores, for example, are very reluctant to close down because regular customers may switch to a rival.
- Can operations close down completely for the refurbishment period and reopen when is finished? This sometimes happens with theatres and museums, but the question of staff retention during the shut-down is a problem. There is also the challenge of bringing the public back on re-opening.

It is sensible to establish which core functions of the building are essential for business continuity, and which can be temporarily sacrificed. Similarly, it is important to consider what spaces or facilities can be vacated during the refurbishment.

Cost and time implications

The economic dimension is critical. There are always alternative ways of carrying out a refurbishment project, and the more generous the client's budget, the more choices exist. If funds are tight, the client and occupants may have to accept more disruption, or the client may be forced to break the work into phases, carried out over a longer period. Alternatively, economics may lead to large-scale decanting (moving people out of areas being refurbished) so that the builders can work more efficiently.

It is difficult to provide rules of thumb to estimate how long a refurbishment project could take. In almost all cases, however, it takes longer to refurbish a building if it is occupied than if it can be vacated. As projects progress through the different stages of design, estimates for the programme and cost are likely to be revised. Be aware that once work starts on site, delays may affect the programme completion date, and unforeseen problems can often lead to increased costs. Being realistic is essential at the planning stage.

The cost of refurbishment varies considerably depending on the scale of work and the condition of the building. Excluding the costs of moving, a major refurbishment is generally between 25 and 30 per cent less expensive than a new development (although a city centre refurbishment can be more expensive than new build on a greenfield site). Approximate cost guidelines for a prestige office refurbishment in London are shown in the table below.

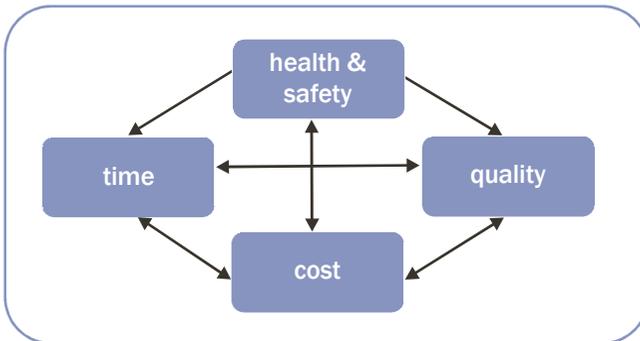
Introduction

Guideline refurbishment costs for prestige offices in London

Minor refurbishment	Redecoration, repair and minor work on building services	£300–800/m ²
Medium refurbishment	Significant stripping out, updating and renewal of services and core areas	£800–1200/m ²
Major refurbishment	Major structural alterations and renewing all services	£1200–1700/m ²

Source: Davis Langdon, adjusted to Q4 2003

There is often a trade-off between cost, time, and quality. It is down to the client to set the relative weighting of these factors, to guide the design team. It may be, for example, that a particular deadline is vital but the client is prepared to accept some relaxation in quality standards. Alternatively, for a prestige building where top quality materials and workmanship are required, greater expense may be acceptable.



Cost, time and quality are inter-related. They must take account of health and safety, which is non-negotiable and required by law.

Deciding whether to proceed

Many factors should be considered when deciding whether to proceed with the refurbishment of an occupied building. The seven most important ones are described in the matrix below, which will help any members of the project team to decide whether to go ahead with refurbishment in occupation, or whether it would be better to find another solution.

Consider your own situation and project, assess each factor and mark the appropriate column in the table.

If most issues are marked in the right-hand columns (✓ or ✓✓), refurbishment in occupation is likely to be a good idea. Conversely, if more issues are assessed in the left-hand columns (✗ or ✗✗), the difficulties are severe and it may be better to vacate the building either temporarily or permanently. The results of this exercise are intended as a guideline only, rather than a definitive verdict on whether to go ahead.

Remember that some organisations are volatile and the business case for refurbishment could change rapidly. For example new activities, changes in the financial situation, or new government policies could mean decision-makers no longer support the refurbishment. It is unwise to make a 100 per cent commitment too early.

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ISSUE		ASSESSMENT			
		x	xx	✓	✓✓
Activities	<p>If the occupants and activities of the building would be tolerant to some disruption, mark ✓ or ✓✓.</p> <p>If they are more sensitive to noise, vibration, dust or other pollution it will be harder to refurbish: mark x or xx.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occupancy of building	<p>If it is possible to move employees, customers or visitors around to create plenty of decant space mark ✓ or ✓✓. If people are already tightly packed and it will be hard to free up space for the builders, mark x or xx.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timetable of activities	<p>If there are gaps in the use of the building (like school holidays) when builders can work without causing disruption, mark ✓ or ✓✓. Conversely, if there are always people in the building or the immediate neighbourhood, mark x or xx.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Site and surroundings	<p>If the site and surroundings are spacious, with easy access and a large working area, mark ✓ or ✓✓. If the site is already congested or boxed in by neighbours and other buildings, mark x or xx.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scale and extent	<p>If the scope of refurbishment is modest or only affects part of the building, mark ✓ or ✓✓. If a large proportion of the building requires work, and if the work includes major changes, mark x or xx.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public access	<p>If the building is used by (large numbers of) the public or visitors, who would be inconvenienced by closure or relocation, mark ✓ or ✓✓. If it is 'private' to the staff, who can be notified about a temporary close-down or relocation, mark x or xx.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Building/ location	<p>If it is a special building or in a special location or site, for which there are no real substitutes, mark ✓ or ✓✓. If it is a run-of-the-mill building like many others, mark x or xx.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VACATE PROCEED

How to proceed

This guidance assumes that you decide to proceed with refurbishment while retaining business continuity. It is based on good practice guidance taken from the experience of 30 people with first-hand involvement in refurbishment projects of this type. These good practice principles are grouped into eight sections. If you have not yet decided for sure whether to proceed, reading the principles may help to give an indication of the pros and cons.

Not all the principles are applicable to all refurbishment projects. It is worth thinking carefully about all of them before deciding which to adopt. Some principles, for example those dealing with health and safety, are a requirement for all projects.

Where to find out more

Office Refurbishment: Handbook, Davis Langdon <www.davislangdon.com>

The Complete guide to facilities management, LexisNexis Butterworths

Refurbishing occupied buildings: Management of risk under the CDM regulations, Thomas Telford, 1998

Value management in construction: a practical guide, Macmillan, 1995

CIRIA Publications:

C602 *CDM Regulations – practical guidance for clients and clients’ agents*, 2004

SP129 *Value management in construction: a client’s guide*, 1996

SP125 *Control of risk: a guide to the systematic management of risk from construction*, 1996

Integrating risk and value in construction (RP643, forthcoming).

1 Project planning

Time spent in planning at the beginning of a refurbishment project improves the chances of getting a successful project. Planning and consultation also minimise disturbance to occupants and visitors during the work.

Why this issue is important

It is all too easy to rush the planning stage. Wishing to complete the project as soon as possible is natural, but it encourages people to cut corners. It is worth spending extra time on sound planning, which is enormously helpful in reducing the risk that things will go wrong later. It also helps cut the chance of having to change the project once work has started. Such changes inevitably push up costs and slow down refurbishment.

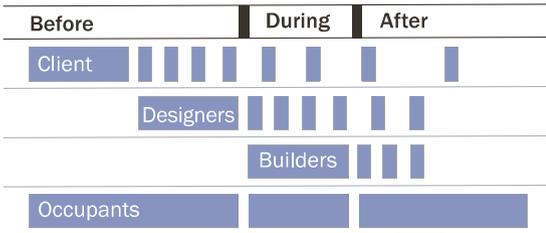
Good communication and good planning go hand-in-hand. All members of the project team should be clear about the client or occupants' aspirations for the project. They also need to know as much as possible about the occupants' business so they can plan the project to keep disruption to a minimum. Without sound planning as a skeleton, it is impossible to let everyone know what is going to happen in advance. As noted in the introduction, this is the stage when proper attention to risk management and health and safety will pay dividends throughout the rest of the project. A planning supervisor, whether in-house or external, must be appointed at an early stage. This person will ensure that health and safety issues are captured and addressed for the purposes of the Construction Design and Management (CDM) Regulations – see Section 5.

Strategies

Different people are involved at each stage of the project, and the choice of whom to involve in preparation and planning is critical. In traditional contracts, responsibilities vary radically at different stages of the project (see figure below), The client should play an active role. Typically, someone from the client's side is chosen as a project sponsor to champion the initiative. This person is the main conduit for information between the client and the project team. The sponsor is often helped at this stage by an advisor with construction experience, perhaps from outside the client organisation. The sponsor should be authorised to make decisions on the client's behalf. If they are not, delays are inevitable.

Project planning 1

Main players at each stage in traditional contracts

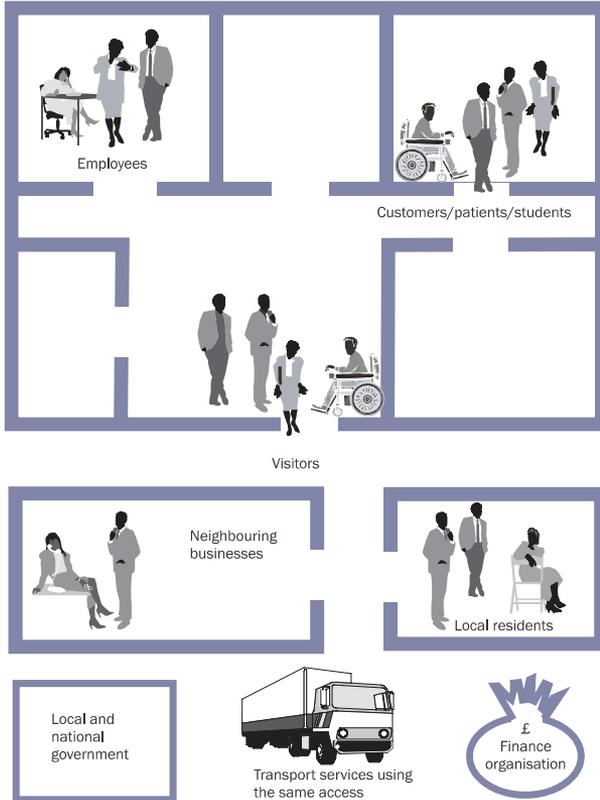


It may be helpful to organise a workshop at the beginning of the project, bringing together the building owner, occupants, the client’s advisor and any other consultants employed at this stage. This provides an opportunity for all to state their hopes for the refurbishment, including how they expect to be affected. The early investment of time is repaid many times as a result of better communication and improved understanding. Construction professionals can explain how occupants are likely to be affected, while occupants can explain what effects are tolerable and – importantly – what effects are not.

Consultation should not be limited to managers. It pays dividends to consult everyone affected by the project including employees, visitors, other groups who use the building and neighbours. These people are often referred to as “stakeholders”. Other mechanisms for consultation may be preferable for people unable to attend a workshop.

1 Project planning

Stakeholders



It is often useful for clients and occupants to speak to others who have been through the same process – project teams that have refurbished other similar premises, or owner-occupiers who have worked on their buildings. They will have tips about what worked well and what to avoid.

Case study – Heathrow Terminal 3

Methodical planning was vital for the refurbishment of an airport terminal used by 7–8 million people per year

BAA decided to extend and refurbish the International Departures Lounge in Terminal 3 at Heathrow Airport. European duty-free had ended and one of the main objectives was to increase retail space for duty-free sales to people travelling outside the EU. Additional pressure came from a regulatory review, the desire to maintain a positive customer experience, and improve passenger facilities.

The project was completed in March 2003, after five years' work, at a cost of more than £100 million. This included a 4000 m² extension, in-filling two large floor voids, inserting a 40 m x 9 m rooflight, re-configuring services and moving the central search facility. The project was complicated by enhanced levels of security required after the terrorist attacks of 11 September 2001.



This meant, for example, that site operatives had to be vetted more thoroughly, and anyone who went airside needed a security pass.

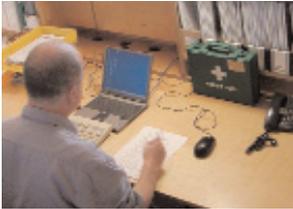
Planning was meticulous. Seven to eight million people pass through the terminal each year, so there was no alternative to carrying out most of the work at night. All equipment and materials had to be on site before work started, and removed before the airport opened each morning. The position of cranes had to be coordinated with parking for baggage-handlers. It was critical to maintain core facilities for passengers – catering, toilets, retail and seating – at all times. BAA had to estimate passenger numbers in the seasonal peaks and troughs to ensure that the facilities were adequate. Circulation routes had to change several times while work was in progress, and changes to wayfinding signage were built into the programme. When daytime work was unavoidable (to fast-track the final phase), staff tolerance levels were challenged, but still they maintained business continuity.

1 Project planning

Good practice principles

Health and safety appointments

The client should appoint a planning supervisor for health and safety issues and should also consider appointing an expert on risk and value management.



The client normally has to appoint a planning supervisor to take responsibility for meeting the Construction Design and Management (CDM) Regulations.

On all but the smallest projects, the client is responsible for appointing a planning supervisor to take responsibility for the health and safety Construction Design and Management (CDM) Regulations. The planning supervisor can be an in-house appointment from the client's organisation or an external consultant. The role can be taken by a design consultant (eg the architect or structural engineer).

The planning supervisor must be appointed before the other members of the team, and must advise on their selection.

Appointing an expert in risk and value management at the concept stage should also yield benefits. It would be helpful if this expert retained the role throughout the project. A suitably-qualified member of the project management team would be the best choice if the procurement route allows such an early appointment.

Choosing the right form of procurement

The client should choose a procurement route compatible with their objectives for the refurbishment and the nature of the project.

The four main procurement routes



In traditional procurement all the important decisions are made by the client and the design team before the builder is appointed (usually by competitive tender).

In the management approach the builder works alongside the design team and manages the appointment of specialist sub-contractors for the building tasks.

In these two routes the client can choose whether to be closely involved or take a hands-off role.

In design and build the client appoints a single firm with complete responsibility for the project. The D&B firm assembles the design team and delivers the completed building. The client faces lower risk but has less control over the project.

With design, build, finance and operate the client hands over still more responsibility to the building provider. The client pays a regular service charge over the life of the operating contract (often 20 or 30 years) instead of making a capital payment at the time of construction.

Procurement is the process by which a client buys products and services from the construction industry. Building projects are very diverse and there are many procurement routes. All routes involve the full range of professional skills appropriate to the project. However, the method of procurement determines how much of an input the client and members of the construction team have at different stages, who has overall responsibility, and who carries most of the risk.

There are two special considerations for refurbishment projects in occupied buildings. First, meticulous project planning: the need to minimise disruption for occupants requires exceptionally careful planning of the construction process. In consequence, it is desirable to involve the builders in project planning alongside the design team as early as possible, to benefit from their greater practical experience of building.

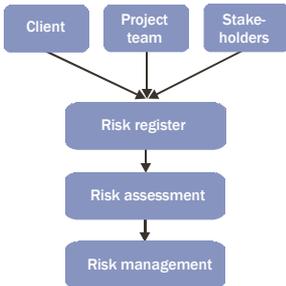
Second, cooperative site operations: because the builders have to work in close proximity to the occupants, a cooperative relationship between the client, design team, builders and occupants is essential. This helps ensure the inevitable day-to-day problems are dealt with quickly and efficiently.

When refurbishing an occupied building, the client should choose a procurement route that takes account of these considerations.

1 Project planning

Manage all the risks

The construction team should make all construction risks explicit, while the client or occupant should spell out the risks to business continuity.



Pooling the experience of the project team, client and stakeholders at the concept stage is very helpful. Risk workshops make it easier to agree objectives and rank the risks faced. They are also an opportunity to plan actions to eliminate unacceptable risks and reduce undesirable ones.

The client should draw together stakeholders and appropriate experts to identify and assess all the risks inherent in the project. Because the client's business is more likely to be affected in an occupied refurbishment than in new build, an integrated risk and value management approach is recommended. This approach will help to ensure that choosing to refurbish in occupation is sound.

Drawing up a risk register allows you to identify risks and record the actions to take to mitigate risks. This helps in cutting the chance of hazards affecting occupants and the project, and planning contingency measures if the project does go wrong. The next stage, risk assessment, involves weighting individual risks according to their consequence and likelihood. This permits you to focus resources on the most serious risks. It is often helpful to run a risk management workshop. Try to brainstorm all the risks faced by the whole project team, the client, and occupants – both construction risks and risks to the client's activities. Between them, all members should have some idea of the likelihood of risks materialising and the magnitude of the effects. The impact of a risk is normally considered as the likelihood of the event × magnitude of its consequence.

The client should try to appoint one person to take special responsibility for risk. He or she should ensure that risks are kept to a minimum during construction, and make sure that contingency plans are prepared in case there are problems. Naturally, contingency planning should involve all parties in the project, so everyone is clear about their own responsibilities and how they should react.

Project planning 1

Conduct a proper briefing

Talk to all parties likely to be affected by the refurbishment.



Briefing is critical. The brief should state clearly what the client expects from the work, including expectations about cost, quality, time and safety. It should reflect the views of all those affected by the work.

Briefing is the way that the client and construction professionals explore, develop and communicate the client's requirements. There is often a written brief, which may evolve as the project develops. Without a clear brief, the chances of getting a refurbishment that meets the client or occupant's expectations are vastly reduced.

The brief should say what is expected from the work, and describe the context for the project. It should explain the client's problem – the motive for the work – and lay down clear requirements for safety, quality, time and cost. Ideally, it also defines success criteria, so that, on completion, the project team can assess whether it has done a good job. Briefing is important for the client as well as the project team. It ensures that the client has really thought through what is wanted. It's surprising how many projects struggle with vague or even contradictory client objectives.

It is critical to be realistic when deciding on the costs and timescale for work. Projects often exceed budget and take longer than programmed because of over-optimism. There is often an incentive for consultants to tell clients what they want to hear – raising expectations unrealistically.

Sometimes briefing is regarded as a distinct pre-design task to be done before anyone tries to come up with solutions; the competing view is that it is the first stage of the design process. Briefing can be done in-house or the client can bring in specialist consultants. However, the brief should not be set in stone but should allow flexibility as new information is revealed. Such revelations are common when refurbishing existing buildings.

1 Project planning

Identify mission-critical issues

Find out the most vulnerable and important parts of the business or service.



At BT Centre, contractors had to replace ventilation equipment above suspended ceilings in offices. Computers on people's desks were vulnerable to dust, which could have disrupted BT's work. Contractors worked over the weekend, when few occupants were around, and used dust covers to protect computers. Everything was returned to normal by 8 am Monday morning.

Some parts of the occupants' organisation are clearly essential for its work – perhaps the telephone system or computers. Other aspects may be required for normal operations, for example, lifts or lights to allow occupants to see what they are doing.

Other facilities may be easier to overlook: how would the occupants fare, for example, if staff or customers could not park in their usual places? What would be the impact of a flood in the canteen, or having no water for a day?

Occupants could probably cope without heating in summer or without air conditioning in winter. But they probably couldn't cope with the reverse.

During planning, consider each aspect of the organisation's activities and how it might be affected by refurbishment.

Highlight any vulnerable periods – busy times of the year, or times of day when specific aspects of the business would be more vulnerable to disruption. Designers and builders should include this in their planning to ensure that major risks are designed-out of the project where possible.

Even during design and construction the project team should do reality checks at regular intervals, asking “how will this affect the occupants' mission-critical issues?”

Project planning 1

Are moves possible?

Establish whether occupants can be moved, and what decant space is available.



This striking accommodation at the University of East Anglia is being refurbished to bring kitchens and bathrooms up to modern standards. However, before work could start UEA had to wait for new accommodation blocks to be finished, so that the students could be decanted out of the “ziggurats”.

It is normal to move people, or goods, or equipment out of the areas where the builders carry out refurbishment work. It is best to investigate opportunities for freeing up space as early as possible in project planning.

“Decanting” is the process of moving people out of the area being refurbished, and then (if required) back again afterwards. When possible, try to decant people to locations well removed from the building work – where they will not be affected by noise and disruption.

Sometimes it is possible to create decant space by consolidating occupants’ use of the building: arranging workspaces closer together, or taking advantage of under-used meeting rooms or canteens. In some circumstances it may be possible to use temporary accommodation such as rented portable huts or purpose-made temporary buildings. These should be installed before the refurbishment proper commences. Alternatively, there may be space available for rent nearby. In all cases of decanting try to minimise the inconvenience to the occupants being moved.

Some operations can be very difficult to move, for example, long-established public access points, or activities with heavy or delicate equipment. There are usually some activities which are relatively easy to move and whose location is less important. These constraints are a vital factor in planning and sequencing.

1 Project planning

Consider reducing operational presence

Is it feasible to maintain a small scale on-site presence?



At the Sauchiehall Centre, the WH Smith shop was radically reconfigured, but a newspaper kiosk-type operation was kept running throughout the refurbishment so that loyal customers would not go elsewhere.

In a major refurbishment, it may be necessary to decant the greater part of the occupants and activities, but if the building is in a vital location or has a user base that must continue to be served, consider scaling right down to a “kiosk” operation.

This is not an option for all buildings or organisations, but it can allow continuity with a reduced range of services or facilities.

Project planning 1

Contingency and disaster planning

What happens if the work takes longer than anticipated, or if the project goes wrong?



The project team discovered they had had to do massive underpinning work at this London museum. This work was unanticipated, and had both time and cost implications for the project. Nevertheless, the target opening date was achieved.

It sounds pessimistic, but refurbishment projects rarely turn out exactly as expected. Unforeseen events frequently crop up once construction is underway – not least because accurate information about the building is often unavailable. Extensions to the programme are not unusual, and cost over-runs are also possible. However, identifying the risks in advance allows you to assess them, and estimate likely impacts, to make provision for contingency funding.

It pays to be cautious in planning completion and handover dates. You should always allow contingency time between completion and mission-critical dates. Much better to allow for some slippage before the busiest period of operation, or to plan how you would cope with later-than-expected handover. Make it clear to occupants, in particular, that the completion dates may change. If they have to move to temporary accommodation during the refurbishment, it is safest not to issue specific guarantees about when they can return.

All refurbishment projects should have emergency plans and, where appropriate, integrated disaster plans for both the site area and the occupied parts of the building. The main priority should be to keep occupants and others safe – if necessary by evacuating the area. Security guards, operatives – and anyone else likely to be on site – need to know whom to contact and what to do if there is an emergency. Circulating a simple “telephone tree” makes it easy for everyone concerned to know who to call first, and who to call if the first person is unavailable.

You should ensure that the emergency plans apply at night as well as during the normal working day.

1 Project planning

Survey data

Assemble the best possible as-existing data, but do not trust it.



Despite record drawings and site visits, the Sauchiehall shopping centre in Glasgow produced surprises. Stripping out false ceilings revealed beams that were not marked on drawings. They clashed with the new services layout, and in some cases deep beams had to be replaced by two shallower beams to allow duct space. This all added to the pressure on costs and the programme.

It is common to find divergences between “as-built” drawings and what actually exists. Changes to structures and building services often go unrecorded on drawings. This makes it close to impossible to assemble sufficient information for refurbishment from documentary sources. It is advisable to commission pre-contract surveys as early as possible, but it is very hard to identify everything in an occupied building, with finishes in place. Typically, the the need for accurate information about a building rises as you pass through inception, planning and tender to installation. Responsibility for acquiring information and the “ownership” of risks moves at the same time, from the client through the design team to the main contractor and ultimately trade contractors.

Services, in particular, can be very challenging. Incomplete knowledge of cable routes or pipe runs can lead to safety problems and the risk of cutting off services to the occupants and neighbouring buildings. Similarly, it is very hard to know whether asbestos is present in advance, raising serious safety implications (see Section 5).

There may also be useful information on local building control records held by the local authority. Employing contractors who have already worked on the building may help too – they may know things that are not recorded elsewhere.

Before work begins, record the condition of the building fabric around the area undergoing refurbishment. If damage is noticed during the refurbishment, these surveys (often called “dilapidation surveys”), help to establish whether it is the result of the building work.

Include maintenance tasks

Use the refurbishment to tackle maintenance tasks



At the University of East Anglia, 20 per cent of a refurbishment budget is typically regarded as long-term maintenance, rising to 30 per cent in some cases.

Buildings need regular maintenance as well as occasional refurbishment. If an area is being disrupted for refurbishment, it makes sense to deal with current or up-coming maintenance tasks at the same time, even if they are not directly necessary for the refurbishment project. Identify maintenance tasks at the start of the project so that they can be properly costed and planned into the programme.

On a similar note, planning to account for likely changes in the future, or “future-proofing” can make it easier to adapt to foreseeable developments. For example, providing extra cable space or the flexibility to re-configure lighting help provide the scope to meet tomorrow’s occupant needs.

Occupants could become irritated if a maintenance crew appears soon after a refurbished area is complete. Better to plan ahead and combine the refurbishment and maintenance, which often brings cost savings too.

1 Project planning

Take account of the Disability Discrimination Act

The Disability Discrimination Act (DDA) imposes new obligations on building owners, and refurbishment is an ideal opportunity to improve accessibility



The Royal Academy of Arts in London acted to improve access well ahead of the DDA. These ramps, alongside its main entrance, show that better access can be stylish and in keeping with a heritage building.

New parts of the Disability Discrimination Act 1995 are coming into effect. From October 2004, employers and service providers have to make “reasonable adjustments” to their premises to overcome barriers to access. Education providers must make the same changes by September 2005. BS 8300 offers guidance on “reasonable adjustment”*.

If your refurbishment project is classed a “material alteration”, Part M of the Building Regulations, which deals with access, will also apply. There is no exemption for historic buildings, although some compromises may be necessary when solving accessibility problems.

It is also essential to consider the DDA in relation to any temporary arrangements that are put in place for the building occupants during the construction process. The construction team needs to provide information and plan emergency evacuation that takes the needs of disabled users into account. It is wise to get advice from an access consultant. (See <www.nrac.org.uk> for how to contact an access consultant).

* See CIRIA's latest publication:
*Buildings for all to use 2 –
improving the accessibility of
public buildings and
environments (C610)*

Getting the contract right

The form of contract is critical in establishing cooperation and avoiding confrontation.



The Joint Contracts Tribunal produces standardised contracts suitable for different situations and divisions of responsibility. However, the choice of contract can be complicated, and inexperienced clients should take expert advice.

Contracts define the legal relationships between the client, the design team and the construction team. These contracts need to be clear and unambiguous. They should also ensure that risk is borne by the organisation best able to carry it – who is rewarded accordingly. There are many different types of contract, usually specific to particular procurement routes.

Where possible, use standard forms of contract (like those published by the Joint Contracts Tribunal). All parties should be familiar with the fine print. If a tailored contract is absolutely necessary, it is safest to rely on specialist advice from lawyers.

Inexperienced readers are advised to seek advice about the most appropriate form of contract to use.

Given the greater uncertainties of a refurbishment project, and in particular the difficulty of securing accurate as-built drawings, there is a strong case for using partnering-style contracts. Here, all parties commit to working in the best interests of the project.

1 Production planning

Where to find out more

Local Government Task Force guidance:

Top ten tips for a successful procurement process

<www.constructingexcellence.org.uk/sectors>

Joint Contracts Tribunal (publishers of industry-standard building contracts)

<www.jctltd.co.uk>

Constructing Excellence guidance <www.constructingexcellence.org.uk>:

Fact sheet – Partnering

Fact sheet – Supply chain management

Disability Rights Commission: website explaining DDA legislation <www.drc-gb.org>

BS 8300:2001 Design of buildings and their approaches to meet the needs of disabled people. Code of practice

Building Regulations Approved Document M: Access and Facilities for People with Disabilities HMSO, 2002

Consultation and participation in school building projects

The School Works Toolkit, published by School Works, 2003

CIRIA Publications:

C610 *Buildings for all to use 2 – improving the accessibility of public buildings and the environments*, 2004.

C611 *Safe access for maintenance and repair*, 2004.