A guide to commissioning sustainable architecture for community organisations

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- Planning Aid for Scotland
- Scottish Ecological Design Association
- Community Energy Scotland
- The Glass-House

As this document goes to press, the Royal Institute of British Architects is reviewing the standard architects' work stages. It may be that the work stage designations change in 2013 from those illustrated in this book. In practical terms, this is unlikely to impact on your project. Your architect should be able to assist you with any specific queries.

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John Gilbert Architects

Architecture+DesignScotland
Ailtearachd is Dealbhadh na h-Alba

COMMUNITY OWNERSHIP SUPPORT SERVICE
Development Trusts Association Scotland

Contents

Introduction

Across Scotland and the UK, more and more communities are planning their own places, working together to deliver new housing, community space and enterprise areas, and managing their environment. These projects are being undertaken by ambitious community groups made up of all sorts of people.

Advice and guidance on developing sustainable new buildings can be hard to find. This guide provides advice and assistance on the process of creating sustainable architecture that responds to its place, is wanted by the community and has minimal impact on the environment.

The guide will steer those who are new to commissioning buildings through the development process and act as a checklist for those with a bit more experience. It is not a substitute for employing experienced and knowledgeable professionals to help and guide you through the process, but it can help you to speak the same language as the professionals and to expect the same things as them from each step. It is principally aimed at communities in Scotland, and the references to regulations and further information are primarily for them. If you are using this outwith Scotland, regulations and information sources may be different.

The practical stages required to complete a successful project are laid out here step by step. All members of your professional design and construction team will recognise these stages, allowing you to focus on the issues that are most important to you without confusion.

Ambitious projects can bring communities together and it is hoped this guide will produce more grass-roots development projects in Scotland, more sustainable architecture and more communities with the facilities they need.

Preparing for the Project

Designing a building for your community, raising the money for it, and constructing it take some time. Many projects take more than five years. In order to get through this as smoothly as possible you should spend some time at the start of the project considering how your organisation will manage and run the project, keep people involved and, crucially, communicate with your design and construction teams.

Actions

- Consider funding streams – how to raise the money
- Consider who will manage the project from your side, and how they'll do it.
- Consider and choose a suitable contract – there are several different ways in which you can work with architects and builders
- Consider and choose professional advisors

Assistance

The following organisations exist to help communities and charities through the process of planning and development. They all have a lot of useful information, publications and advice to offer.

SUST.

The Sust. initiative aims to raise public awareness of sustainable design and the contribution it can make to delivering a sustainable future, and improve understanding of sustainable design for those commissioning new buildings. See: www.sust.org/

Development Trusts Association Scotland (DTAS)

Provides information, resources and a variety of contacts to help interested communities explore the benefits and relevance of the development trusts approach. DTAS also provides useful resources, training and limited support to communities wishing to establish a development trust. See: www.dtascot.org.uk/

Community Ownership Support Service (COSS)

COSS is a Scottish Government funded initiative to support community based groups to acquire and develop land and building based assets. This Scotland-wide, advisor-based service provides individual community groups with bespoke support packages. Support available includes advice, training, sign-posting and web access to information on good practice, toolkits and case studies.
See: www.dtascommunityownership.org.uk/

Planning Aid For Scotland (PAS)

PAS is an independent and impartial organisation, helping people shape their communities and improve the way people engage with the planning system. It offers free planning advice to community organisations and a mentoring service to help you through the initial stages of a project. See: www.planningaidscotland.org.uk/

The Glass-House

Provides free project support and design training to community groups which are involved in or are leading regeneration projects in their area. These projects could involve housing, public spaces, community buildings, play areas or facilities for young people. See: www.theglasshouse.org.uk/

Community Energy Scotland (CES)

CES is dedicated to supporting community-based organisations to benefit from renewable energy. It aims is to build confidence, resilience and wealth at community level in Scotland through sustainable energy development. It provides support and training specifically for communities on issues around renewable energy.
See: www.communityenergyscotland.org.uk/

Funding Streams

There are many possible funding streams for a project including grants from the Government, The National Lottery, charities and trusts. Most funding sources will want to see a business plan for the project, which shows that revenue from it will be enough to maintain the project in the long term. This may be a good point to start considering the energy performance of the building, as lower energy requirements will mean lower running costs.

Most funding bodies want to see structures that are built to last, make a number of positive contributions to the environment, are accessible to all sections of the community and at least meet current building standards.

The Budget

Funding for the project may come from the organisation's own funds, grants, loans or fundraising activities. The cost of the project will include a number of items:

- cost of building works
- VAT (if applicable)
- professional fees, usually expressed as a percentage of the building work's cost, including VAT, plus travel and expenses
- local authority fees such as planning and building warrant fees
- site investigations such as a topographical survey or digging trial pits

- contingency funds to tackle any unforeseen problems, which should be higher if dealing with a complicated site or refurbishing an existing building
- fixtures, fittings and furnishings

If you have engaged a quantity surveyor (QS), they should provide you with a cost plan for the project, outlining the costs associated with each part of the development. You should be clear what is included and excluded in this – for instance, professional fees.

Client-side Management

As the client, you will be a vital part of the design and construction team. Professionals and contractors will be employed by you to deliver the building you require. As a client you will have to:

- make decisions and choices, and communicate them to your design team
- enter into legally binding contracts for services
- issue and confirm instructions
- attend design team and site meetings
- pay bills and invoices on time
- discharge your responsibilities under the Construction, Design and Management Regulations (CDM) – the main laws relating to health and safety in construction.

In practice, for all but very small contracts, you should appoint a project co-ordinator from within your organisation to be the main point of contact for all communications. This means that one person has a view of the whole process, understands the responsibilities, and issues clear, consistent instructions. For larger projects this may equate to a part-time job in order to make the necessary daytime contacts and meetings. This does not mean the project co-ordinator needs to operate alone. They may still make regular reports to a committee and may need to call meetings at short notice to resolve particular issues or advise of a significant new development or risk. However there will be a considerable number of smaller decisions that will need to be made on a day-to-day basis. Your project co-ordinator should be given the freedom to make these decisions, with the organisation's support.

Finding Professionals

An architect, quantity surveyor (QS) and a structural engineer are the basic professionals you will need for a project. They should be used for anything bigger than a small extension. The architect is usually the leader of this team, and should be the first person you appoint. They may help you find the QS and engineer.

Initially, you may need to appoint a professional team to draw up a feasibility study telling you what can be done with your site and budget, and the process is more or less the same as that for appointing a team for the main project. You can choose to stay with this team, or you may choose to go through the appointment process again when it comes to the project itself.

The bigger the project, the more important the early involvement of a professional team becomes. Early professional advice is essential to make sure you get a realistic budget for the project, you understand what is achievable, and to assist you with drawings, reports and advice for funding bodies.

You will need to learn to work with a team over a long period of time and trust them to advise you on a lot of complicated matters. Choosing one team and working with them through the whole project will generally produce a better result and be the cheapest option, although you must be prepared to change if you are unhappy with the service provided. Trust and a good relationship with professionals will help you to negotiate fees and deal easily with any issues which may arise.

Title	Description
Architect	Often the lead consultant on a project, works with you to design and specify the details of the building. They manage the team and the whole project, help you find a contractor and get the necessary legal consents. They usually inspect construction work on site.
Quantity Surveyor	Assesses the capital costs of the project. They can also undertake ‘life-cycle cost analysis’, detailing likely running and maintenance costs. During building they will help the architect to value the work which has been completed to date – important for your builder’s payments.
Structural Engineer	Calculates the structural forces within the building and ensures it will be designed to withstand them. They usually undertake the engineering assessments of the ground on the site.

Title	Description
Interior Designer	If you have particular demands for the interior of the building, an interior designer may work with the architect to get things like furnishings exactly right.
Service Engineer	Responsible for designing services such as heating, ventilation and lighting. Usually required for more complicated buildings or where more complicated services are required.
Landscape Architect	If you have extensive outdoor space or an area of public space, a landscape architect can help integrate it into the design and make the outdoor spaces as good as the indoor ones.
Building Surveyor	A specialist building surveyor can offer surveying services including design and engineering. They are often used for small extension projects.
Project Manager	Project managers can assist on larger, complicated projects from developing the project brief to selecting, appointing and coordinating the project team. They can represent the client throughout the full development process managing the inputs from the client, consultants, contractors and other stakeholders.

Title	Description
CDM Co-ordinator	Responsible for advising you, the design team and the contractor, on health and safety matters. They are a legal requirement for most buildings.
Planning Consultant	Can provide assistance to an architect where planning permission is tricky or contentious. They help by giving a view of how the development fits into the local authority's planning strategy for the area, and can help to navigate through the bureaucracy of planning departments. They have often worked for local authorities. Many are trained and experienced in community consultation and community involvement too.
Clerk of Works	Can be appointed by the client for the construction phase, to make more regular (perhaps daily) inspections of the construction site than the architect. A clerk of works liaises with the architect and alerts them to any quality issues. Experience on larger builds shows they help keep work progressing quickly, minimise extra costs and maintain high quality.

Title	Description
Contractor	Leads the actual building of the project and usually employs sub-contractors to assist. They construct the building in accordance with the architect's drawings and instructions.

When commissioning professionals you should ensure that they are qualified in their field.

- Architects must be registered with the Architects Registration Board (ARB) and may choose to be members of the Royal Incorporation of Architects in Scotland (RIAS) or the Royal Institute of British Architects (RIBA)

  You can check if an architect is registered at: http://search.arb.org.uk/

- Quantity surveyors should be registered with the Royal Institution of Chartered Surveyors (RICS)

- Engineers should be registered with the Institute of Structural Engineers or the Institute of Civil Engineers

- All of your consultants should hold professional indemnity insurance.

An architect or QS should be able to help you find contractors, CDM co-ordinators and other consultants.

There are many different ways to find the right architects for a project. Any sizable project is likely to last two or more years, so it is vital to choose professionals you can work well with and who share your ambitions for the project. It's also worth comparing your project to typical projects the organisation delivers. A small firm working on a larger project is likely to bring all of its creativity and experience to a task, while the directors and senior staff of a large firm may not be able to fully commit time to a smaller project. On the other hand, an office should have sufficient resources to satisfy the demands of your project as well as do its other work. One important point: confirm at interview or at the tender stage who is going to be the key contact for that project and make sure you meet them before you make your mind up.

If you are likely to use any public funds in the project, you will need to show the funding agency you have achieved 'value for money' in the appointment of your team. This will apply to all professionals and your contractor. This means you will have to ask a number of architects to tender for the work. It is important you weigh up their proposals as a whole, on the quality of the proposals as well as the cost. Working on price alone might mean a company cuts its price too much, then cannot supply the level of service you expect. This can lead to complications later in the process. You should always check with your funding bodies what their rules are for appointing professionals and ensure your process complies.

You should be asking your team to supply the following information in relation to the project:

- experience working with community groups
- similar project experience
- the methods and resources they intend to use for the project
- their initial thoughts and ideas
- references from previous clients

You should recognise the amount of time that preparing a bid takes professionals, and you should ensure that you are only asking for relevant information to be used when making a decision about who to appoint. Smaller projects should require less information than larger, more complicated projects.

Sustainability

When choosing your team, you should consider their respective track records in delivering sustainable buildings on the scale you are considering and check to see if the staff who will be assigned to your project have any special qualifications or accreditations.

Examples of qualifications for designers and architects include:

- Accredited in Sustainable Design by the RIAS
- Accredited BREEAM Assessor
- Certified PassivHaus Designer
- Accredited Section 6 Certifier by the RIAS, BRE or NHER

For architects, working with a community organisation is often very different to working with professional developers. You should consider not just how the architects will deliver the drawings but how they will help your organisation decide what is the best building for you and your community.

Selecting Your Team

The following section outlines three popular methods for selecting your team. Depending on the project size, you should give professionals two to four weeks to prepare a proposal for you. A proposal for a feasibility study will take less time, and a full project will take more. For either, professionals will need to visit the site, organise a suitable team and understand what your project is likely to involve.

Negotiated Fee Bid

Issue an invitation to tender (ITT) to either a shortlist of architects or through a public advertisement. The architect should be asked to assemble a suitable team, demonstrate their experience, explain how they intend to carry out the work and give their initial ideas for the project. Ask them to propose a fee for the work. You should then invite a shortlist of teams to interview – three should be enough. This will help you assess how well they will communicate with you. Choose the winner based purely on the quality of their submissions. Once you have chosen,

you need to make sure you're paying a fair price. To do this you can take all of the proposed fees and work out the average fee. If the winning fee is within 10% of the average fee, then agree to that fee, otherwise open negotiations to get the winning fee bid to within 10% of the average fee bid. If negotiations break down with the winning team, go to the second-placed team and open negotiations with them.

Quality/Price Balance method

Issue an invitation to tender (ITT) to either a shortlist of architects or in a public advert. As part of that you would ask architects to assemble a suitable team, demonstrate their experience, explain how they mean to carry out the work, and give their initial ideas for the project. Ask them to propose a fee for the work. You should invite a shortlist of teams to an interview – this will help you assess how well they will communicate with you. In order to arrive at a winning team you would score quality and price separately and then add them together to find the highest score. The following balance between quality and price is recommended:

- 85% quality / 15% price – feasibility studies
- 80% quality / 20% price – innovative projects
- 70% quality / 30% price – complex projects
- 60% quality / 40% price – straightforward projects

Design Competition

Design competitions are obviously not suitable for finding a team for your feasibility study. They can provide a wide variety of ideas for taking a project forward, but there is a significant amount of time involved for all the practices taking part and there is a financial cost – the shortlisted practices should be paid a fee for doing the work. You should state the scope of the commission that will result from the competition and the level of fee for it. Either invite a shortlist of practices that you know to take part or advertise the competition widely. Invite people to fill in a pre-qualification questionnaire (PQQ) about their technical skills, experience and capacity. Using these responses, shortlist between four and six practices, and offer these a small fee towards the amount of time and money it will take them to prepare full designs for your project. Receive entries to the competition and choose a winner. You may choose to include a community exhibition as part of the judging process. Ensure you publicise the competition including the designs of those who did not win.

Further help and assistance

- Sust, part of Architecture and Design Scotland – www.sust.org/
- Royal Incorporation of Architects in Scotland – www.rias.org.uk/
- Scottish Ecological Design Association – www.seda.uk.net/
- Development Trusts Association Scotland – www.dtascot.org.uk
- Community Energy Scotland – www.communityenergyscotland.org.uk/
- Public Tenders Scotland – http://www.publiccontractsscotland.gov.uk/

CASE STUDY: Wasps Artists' Studios

Key Facts

- Location: Briggait, Merchant City, Glasgow and South Block, Merchant City, Glasgow (and six other arts buildings sites in Scotland)
- Type of projects: redevelopment of major city buildings into artists' studios, offices, shops, and exhibition and events spaces
- Type of contracts: traditional
- Original estimate of projects: Briggait £6.5m; South Block £3.5m
- Final cost of project: Briggait £6.8m; South Block £3.5m
- Time to completion from initial discussions: Briggait 10 years; South Block 3-4 years
- Was completion on time, late or early? Briggait 14 weeks late; South Block eight weeks late
- Out of 10, how happy are you with the finished projects? 10 for both

David Cook, the chief executive of Wasps Studios, has appointed professional teams for a string of projects across Scotland.

Wasps is a charity which provides working space for 750 artists and its projects include the £6.5m refurbishment of the old Briggait fish market in Glasgow as artists' spaces, and the conversion of the South Block tenement building in the same area for similar use.

On the Briggait project and others, the organisation short-listed architects who were then interviewed, along with other members of the team that the architects put together for the job.

Cook recommends a professional project manager (PM) on projects worth more than £200,000, saying: "If things go well you don't really need them but if things go wrong that's where they come into their own because they deal with construction and conflict on a daily basis."

For South Block, Wasps went one step further and appointed a project manager first as the lead professional. The rest of the team was appointed through competitive interview as sub-consultants to the project manager – putting the PM in charge.

This, says Cook, can give the PM – and thus the client – better control over what the architect does, and better control over changes to plans and changes to costs."Because of our budget situation, with a fixed budget, you can't afford to let go of change control.

“The biggest mistake inexperienced people can do is not to understand the links between change, time and money.

“Anything that impacts on the programme because you have changed your mind impacts on the budget.”

Where European grants are involved and competition rules apply, the primary appointment of a project management firm with the right approvals can also help streamline appointment of the rest of the team.

But the architect is still a key appointment, and while the design and cost will be important, Cook says the interpersonal element must be taken into account.

“It is vital to have a good relationship with the architect, and you have to feel that they listen to you. You have to ask if you get on with them – can they understand you, and can you understand them, can you talk to them?

“Some are quite design-led and just want to keep designing, and some are better at the contract admin side, and maybe don’t have the design flair.

“If you have a shortlist of architects go and see their existing buildings and talk to the users of those buildings. You have to ask if you get on with them – can you talk to them?”

The Briggait is a beautiful listed building in Glasgow's medieval quarter. Originally built in 1873, the Briggait was the city's fish market for over 100 years. It is now a stunning home to visual artists and cultural organisations.

Project Brief

Architects' Work Stage A

The project brief is perhaps the most important document in a project and the community's views and aspirations should be at its heart. The brief will evolve as the project moves on, becoming more complicated and detailed. It is therefore important to create an outline brief that is robust and clear so that it acts as a solid framework to which detail can be added. The project brief is something that can and should be developed collaboratively, enabling people to engage and support the project. The briefing process can take a long time to develop and is crucial to get right. The brief is usually in the form of a written document with photographs and illustrations.

Techniques for Developing the Brief

The brief should contain the hopes and aspirations of the community for your project. A good design team will creatively interpret this and respond to it in innovative and sometimes unpredictable ways that may bring added benefits to your project.

Vision for the project

Agree a vision for the project, describe who will use the building, the wider impact it will have on the community and what it might feel like to be in it. Think about what the place will be like in 20 years time. List the benefits for the community.

Involve the wider community in developing this vision – perhaps hold workshops for potential users or consult local community groups. Ask local residents to send you a postcard with something good about the place or describing their hopes and aspirations for the project.

Describe the site

Describe its history and what it means to the local community. Are there important buildings or spaces on the site or nearby, how do people travel to the site, and are there particularly sheltered or sunny spots? How does the site meet the street, are there areas that need some new landscaping, and what are the buildings in the area generally made of?

Walking round the site with a group of people can help them to understand the surroundings and avoid the confusion of looking at drawings. Try to include businesses, the police and local councillors as well as residents and users.

You could also build a big model of the local area and use this to start a discussion about what is needed and where it might all be located. Using this as part of a school workshop can be particularly rewarding. Remember to engage parents and teachers too.

Describe the activities

Outline the main activities that you would like to see in the new building, and describe the number of people who might be involved, any particular needs they may have, storage requirements and connected activities. Think about the requirements and ethos of these main user groups. Think about how the building will be used by different groups at different times and if these requirements might change in the next 10 or 25 years.

Ask potential users to help you with this. In particular ask them to prioritise activities and spaces. If you are upgrading or improving a building, or replacing one, you might ask existing users to describe their current activities and ask them what would make their activities better or easier.

Visiting buildings similar to the one you are thinking about can help you discuss features and spaces, and describe the ones you want. You should include pictures of these in the brief.

How should people be involved?

List ideas for involving people in the design, and list people and organisations who should be involved and ideas for consultation events. Forming a focus group of these people can help you formulate a brief and help steer the project at key points.

Planning Aid for Scotland produces an excellent guide with more details called ‘SP=EED’. It is available to download from its website and might give you some good ideas.

Checklist

By the end of this stage you should have a written document which outlines the proposed functions of the development and how you hope to achieve what you want. This brief could include drawings, photos, illustrations and text to:

- give your vision for the project
- describe the site
- outline legal and operational issues to do with the site (such as extent of ownership/lease)
- describe the activities taking place in the building, including ideas of what the spaces should feel like – photos, notes and drawings would help the team here
- show the people and organisations who should be involved in the design.
- give broad aspirations for sustainability – are running costs or using natural and local materials or meeting national sustainability benchmarks important to you?
- show timescales – your expectations for how long each stage should take
- give any other information and decisions made in relation to the design brief which you think could be relevant
- give a list of any related documents (such as a business plan) if they exist

This document will have more detail added and updated as the project progresses. It will be used to measure the success of the designs and the project as a whole on completion.

Further Assistance

- Sust, part of Architecture and Design Scotland – www.sust.org/
- Development Trusts Association Scotland Training and advice – www.dtascot.org.uk/
- Planning Aid for Scotland Mentoring Scheme – www.planningaidscotland.org.uk/
- The Glass-House Training – http://www.theglasshouse.org.uk/
- Community Energy Scotland Advice – www.communityenergyscotland.org.uk/
- Scottish Communities Project Fund – www.scpf.org.uk/

CASE STUDY: Newlands Community Development Trust

Key Facts

- Location: Romanno Bridge, Scottish Borders
- Type of project: new build community centre
- Type of contract: traditional
- Original estimate of project: £1.5m
- Final cost of project: £1.5m
- Time to completion from initial discussions: initial ideas date back to 2003. Activity started with lottery application and creation of NCDT in 2007. Building started and completed 2011
- Was completion on time, late or early? Early
- Out of 10, how happy are you with the finished project? 8-9

The threat of the closure of the primary school in the isolated community of Newlands was a call to arms for local people.

They came up with the idea of a community centre that would provide some extra facilities for the school but would also fulfill the need for a focus in a community where pubs and shops had disappeared.

The upshot was the Newlands Centre which opened in November 2011 alongside the newly refurbished school. However it wasn't a simple process to arrive at a brief for the design team.

Newlands Community Development Trust (NCDT) had to take on board the needs of local community groups, and the needs of the school.

And, if that was not complex enough, the newly-formed Trust also had to consider the fact that Lamancha, part of the parish it served, was also establishing a new community building of its own.

Numbers at the school were growing, resulting in the former gym hall and a portable building being used as a classroom. School meals were being cooked elsewhere and brought onto the site. The hall was to solve these problems.

At the same time the scheme could not be just about providing school facilities because funders would not pay for something the council should provide.

Sue Unwin, the NCDT treasurer, says the main aim was to have a hall were 100 to 150 people could sit down for an event, and where sports such as five-a-side and badminton could be played.

It also had to have a kitchen suitable for school use and a smaller space the children could use for dining, all of which meant extensive consultation with the Council in drawing up the brief.

Unwin says: “It was difficult and complex to come up with a brief because we had to take into account things like keeping the children and public separate, for child protection reasons.”

Open sessions were held for local people to contribute, and among the suggestions that went into the brief were an IT suite which can also be used by the children for lessons.

One idea to have a library was shelved because the Lamancha centre was to include one.

“It was very important that we took on board what Lamancha were doing,” Unwin added. “They were going to be finished before us, and the last thing we wanted to do was set up and because we were bigger and newer to be taking business off them.”

The council is now the Newlands Centre’s anchor tenant, paying for use of the main hall and cooking/dining facilities for the school.

Unwin’s top tip is to find people at an early stage to give professional advice: “The firm of architects worked for us on a deferred-fee basis to draw up a vision plan in the early stages, which we could use for consultations and funding bids. They went on to get the main design contract, but they were prepared to take the risk of helping us at an early stage.”

The Newlands Centre provides a general-purpose hall, a smaller hall, an IT and learning centre, meeting and conferencing facilities, plus changing facilities for the sports fields.

Feasibility

Architects' work stage B

Outcomes

In the early stages of a project it is important to establish what is needed, how much it is likely to cost, and how possible – feasible – the whole project is. This may be best achieved by appointing a small design team to undertake a feasibility study.

This would:

- include a 'desktop site investigation' in which ground conditions and the site's history are investigated by contacting the relevant authorities. The condition of buildings on the site is included, and it should include a site visit but no test digging.
- establish what services exist on the site, and what the access arrangements are
- establish how much space your project needs
- contact local authority planning officers to discuss proposals informally
- confirm the feasibility of the project financially, physically and practically
- set goals and standards for the project to achieve
- consider the types of buildings which could be used, and their implications
- prepare an initial budget for the works
- consider suitable procurement options – ways in which you can work with architects and builders – for the project

Feasibility studies are invaluable at the start of a project. They will flag up any serious problems with the site, produce an outline brief for the project, and give a sound basis from which to move forward.

The feasibility study is also useful for demonstrating the viability of a proposal to funding bodies. The Big Lottery calls a feasibility study an option appraisal, but includes similar tasks. It will provide information to put into the business plan, and help you understand the cost of constructing the building and how much income will be needed to maintain it. A funding body is likely to want to see drawings, a condition report (if an existing building is involved) and a cost plan before considering a project.

Timescales

As a feasibility study requires a lot of discussion and meetings with different people and organisations, it takes some time to do well. Expect it to take two to three months from setting up a team to getting a completed report.

Refurbishment and Rehabilitation

If you project involves an existing building, the feasibility study needs to consider the following issues:

- The condition of the existing building and any constraints this places on the development
- Any additional regulation such as listed building status or inclusion in a conservation area
- The options for reusing or remodeling the building

You should also discuss the cost assumptions with the quantity surveyor in detail. Redeveloping an existing building often leads to unexpected costs at the construction stage, and you need to allow a sufficient 'contingency' fund for this.

Self-Build

There are many communities who start projects aiming to build all or part of the project themselves, using skills and time available from community members for free or reduced cost. At feasibility stage, you should consider realistically the capacity you have in the community for self-build: the skills available and how much time people are prepared to commit to the project.

Remember it is possible to undertake an 'assisted self-build' project with specific contractors doing individual elements of the project. Coming to an initial view on the extent of self-build with your design team is important at this stage.

Community Engagement

Ensuring the community is effectively engaged in the design decision making takes time and effort, but it is well worth it to ensure the building is well used, looked after and loved by the community for a long time.

You may wish to look for professionals with a track record in working with communities, but you should note that genuine community engagement in the design process takes time. It should be allowed for in any fee negotiations with professionals.

Community consultation can be of several different types:

Type	Function
Information giving	Provides people with information to assist their understanding
Information gathering	Gains people's views on what the community needs
Consultation	Gets people's views on a proposal or series of options
Participation	Actively involves people in the decision making process

Type	Function
Collaboration	Is an active partnership between a group of people, sharing resources and decision making

At the feasibility stage the following techniques can be used to assist the community in giving their ideas and aspirations to the design team.

Technique	How it works
Design workshop (sometimes referred to as a charrette)	Your design team works with the community over a number of days, designing and discussing during the day, then exhibiting the results to the public in the evening. A lot of work is done in a short space of time but it needs total commitment.
Planning for Real	Using a scale model, or marking things out on site full-size, the design team and your group work with the community to examine options and gain consensus. This can also be good as a school workshop.
Interviews	The design team may interview potential users of the facility or a focus group to get information and ideas.

Technique	How it works
Open events	The whole community is invited to an event or exhibition. Usually a set of options is prepared for an open event, with people stating preferences and noting ideas that may have been missed.
Exhibitions	An exhibition of the result of the feasibility study near to the site will inform people of the progress and help get more ideas and options.
Community council presentation	Depending on the project, the local community council may be interested in hearing about the proposals and giving feedback.

Sketches of what the building could look like are useful at this stage but care must be taken to convey the fact that it is just an initial idea. Photos of similar developments can be useful here too.

Community consultation is a mandatory part of the planning application process for larger projects (over 50 houses or 5,000m^2). More information is included in the Planning chapter.

Sustainability

At this stage you should be setting targets for the development's sustainability, and seeing how those decisions affect both capital cost

and running costs. Refer to the next chapter – Sustainability Briefing – for more information.

Budget

At this stage a quantity surveyor should prepare a cost plan for the project. A cost plan is based on the total area of the interior floors of the building with a cost estimate for each type of construction or work. A project budget should contain:

- an outline budget for the building works based on similar projects
- VAT (if applicable)
- professional fees
- local authority fees such as planning and building warrant fees
- cost of site investigations such as a topographical survey or digging trial pits
- contingency funds to tackle any unforeseen problems
- fixtures, fittings and furnishings

Health & Safety (CDM)

This is now a major issue in the construction industry. As the client, you can be heavily fined or imprisoned if you break the regulations. Ignorance is no excuse. Health and safety law is laid down in the Construction (Design and Management) Regulations, abbreviated to CDM. Throughout construction industry literature you will see references to CDM – read it as “health and safety”.

For the most up-to-date advice see the Health and Safety Executive’s website at www.hse.gov.uk/construction. A quick guide to the Construction (Design and Management) Regulations can be downloaded from www.hse.gov.uk/pubns/indg411.pdf

At the feasibility stage, the most important decision is whether the project is large enough to require a CDM co-ordinator. If the work lasts longer than 30 days or involves more than 500 person-days of construction work then you must appoint a suitably qualified CDM co-ordinator at the start of the project. They will advise you on your responsibilities after this.

Throughout the project there are additional duties for clients of construction projects over and above what the CDM does. Ask your architect or CDM co-ordinator to explain them or consult the HSE website. They will be flagged up in the relevant sections in this guide.

Checklist

By the end of this stage you should have a written feasibility study showing the key issues to consider in taking the project further. There should also be initial sketch ideas for the project and a rough budget. In addition, ensure:

- you have a completed written feasibility study with preferred options identified

- any required business plan, including market research is complete
- funding sources for the capital and revenue costs have been identified
- legal ownership of the site has been established

Further Assistance

- Sust, part of Architecture and Design Scotland – www.sust.org/
- Development Trusts Association Scotland – www.dtascot.org.uk/
- Planning Aid for Scotland Mentoring Scheme – www.planningaidscotland.org.uk/
- The Glass-House – http://www.theglasshouse.org.uk/
- Community Energy Scotland – www.communityenergyscotland.org.uk/
- Scottish Communities Project Funding – www.scpf.org.uk/

Sustainability Briefing

Your prime concern is likely to be how the building will work from the point of view of the users. However, you should also be considering how the building will affect the environment, both in its construction and in its continued use. All buildings have an impact on the environment – it is important you define clearly how much you want to do to minimise that impact.

This information should be given at an early stage. It will affect the design of the building, its capital cost and its running cost in the future. You should continue to refer to your sustainability brief throughout the process. It may not be possible to adhere to all your ambitions but awareness of the brief will help to prevent too much slippage.

There are minimum standards on sustainability required by law in the 2010 Building Regulations. In addition, the Scottish Building Standards Section 7 on Sustainability lays down optional standards.

Bronze is the basic; Silver and Gold awards are for more environmentally-friendly buildings; and the Platinum award is for very high standards of sustainability, including zero carbon rating, which applies to buildings which produce no CO_2.

There are a number of other rating systems available to provide benchmarks for sustainability. These include:

- BREEAM – an internationally-known set of standards for sustainability in buildings. Very Good, Excellent and Outstanding standards look at energy and other sustainability measures within the site.
- EcoHomes or Code for Sustainable Homes – a BREEAM standard exclusively for housing developments.
- Passivhaus Standard – an increasingly popular certified building standard, applicable to any building type; it mainly considers energy efficiency.

You could use one of the standards above – BREEAM, EcoHomes, PassivHaus or the higher buildings standards ratings – and include them in your brief and instructions to the design team. However, there may be particular things you want to do as far as sustainability is concerned, and which you want to add in to the brief.

You may, for instance be concerned about embodied energy – the energy used to make, transport and even eventually dispose of the building materials, and although it may not be part of the standard you have decided to go for, you may want to minimise it. Equally you may be interested in taking extra steps over and above the standard you are trying to achieve to ensure healthy building materials with no toxic chemicals in them are used.

If you use any of the standards above, be sure to understand what is involved in them and what is the best level of that standard for your project. Getting independent assessment and certification that you have met a standard may be expensive. Check if a certificate is needed by your funders or the planning authority.

The table below gives lists areas you may wish to consider and sums up the various standards that can be applied to them. Use this to develop a brief for your design team and to assess any proposals submitted to you.

		Minimum Standard	Best Practice	Pioneering	Further Help
Operational Energy	**Building Standards Level**	**Bronze**	**Silver/Gold**	**Platinum**	
	Heating, insulation, and energy generation	Typical projects meeting the basic standard under the 2010 building regulations have good insulation (at least 100mm in the floor, 140mm in the walls and 300mm in the roof), high-standard double glazing, and an efficient heating system. Refurbishments should aspire to this standard but clearly there may be practical limits to achieving this with older buildings. A solar panel for water heating is expected as part of Building Regulations	Modern best practice is to create buildings where demand for heating is very low and met by a small heating system and regular activity in the building. The German PassivHaus Standard can be used to attain this. It can be applied to all building types and is based on a highly insulated airtight building with triple glazing, and mechanical heat recovery ventilation (MHRV). A solar panel is normally required to meet the PassivHaus standard.	Zero carbon status – where no carbon is produced in running the building – will require Passivhaus levels of insulation and air-tightness, based on a highly insulated airtight building with triple glazing, and mechanical heat recovery ventilation (MHRV). Zero carbon status is likely to require a significant area of on-site renewable generation such as photovoltaic cells or a wind turbine. You could also consider communal heating and hot water systems with a low carbon energy source, such as a suitably designed biomass district heating system	Building Standards Division of Scottish Government Sust Passivhaus Trust

		Minimum Standard	Best Practice	Pioneering	Further Help
	Energy Standard	New buildings should aim to use a maximum of 60 kilowatt hours of power per square metre (kWh/m²) per year for space heating. Refurbishments should aim for about 100 kWh/m²	Passivhaus new build standard is 15kWh/m² for space heating and a total of 120kWh/m² for all energy needs. The refurbishment standard is 25 kWh/m² for space heating and a total of 120kWh/m² for all energy needs.	Passivhaus new build standard is 15kWh/m² for space heating and a total of 120kWh/m² for all energy needs. The refurbishment standard is 25 kWh/m² for space heating and a total of 120kWh/m² for all energy needs. On-site energy generation should be designed to cover this annual load.	Passivhaus Trust AECB
	Cost/benefit	The better insulated and more energy efficient the building is, the lower the cost.	UK examples of PassivHaus standard buildings show a 5% to 20% increase in capital costs compared to 2010 Building Regulations standard buildings, but with total energy bills for a typical 90m² house being about £20 per month.	Research suggests reaching the zero carbon standard will cost between 20% and 30% more than a 2010 standard building to build but substantially less to run. With renewables you could even have an income.	
	Monitoring	None	Smart meters (which record the details of when energy is used and send it to your supplier for billing) will be fitted	Smart meters fitted with display in prominent location so it's easy to monitor. Post-occupancy evaluation to measure the building's energy use against the design predictions.	Useable Buildings Trust

		Minimum Standard	Best Practice	Pioneering	Further Help
	Solar Design	Main rooms have view to outside. Manual internal blinds	Building form influenced by desire to maximise use of daylight. 80% of rooms have a view of the sky. Window size and orientation designed to capture useful daylight. Provide some level of external shading with a strategy to deal with future hotter summers: solar control glass, mid-pane blinds etc.	Building form influenced by desire to maximise use of daylight. Solar gain – heat from the sun – calculated and window sizes precisely calculated depending on aspect and room size. Shading precisely calculated for location and climate.	Passivhaus Trust Scottish Solar Energy Group
Sustainable Materials	**Reclaimed content**	10% is usually achieved with standard materials.	30% reclaimed materials.	60% reclaimed materials. Structure designed so it can be taken down and re-used elsewhere if necessary.	Zero Waste Scotland - WRAP Tools
	Toxicity	No measurement or consideration of toxicity of building materials – other than standard safety regulations – used in the project.	Uses low toxicity materials where practicable. Minimises use of plastics, uses natural insulation throughout, substitutes low smoke and fumes (LSF) cables for PVC, uses paint and timber products low in volatile organic compounds (VOCs).	Uses low toxicity materials where practicable. Minimises use of plastics, uses natural insulation throughout, substitutes LSF cables for PVC, uses paint and timber products low in volatile organic compounds (VOCs). Monitor indoor air quality as part of a monitoring scheme once the building is in use.	Scottish Ecological Design Association - Design Guides

		Minimum Standard	Best Practice	Pioneering	Further Help
	Embodied Energy	No measurement of embodied energy. There is a preference stated for locally-sourced materials.	Materials of high embodied energy minimised and key elements sourced locally. These standards reinforced through detail in drawings and special clauses in the specifications.	Design based on low embodied energy materials. Each element's embodied energy is measured and where possible, replaced with something with lower embodied energy. All material sources mapped and transport minimised. These requirements are included in the drawings and specification.	Inventory of Carbon and Energy – University of Bath
	Material Reuse	Preference for standard sizes of elements such as steel beams/ columns or precast units	Future flexibility of building considered. High-grade materials designed for recyclability – for example, using lime mortar which is easy to remove from masonry. Different material layers made identifiable or visible so they can be separated.	Flexibility of future use demonstrated by providing drawing of example of how the parts of the building could be reused. Avoid composite materials. Uses fastenings for easy dismantling – for example, steel is work bolted together rather than welded.	Zero Waste Scotland – WRAP Tools Scottish Ecological Design Association – Design Guides
Waste and recycling	**Site Waste**	Contractor to produce site waste management plan (SWMP) to identify likely waste products and how they can be separated on site or after removal.	Establish the likely flow of waste production during design and set targets early on. Waste reviews on design team meeting agendas. Divert 75% by weight of non-hazardous project waste away from landfill.	Uses Modern Methods of Construction – the modern name for prefabrication – throughout design to achieve net zero site waste on site. Give contractors strict zero waste targets and get them to report on this at site meetings.	Zero Waste Scotland – WRAP Tools

		Minimum Standard	Best Practice	Pioneering	Further Help
	Operational Waste	Adequate space for storing recyclable waste once the building is in use.	Set up a recycling system involving space for separating and collecting recyclables once the building is in use. Provide on-site composting facilities. Encourage users to recycle.	Establish recycling facilities on site for the surrounding community, encourage community members to recycle and establish communal composting.	Local council departments Zero Waste Scotland
Sustainable Transport		Meeting the local car parking standards and including a bike rack.	Give detailed consideration to the transport options available to visitors and staff. Preparation and adoption of a green travel plan for the facility, including options such as new bus stops, a car club or lift sharing. Cycle facilities to include a rack, and space to change and store clothes / helmet.	Consider the location of the facility based on the highest walking and public transport accessibility for visitors and staff. Minimal car parking requirement, bike racks, showers and storage lockers provided together with car pools and lift-sharing. Prepare and implement a green travel plan.	Local Planning Department Scottish Ecological Design Association
Water	**Rainwater and sewerage**	Sustainable urban drainage system to minimum standards required by planning and building control.	Manage and creatively use rainwater and runoff within the landscape and local ecosystem. Harvest rainwater for use in toilets within building.	Manage and creatively use rainwater and runoff within the landscape and local ecosystem. Harvest rainwater for use in toilets within building. Consider composting toilets or use of on-site reed-bed sewage treatment.	Scottish Environmental Protection Agency Scottish Ecological Design Association – Members

		Minimum Standard	Best Practice	Pioneering	Further Help
	Internal water	Meeting building control standards.	Provide a water butt for use outside. WCs of average flush volume to be not more than of 4.5 litres per minute (l/m) and taps flow rate to basins to be not more than 6 l/m.	Provide a water meter; water butt, WCs of average flush volume to be not more than 3.5 l/m, taps flow rate to basins to be not more than 4 l/m. Rainwater harvesting system designed to provide at least 20% of water required for toilet flushing	Building Standards Division of Scottish Government AECB
Land and Wildlife		Biodiversity and wildlife plans to meet local planning guidelines, if any.	Protect existing ecological features and provide a biodiversity plan which meets local planning guidance. Use native species in planting schedule.	Engage a landscape architect, protect the existing ecological features and develop plans to increase the biodiversity through a variety of habitats, on site. Use only native species in planting schedule.	Landscape Institute Scotland
Active living		Meet Disability Discrimination Act and building regulations on accessibility.	Accessibility is well integrated into the design, public space is designed for a variety of people of differing abilities, and a variety of uses; pedestrian accessibility is considered.	Extends the concept of accessibility beyond the building. The streets approaching the building are checked to see if there are accessibility issues and pedestrian accessibility is a key idea behind the design. Public space including roads is designed for multiple uses, with robust materials and its 24-hour use is considered.	Designing Streets – Scottish Government Policy on Street Design Sustrans

		Minimum Standard	Best Practice	Pioneering	Further Help
Community Involvement		Exhibit the proposals and ask for feedback from the community.	Include a number of stages of community consultation throughout the design process. Feedback to the community through existing local media.	Engage a wide section of the community in the design of the facility, set up a dedicated website with news of the project, ensure opportunities to see the proposals and work in progress and send out emails or newsletters	Planning Aid for Scotland Development Trusts Association Scotland Community Energy Scotland
Optimising efficiency		Staff trained at building handover and provided with operation and maintenance manual	Staff involved in commissioning. Non-technical user guide produced and all staff inducted. Energy use fed back to users	Post-occupancy evaluation of the building and adjustments made to user behavior or building where required. Interactive online user guide. Energy use on interactive display screen and online.	Useable Buildings Trust BSRIA Soft Landings Guidance

Further Assistance

- Sust, part of Architecture and Design Scotland - www.sust.org/
- Scottish Ecological Design Association - www.seda.uk.net/
- PassivHaus Trust - www.passivhaustrust.org.uk

Further specific advice can be sought from the organisations listed in the table above.

CASE STUDY: Whitsome Ark

Key Facts

- Location: Whitsome, Berwickshire
- Type of project: new community building
- Type of contract: traditional
- Original estimate of project: £500,000
- Final cost of project: £490,000
- Time to completion from initial discussions: seven years
- Was completion on time, late or early? about two months late
- Out of 10, how happy are you with the finished project? 10

"Although it's saving carbon, and perhaps saving the planet, the way people are convinced to do environmentally friendly things in a project is if it's saving them money," says Ian Jarvie.

Jarvie was project treasurer for the Whitsome Ark, a village hall designed to help keep the community afloat. It has spaces for activities and meetings, and a village shop, post office and cafe.

The Ark's heating system cost £45,000, nine times as much as a conventional system, but the place is now heated for a fraction of the cost of an oil-fired boiler.

To achieve this, the village hall building committee first packed as much insulation as they could get into the building. They used conventional insulation on cost grounds.

The actual heat comes from a heat pump, using solar thermal panels and ground source heat from three deep – and expensive – boreholes.

Jarvie was at the forefront of persuading the hall committee to make the building as sustainable as possible. "They had to be persuaded, and it was a case of: 'If you want it, Ian, you raise the money for it' – which I did!

"We were looking at an economical way of heating the building, but had we not been able to raise £40,000 extra we wouldn't have gone for it."

Jarvie also kept an eye on more general sustainability issues and warned against assumptions: features such as push-button taps and lights

operated by infra-red sensors may now seem standard in public buildings, but, he says, unless you specify them, builders won't necessarily fit them.

He dropped some ideas: his plan for a reed-bed sewage system was scrapped after finding the village sewer ran through the site – and used a reed-bed system anyway.

But since the building was finished in 2009 other green improvements have been made. Photovoltaic panels now generate electricity to help run the heat pump – mass production means the panels' price has dropped dramatically since these were first mooted at the design stage.

Jarvie is also now looking at a system to pump water heated by the solar panels in summer back into the ground to store the energy for the ground source heating to tap into during the winter.

And his best tip for those who want to make their building as sustainable as possible? Knowledge is power. He says: "Always take as much advice as you can get, but do a bit of research yourself so you can evaluate the advice."

The Whitsome Ark project has high levels of insulation, a ground source heat pump and solar-thermal panels. Since the completion of the building a further photovoltaic solar panel array has been added.

Outline Proposals

Architects' work stage C.

The feasibility study will have established if development is possible and what type of building might be appropriate. This stage of the project should narrow down the options to one and answer many of the questions on the design. You may wish to start the design process again based on the information you have learned in the feasibility study – perhaps the site has changed – or you may simply wish to confirm the decisions already made and move on quickly to firmer proposals. At this stage the general design of the project should emerge. Things to be completed include:

- layout drawings of each floor of the buildings, including likely furniture arrangements, drawings of each side of the building (elevations) and cut-through drawings of the building (sections) in important areas.
- outline specifications of the major components of the building
- refined sustainability targets appropriate to the site and building
- initial rough calculation of the energy use and energy cost of the building

Timescale

Depending on how complex the project is, this stage may take between two weeks and two months. You should allow for a number of meetings between yourselves and the design team to ensure your wishes are clear, and that you are happy with the direction the design is taking. On large projects you might want regular monthly or fortnightly meetings. On smaller projects there may be more flexibility in timing meetings.

Design

This is the key stage for the overall design of the project. You should be sure your ideas and preferences are conveyed to the design team at this stage.

It's important to have good design in order to get good value for money: bad design will prove expensive in the long run. Good design means buildings which are enjoyable and easy to use.

You might choose to use the following methods for discussing this with your team:

- gathering pictures of ideas and projects that you like, to discuss with your architect
- asking your architect to gather a selection of images of similar projects, and other ideas
- using a focus group of users for the design team to test ideas and proposals on

- visiting examples of buildings you like to find out what is successful and how those ideas could be adapted to suit your needs. Bear in mind your design team may charge extra for this service.

You may go through a number of options during this stage, but by the end you should have floor plans of about the right size and shape, sketch elevations, and general specification for the materials to be used on the project.

A building warrant from the local authority to say the proposed building is safe and complies with regulations will be needed before construction work begins. Your design team should be taking this into consideration now, but are unlikely to consider this in detail at this stage.

You should have another look at the brief that you produced. Check if the proposals are in line with it, and decide if you need to adjust the brief itself at this stage.

Your quantity surveyor could do a cost check against the feasibility study budget at this stage. With more detail at this stage – and possibly more unconventional items identified – they may be able to refine the cost.

Design Team

At this stage you are likely to need an engineer as part of the design team. He will tell you if you need the following investigations, and carry them out:

- desktop site study – if not done at the feasibility stage, it will be needed now. This is an office-based exercise which checks historical maps and records to find if previous uses of the site could cause a problem, if there is any known contamination, what services run across the site, and what the geology and ground composition is.
- site investigations – digging pits into the site and testing the ground for things such as how it will bear the load, how water flows through it, and what it is composed of.
- a topographical survey (often abbreviated to topo) provides a precise map of the site. It will show any buildings or trees on it, and give accurate information on slopes and hills.

For your architect to consider how the foundations, walls, floors and roof of the structure will be built, they will need the help of a structural engineer.

You might wish to engage a landscape architect to help design any open space on the site. The way the open space looks may be an issue in the planning application, so this can be important.

Refurbishment and Rehabilitation

Further survey work may have to be done at this stage by the architect and team on any existing building on the site, whether it is to be retained or demolished, to check on any issues which may arise with it.

You should ensure that by this stage, your structural engineer has written a full condition survey for the property and is involved in working on the design with the architect.

Health and Safety (CDM)

If your project construction phase is likely to last longer than 30 days or involves more than 500 person-days of construction work you have a legal duty to appoint a CDM co-ordinator. You should appoint them at this stage, for the duration of the project. Your design team will be able to offer a number of firms to contact or you can find a list of qualified professionals on the Association for Project Safety's website.

The CDM Regulations set down the standards expected of a competent CDM co-ordinator in terms of qualifications, experience and membership of relevant organisations. Your CDM co-ordinator should be qualified and experienced in providing CDM services for the size of building you are proposing. Registered members of the Association for Project Safety have passed basic competency exams and may have undertaken more advanced qualifications and maintain records of their experience.

Statutory Planning

Your design team should speak to the local authority planning department again at this stage with a view to getting guidance on the design. They may also talk to other council officers such as highways engineers to confirm design principles of things such as roads and access. If your project is large, contentious or complicated, it may be worth considering an application for 'planning permission in principle' at this stage (this used to be called outline planning permission). This requires less detail (and therefore less work for all concerned) and establishes if the proposed use will be accepted on your site.

If your project is over 50 houses or 5,000m^2, community consultation on your design is mandatory as part of the planning process. If this is the case, 12 weeks before you submit your application, your design team should contact the planning authority and fill in a pre-application consultation form (PAC) stating what consultations you intend to do. In this consultation you must at least hold a public exhibition of the proposals and meet the local community council to outline your proposals. You may prefer to keep your commitment to this minimum – you can always do more than you have stated, should you wish to.

Irrespective of the size of your development, you or your design team should look to see what the council's Local Plan says about the site. The Local Plan has maps and policies governing development for the whole of the council area. If your proposals conform to the Local Plan policies, there is a high chance they will be approved, but if they don't then your architect will have to present a compelling case for them to the local council.

Sustainability

At this stage your design team should be considering issues such as:

- how the building will fit into the surrounding area
- the shape of the building to minimise heat loss

- orientation of the building and windows so sunshine will help warm it
- how windows will work to minimise artificial light
- materials to be used in the construction
- the carbon output of heating and ventilation systems
- water use in the building
- landscape design
- an initial appraisal of annual energy requirements
- how waste can be minimised in construction and use of the building

You should review the sustainability aspects of the original brief and consider if they are being implemented as part of the design.

Community Engagement

Depending on the level of community involvement up to this stage, the following table outlines ideas suitable for this stage of design work. More ideas can be found in Planning Aid for Scotland's SP=EED document available from their website.

Method	How it works
Focus group	Establishing a focus group is a good way to help the architects develop the design with a group of interested people.
Design workshop (sometimes referred to as a charrette)	A design workshop at this stage would look at more detailed issues for the building than at the feasibility stage. Consider carefully who to invite to the daytime workshop to ensure progress can be made on the important issues. Invite the public to evening exhibitions or 'crits' of the work done during the day – it's a good way to keep lots of people involved.
Planning for Real	Using a scale model, or marking things out on site full-size, the design team and your group work with the community to examine options and to reach consensus.

Method	How it works
Open events	A set of options can be prepared for an open event, with people stating preferences and noting ideas that may have been missed.
Exhibitions	Exhibiting the options considered and the preferred option at this stage may help gain support in the community and support for funding bids and planning applications.

Checklist

- Confirm the lead consultant for the design team and take advice on other advisors required. You will need to formally instruct your design team in writing to begin work on the project and outline the brief required
- Review your obligations under the CDM regulations and appoint a CDM co-ordinator if legally required
- If the design team did not do the feasibility study, offer a copy of all background documents used in compiling the study for them to review
- With the design team, decide on regular communication methods such as meetings and scheduled telephone calls
- Confirm the choice of site and verify legal ownership. Give boundary information and any conditions of access to design team
- The design team should confirm they have had discussions with statutory authorities such as the planning authority
- Undertake investigations such as a detailed topographic survey and desktop engineering surveys if not already done
- Clearly convey design preferences and an unambiguous brief for the project to your consultants. By the end of this stage you should have a decided on a single clear option on which to base a full planning application
- Your design team may ask you to write a short note confirming the design is to your satisfaction and that they are to proceed to the next stage. This is normally referred to as ‘signing off the design’.

CASE STUDY: Duneland Ecovillage

Key Facts

- Location: East Whins, The Park Ecovillage, Findhorn, Moray.
- Type of project: co-housing cluster of 25 dwellings plus office/ workshops and communal facilities
- Type of contract: traditional
- Original estimate of project: initial cost for 15 houses was expected to be £1.5m
- Final cost of project: total build cost will be around £3.8m
- Time to completion from initial discussions: 15 years from original discussion; five years since community consultation began, with expected completion in November 2012
- Was completion on time, late or early? Completion is expected to be on time.
- Out of 10, how happy are you with the finished project? 9

A two-year community consultation process was at the heart of plans for the East Whins development at Findhorn.

Duneland Ltd had more than one community to deal with. First there was the Findhorn Foundation – described as an experiment in conscious living, a learning centre and an ecovillage – and its associated cluster of developments, charities and businesses, which includes Duneland.

Then there was the wider, more traditional community of Moray, including the villages of Findhorn and Kinloss. As managing director of Duneland Ltd until May 2012, Jonathan Caddy says without the “Listening to the Land” project the development could have been very different.

The Listening project brought together 25 stakeholders including neighbouring land-users, homeowners, the local community council and even the local youth group leader.

“We got stakeholders together to go out onto the land, looking at the past history and looking at the ecology, the different separate areas. At one point we put up a marquee on the site for a week with displays: we were looking at history and geology even.

“What Listening to the Land did was it allowed time for people to comment on the appropriateness of the planned use of the site.”

One of the major results was the density of development: “We had 25 houses that could have been spread across the whole area – it could have been like suburbia.”

Instead, feedback from consultees meant terraced property and compact accommodation – to a high sustainability specification – to let as much of the site remain undeveloped as possible.

Caddy warned against expecting consultation to necessarily result in a smooth ride: in fact objections which resulted in a public inquiry came from within the wider Foundation community of which Duneland is a part.

Caddy says: “In some ways we opened ourselves up to being shouted at but in a community context it is vitally important that this happens.

“It doesn’t in the end mean that everyone’s going to agree with the decisions made, but we bent over backwards to make sure that what we do is appropriate.”

Once outline planning consent was gained, John Gilbert Architects was appointed to put together detailed proposals.

The architects continued with community engagement, including an open community meeting and feedback session, and discussions with stakeholders, to make sure the community’s wishes were not forgotten as the pace quickened and the demands and pressures of construction took over.

Before finalising the construction they pegged out the footprint of the building on site for the Duneland team to look at and make sure they were happy.

Caddy’s top tip for community engagement is communication: regular printed and email bulletins for neighbours within, and around, the Foundation ecopark warned of disruption during building, such as earth tremors through the sand when a heavy piece of equipment was being used.

A website was also regularly updated about the development. “Building is a political process: it involves the people that surround any development and active engagement is extremely important,” Caddy concludes.

Duneland held a three-day design workshop as part of the design stage of the project. Key members of the community and local stakeholders were invited to work with the design team to form the initial proposals.

Design Development and Planning Application

Architects' work stage D

This stage is primarily about preparing the drawings and information needed for a planning application. The vast majority of development projects require planning permission, even if they only change the use of an existing building or site.

Timescale

The timescale for this section depends entirely on the size of the proposals. It may only take a couple of weeks to prepare drawings and information for a small extension, but it can take months for a complex building. Every plan, cross-section and elevation of the building needs to be considered in detail before a planning application can be submitted.

Once the application has been submitted it is normal for it to take two months to process. It can take significantly longer depending on the issues it raises. The planning authority should tell you if your application is likely to take longer than normal to process.

How Planning Applications Work

The planning process is essential to ensure development happens in the right places. Most developments require planning permission. If you are in any doubt, your project co-ordinator or the architect should write to the planning authority with drawings or sketches to ask if planning permission is required.

The process makes sure new uses for land and buildings are appropriate for the location. The theory is that the system helps to plan for the development the country needs, while protecting the natural and man-made environment. It is meant to ensure developments are sustainable – that planning decisions will not damage the environment for future generations.

Scottish Parliament and the Government set the framework for planning. The Parliament makes the planning laws and the Government issues statements of policy – rules which local planning authorities (usually councils) must take into account when they draw up their local plans and take planning decisions. In national parks and conservation areas, planning restrictions are tighter than in other areas and even minor changes may need planning permission.

Planning law defines development as: "The carrying out of building … or the making of any material changes in the use of any building or other land."

Anyone can apply for planning permission for any land provided they notify the owner and any tenants that they have submitted an application. This means you can apply for and obtain planning approval before buying a piece of land.

Decisions about planning applications must take account of the local authority's development plan for the area and must also consider the effect the proposal might have on the environment and the local community.

The council must put details of all valid applications in its statutory register. This lists all current planning applications and past decisions. The register must be available for viewing at all reasonable hours. It is normally kept at the council's main office.

Either the council's planning officers or its planning committee (made up of elected councillors) will decide an application. The process chosen varies from council to council.

There is often some confusion about what councils can take into account when they consider comments on development proposals. Councils cannot reject a proposal simply because a lot of people are against it.

Only objections relevant to planning rules can be considered. Examples include: traffic problems generated by the proposed development; the effect a development might have on the environment; and the effect the proposal might have on the appearance of the area.

Other issues such as the effect a development might have on property values, the nature of the specific applicant, or any moral or ethical issues, cannot normally be taken into account.

The key question for the planning system is whether the proposed use of the site would be acceptable in land use and environmental terms. This means issues such as increased noise, litter and nuisance to local residents, and increased parking difficulties and traffic congestion, are all valid concerns.

Irrespective of the views of your design team or the planning officer, it is prudent to make no assumptions that planning permission will be granted until the permission is actually issued.

Sustainability

You may wish to include a brief sustainability statement with your planning application outlining the environmental benefits and environmentally-friendly features of the project.

Signing Off

It is normal for the design team to ask the client to 'sign off' the drawings before the planning application is submitted. You should have the opportunity to review all of the drawings and be happy with the proposals at this stage, and have assessed them to ensure they meet your requirements. If you have to debate this at a planning committee you should make sure that the design team know this and have the opportunity to attend and describe the scheme in detail. Major changes

at this stage may cause frustration and delay so keeping everyone informed is a key role for the project co-ordinator.

You should also check there are no major changes to the cost plan – your quantity surveyor will be able to help you with this with a quick review of the drawings. When you are happy you should send an email or letter to the design team instructing them to submit the planning application. It is normal for the payment for the application fee to accompany this.

Planning Application

With your permission, your architect will usually prepare the planning application. Legislation requires that applications for planning permission include certain information. This is includes the following:

- a description of the development
- the name and address of the applicant and agent (usually the architect)
- a postal address of the site or a description of the location of the site
- a certificate of ownership – a document you sign saying who owns the site – and copies of notifications you have sent to the owners and/or tenants, and lessees
- a plan which clearly identifies the location of the application site
- other plans and drawings necessary to describe the proposed development
- the planning application fee

Applications for more than 50 houses or 5,000m² require a design and access statement with the planning application. This is a simple report in layman's language setting out the nature of the project and how it will work. It will be help planning officers and councillors understand the application clearly. It is good practice for all applications, of whatever size, to be accompanied by a short report explaining the reasons behind the design, measures taken to ensure sustainability, and what community consultation has been undertaken, to help planning officers and councillors to understand the proposals.

For more information and an easy-to-use planning fee calculator go to: www.eplanning.scotland.gov.uk/

Community Engagement

In addition to keeping the committee or board of your organisation up to date, the community will want to know how things are developing, after any initial consultation.

The council will notify all the neighbours of the development and may take a small advertisement in a local newspaper to publicise the application. Many objections to planning applications are received because people are not aware of the proposals until this point. If you think there are likely to be objections, hold a public exhibition to allow people to debate the proposals.

You might consider a newsletter to be distributed to neighbours and the wider community with images of the proposals, asking them to write in support of the application.

If you have used a focus group to assist you with the proposals, you should allow them to see the drawings before they are submitted to the council, to ensure they stay onside.

Fees

As soon as the planning application is submitted, you usually pay about 30% of the total fees due to the various professionals. These fees will be due irrespective of the outcome of the planning application. Normal negotiations with the planning authority are usually included in architect's fees. If extended negotiations or extensive revisions to the proposals are needed, you should expect the design team to claim additional fees.

Check with your funding bodies about provision for paying professionals and agree any cap on fees in advance. For example, Big Lottery makes a specific allowance for design team fees up to securing planning approval.

Checklist

- You have provided all information on the site to the design team
- The drawings have been signed off and the planning application payment made
- You have provided information to your committee, focus groups, neighbours and other members of the community
- The planning application has been submitted

If you are having difficulty getting planning approval, you can ask the project's supporters and the local community to write to the planning authority giving their backing for the project. It can also be useful to meet your local councillors and brief them on the project and its benefits.

Further help and assistance

- Planning Aid for Scotland provides a free, impartial and professional advice service to help you understand and deal with the planning system. The service is provided by volunteers, who are all fully qualified and experienced planners based in Scotland. It has a free helpline on 0845 603 7602, also see:www.planningaidscotland.org.uk/
- Scottish Government Planning Portal - www.eplanning.scotland.gov.uk/

The Main Contract

The main contract is the contract between you and the builder carrying out the construction. There are many ways this can be structured, but it is a vital document. It is the legally binding commitment under which your builder promises to deliver your project to you as the client. It is common for building projects to throw up surprises once building work starts – structural quirks or unexpected ground conditions, for example. These can mean changes to the design and the cost. The best way of preparing yourself for this is a sound written contract, designed to manage such events fairly from each party's point of view.

Once you have worked out exactly what you want through preparing a design and an outline specification, you must consider carefully the type of main contract you wish to use. For clients without previous experience of building projects, on schemes of up to £5 million, three main types of contract should be considered:

- The **traditional contract** is still the most common form of contract for small and medium-sized projects. The client will normally commission an architect-led team to prepare outline designs and specifications, obtain planning permission, then draw up detailed designs and specifications. The building work is then put out to tender, based on the completed design work, and normally the contractor offering the best price is hired. The contractor is likely to use a range of sub-contractors for actual building work. The architect instructs the builder and becomes the contract administrator, (CA) acting as the link – and sometimes arbiter – between the contractor and the client.

- A **two-stage tender** is similar to the traditional contract, but involves a builder at an earlier point. The client will normally commission an architect-led team to prepare outline designs and specifications, and ask builders to tender a rough price based on these – the first stage. Normally the contractor offering the best price is hired. The contractor can then have an input on the detailed design and specification of the building, using their experience and knowledge of materials and similar work to come up with practical, cost-effective ways to deal with design and specification issues. Once the detailed design is completed, the builder has to re-tender – the second stage – and the price may vary from his original one, although more details of costs – open-book accounting – are usually given to ensure you understand how the price has been arrived at. (It is possible to change builder at this point, but you will have to pay the original contractor for work done so far, and as far as possible in the original tender process you should have ensured you are happy with the contractor.) The builder then carries out construction. The contractor is likely to use a range of sub-contractors for actual building work. The architect instructs the builder and

becomes the contract administrator, acting as the link – and sometimes arbiter – between the contractor and the client.

- **Design and Build** has several variants, but it essentially means that in the construction stage the builder has sole responsibility for the project. As in the two-stage tender, the client will normally commission an architect-led team to prepare outline designs and specifications. However the client then asks builders to tender an exact price based on the outline design and specifications. Normally the contractor offering the best price is hired. The building contractor then takes sole responsibility for the delivery of the project. The contractor draws up the detailed design and specification of the building. They may use an architect – possibly the original designer of the building – but essentially it is the contractor's responsibility to ensure you get your building, and they deal directly with you, the client. This form of procurement is particularly useful for fairly simple or standardised buildings. It is not usually suitable for refurbishment or conservation projects.

The following table summarises the factors for and against each option. You should discuss the type of contract with your architect and quantity surveyor to ensure you get the right one for your project.

Type	Speed	Quality	Flexibility	Certainty	Competition	Responsibility	Risk	Summary
Traditional	Not the fastest method. Usually necessary to have all information and permissions at tender stage, so can be held up by planning and other bureaucracy. No work can start until all design details are finalised.	Contractor is wholly responsible on site for achieving the standards required by the client. The architect inspects the site regularly to ensure this is delivered.	Client controls design and any variations to it to a large extent.	The cost and time the job will take are fixed before building work starts. Design changes can be made but they can increase costs. There is clear accountability and cost monitoring at all stages.	Competitive tenders are possible for all items – if a sub-contractor can do a job cheaper than expected, the contractor can pass this saving on to the client.	Clear-cut division between design and construction without the confusion which can arise where there is design input from a contractor.	Generally fair and balanced between the parties. If surprise factors arise – such as unexpected ground conditions – the builder has a duty to deal with them at minimal cost; the client is expected to bear that cost.	Benefits in cost and quality but takes more time. Generally accepted to produce the best-quality buildings.

Type	Speed	Quality	Flexibility	Certainty	Competition	Responsibility	Risk	Summary
Two-stage Tendering	Faster than the traditional contract as the builder can plan work and sort out any construction problems at an earlier stage.	Contractor is wholly responsible on site for achieving the standards required by the client. The architect inspects the site regularly to ensure this is delivered.	Client controls design and any variations to it to a large extent.	The cost and time the job will take are fixed before building work starts. Design changes can be made but they can increase costs. There is clear accountability and cost monitoring at all stages. As the contractor is involved in the design, buildability issues – how practical the design is – should have been ironed out earlier.	Competition at stage one, but not at stage two. Open-book accounting should prevent inflation of price at stage two. You may want to gain agreement with your funding bodies before proceeding with this route.	The contractor has input on the design, so some confusion can arise. However there is no doubt that final legal responsibility for the design rests with the architect.	Generally fair and balanced between the parties. If surprise factors arise – such as unexpected ground conditions – the builder has a duty to deal with them at minimal cost; the client is expected to bear that cost.	Benefits in cost and quality. Time could be reduced compared to traditional contract.

Type	Speed	Quality	Flexibility	Certainty	Competition	Responsibility	Risk	Summary
Design and Build	Relatively fast method. Construction time cut because the builder does not have to wait to start work until all the details of the design have been sorted out.	Client has no direct control over the contractor's performance. Contractor's design experience may be limited. Client has little say on the choice of specialist sub-contractors. Contractor can substitute materials for their own, often cheaper, alternatives.	Virtually none for the client once the contract is signed, without heavy cost penalties. Any flexibility in developing details or making substitutions of materials is to the contractor's advantage.	There is a guaranteed cost and completion date but the design details have not been finalised at the time when the client commits to building. The contractor is only bound by the outline details and can make fairly major changes once he has been appointed.	Difficult for the client to compare proposals without detail – for instance one price might include expensive wooden windows, the other cheap plastic, but this information may not be in the bid document. No benefit for the client if the contractor gets cheaper rates for specialist work and materials.	Can be confused – for instance if a client makes a detailed specification for some element of the building and it turns out not to work, the contractor can blame the client. The client's representative has little power during construction.	Lies almost wholly with the contractor. If surprise factors arise – such as unexpected ground conditions – they are expected to foot the bill. However to stay in budget they can cut costs elsewhere.	Benefits in cost and time at the expense of quality and control

Each of these types of contract has a standard, lengthy legal form, which should be used to minimise the risks to both parties. For each type of contract it is possible to embed sustainability into the project to ensure it meets minimum standards and performance criteria, and passes testing regimes and inspections.

Self-Build

If you have chosen to undertake self-build elements of the project, you may be choosing to become the main contractor yourself. You will need to consider items such as training, management, health and safety, temporary works and site equipment. You should take specialist advice on this, particularly if you will need to employ other people on the site.

Checklist

Before you instruct your design team to move on to the technical design of the project you should decide the type of main contract you wish to use.

CASE STUDY: Wasps Artists' Studios

Key Facts

- Locations: Briggait, Merchant City, Glasgow and South Block, Merchant City, Glasgow (and six other arts buildings sites in Scotland).
- Nature of projects: redevelopment of large city buildings into artists' studios, offices, shops, and exhibition and events spaces.
- Type of contracts: traditional
- Original estimate of projects: Briggait £6.5m; South Block £3.5m
- Final cost of project: Briggait £6.8m; South Block £3.5m
- Time to completion from initial discussions: Briggait 10 years; South Block 3-4 years
- Was completion on time, late or early? Briggait 14 weeks late; South Block eight weeks late
- Out of 10, how happy are you with the finished projects? 10 for both

The Wasps organisation has built up a wealth of experience in dealing with building work and construction professionals over a string of developments in the past 15 years.

The charity provides studios for 750 visual artists in Scotland, specialising in converting older buildings. Among the largest conversions are the former fish market known as the Briggait, in Glasgow's Merchant City, and the South Block tenement building in the same area.

Chief Executive David Cook says it has stuck to the traditional contract for projects because it fits the organisation's needs.

Schemes such as Briggait and South Block are largely refurbishments, and the traditional contract gives it much more control over the building process.

For artists' facilities – perhaps more than anywhere else – the detail, the design and the overall feel of the finished building are vital.

"With design and build you are at some point giving a completed design to a contractor and saying go and build it, and THEY make the compromises to the design and make the changes," says Cook.

Inevitably, he says, where there are four or five different options the builder will not always go for the option the client might have under a traditional contract.

That's fine, he says, if you are dealing with something simple, where details of finish and design are less important – for instance a community recycling facility, in essence just a big industrial shed.

But, he says: "With refurbishment you can't know the full scope until you go on site and once you take off roof coverings, and the floor and wall covering, you take down a ceiling, you find rot and structure that's not as the historical drawings tell you.

"The design has to be flexible to deal with that, when there are lots of unpredictables, and a traditional contract where you make those decisions makes this easier to manage."

He says cost, quality and time form a triangle: where your needs fall in that triangle will determine what sort of contract is best. With a traditional contract you will get much more control over quality; with other forms of contract, a timescale is built in, and costs can be fixed.

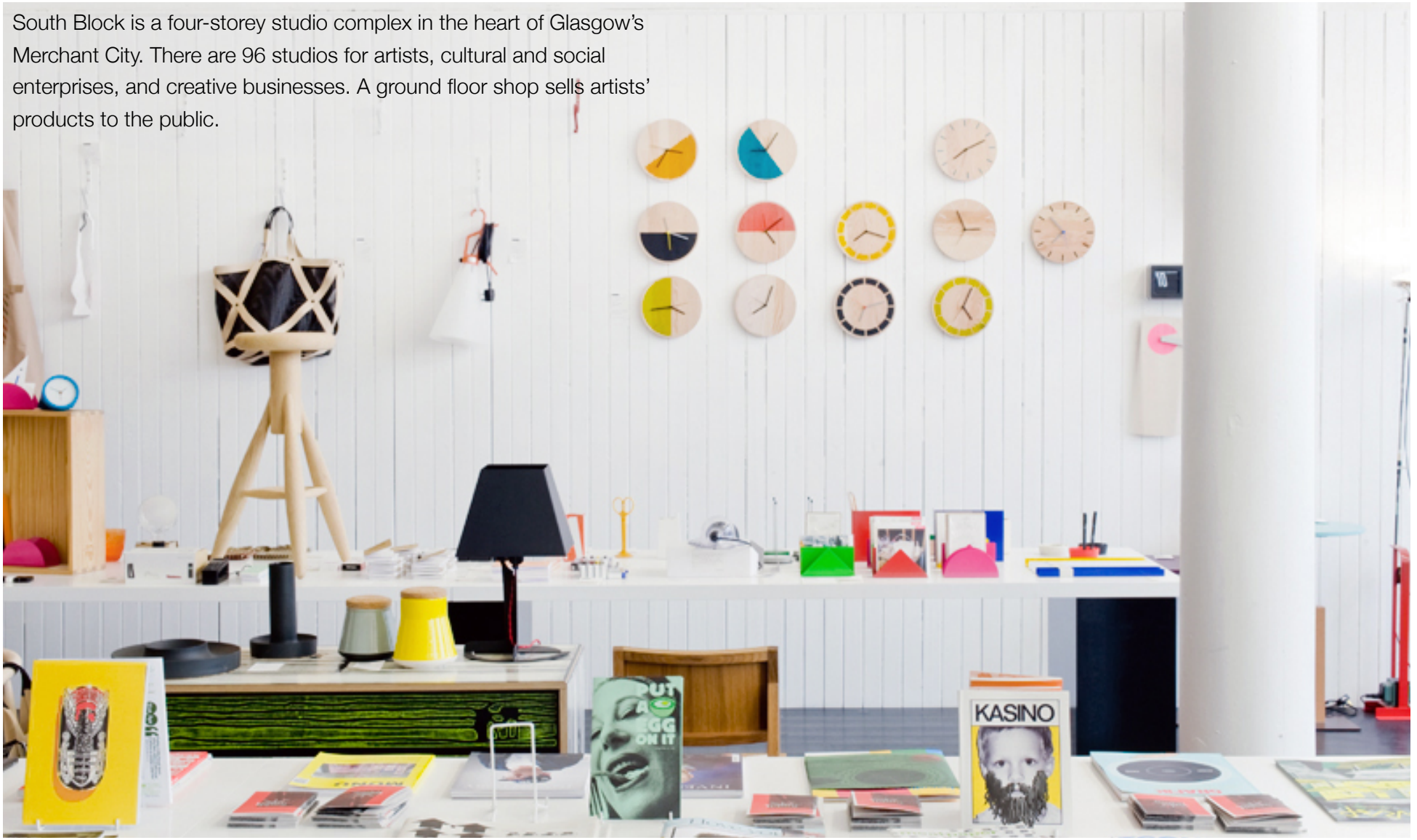
For those who do use a traditional contract, he says, the vital thing is to keep on top of the detail both of design and budget.

On one major Wasps project, the builder asked for £350,000 on top of the original budget.

Cook says good negotiating skills together with an awareness of all the factors involved got this down to £40,000, and with a touch of brinkmanship he persuaded the builder to reach a compromise without going to arbitration.

He adds: "Building things like our studios is often about compromise, understanding what is essential. You will have to cut something, so knowing what is essential is important, so you can strip out the inessentials when you have to."

South Block is a four-storey studio complex in the heart of Glasgow's Merchant City. There are 96 studios for artists, cultural and social enterprises, and creative businesses. A ground floor shop sells artists' products to the public.



Technical Design

Architects' work stage E

If you are using a traditional contract or a two-stage contract, your design team will do the technical design and apply for a building warrant. You will finalise details and ensure the building you want is exactly what you will get. If your contract is design and build, the contractor will do the technical design and apply for a building warrant, and there is likely to be far less flexibility for you – you can only insist on what was in the original planning drawings, and in your contract with the design and build contractor.

Outcomes

This stage is when most of the details of the building and how it is constructed are sorted out. The actual materials to be used, and who manufactures them, should be decided. The way the heating and ventilation will work and the details of the landscaping should be decided.

At the end of this stage, the building warrant application will be submitted for approval.

This is where it is important for your project co-ordinator to keep control and maintain an overview of the project. Details are likely to take a large amount of time to consider: they may need to spend lengthy periods going through documents and meeting the architect. At the same time this is likely to be the point in the project where your project co-ordinator is involved in funding bids and other essential work: they may need to step up the amount of time they set aside for the project, and they may need extra support.

Timescale

If you want to move forward quickly, the first part of this stage may be done while you are still negotiating planning approval. However, if the design changes significantly as a result of negotiations over planning permission, your design team may have wasted some of its work. This may mean extra cost. Regular meetings between you (the client) and the design team at this time are important to make sure everyone is happy with progress and details.

Depending on the project's complexity, it can take between three and eight weeks to prepare drawings for this stage, and between six weeks and three months for the local council to process the application for a building warrant.

Review the Drawings

This is a good point to review your original brief and confirm everything you specified has been included and that the drawings represent the building you want. In particular consider the ancillary spaces: is there

enough storage space, is there plenty of space for hanging coats, where does the cleaning equipment get stored etc. Double check spaces and functions against the brief. There may have been changes to the plans during the planning process and you should make sure there is no remaining doubt over these. You should understand that from this stage on any changes you, as a client, ask for will involve extra work, for which your design team is likely to charge you.

If you have any doubts now, speak to your architect and design team: changes later will cost more.

Community Engagement

This is a good time to consult those who will use the building on details which matter to them. This could include the building manager, users, residents or future staff. Arrange a meeting for them to go through the drawings with the design team and look at issues such as what floor finishes will be used, how the interior will look, location of sockets and television points, and the controls for operating things like the heating and ventilation system. Your design team should be able to obtain samples of the key materials for the meeting. Getting down to the practicalities and talking about the building in use can generate fresh enthusiasm among users for the scheme.

When you are happy with the plans you should tell your architect in writing to start preparing information for a building warrant application.

Building Warrant

All buildings must be built to a minimum standard, as set out in the 'Technical Standards' guide published by the Scottish Government. The same applies to changes and conversions of buildings. Very minor work and repairs are generally exempt from the building regulations, but for most work you must get a warrant, demonstrating your building is up to this minimum standard. It is an offence to start building work, which requires a warrant, before getting a building warrant. Your design team will need to submit:

- detailed plans
- specifications of materials
- an application form
- a fee, which is roughly proportional to the cost of the works

Your design team will know all about this but if you wish to know more contact the building control department of your local authority for more information or consult www.sbsa.gov.uk

Sustainability

This is the stage when the initial targets for sustainability have to be translated into detailed plans. You should make time to meet your design team – in particular the architect – and go through the sustainability objectives of the project and the draft drawings and details. You can then

make sure all of the issues are addressed in the detailed design. Refer back to the sustainability chapter for the main issues to consider.

The biggest thing to do at this stage will be choosing materials. Your design team should be able to get you samples of all of the materials they plan to use, and find articles and other written material about them. The project will be gaining momentum and urgency at this point, so it is important to keep sight of your sustainability objectives despite these pressures.

Tests which the building should pass once the work is complete should be agreed at this stage. They may include:

- airtightness tests
- acoustic tests
- thermal imaging tests

Beware of changes in the design at this stage. In particular, if changes are required by building control, this may affect how the design matches your brief and the sustainability aspects of the project: for instance, a change in window size or location could affect the way sunlight helps heating and lighting. Remember to ask your design team if the changes will affect the building performance or sustainability credentials.

At this stage you should be considering applying for any specific grants which will pay to make the project more environmentally sustainable.

Self-Build

You should have a very clear idea at this stage of the work that is required, the processes that will be undertaken and the skills and time you will need to enlist.

It is important to work with your design team to ensure that the building has been specifically designed with self-build in mind, using the skills available to you and minimising skills that the community does not possess. For example, if you have no joiner, avoid using timber cladding – perhaps use brickwork. You should also begin to plan your work schedule and plan the length of time that each element will take. Be generous with the time allowed.

Community Engagement

This stage is predominantly a technical one, so if you are undertaking further consultation now, be sure it is with a group who have been involved from early on and have already had their say on the basic principles of the building: debating big suggested changes is pointless now. A focus group is perhaps the best sounding board. They will need time to consider any drawings issued to them.

This doesn't mean the local community can't be kept up to date with the development. This could be a good time to send out a newsletter to the community updating them on fundraising and timescales. If you have a website, you can publish progress reports. Your design team should give you key drawings to publish.

The design team should make a presentation of the proposals to your organisation's board or committee at this stage, bringing samples of the materials and components to be used in the structure.

Costs

Your quantity surveyor should update the cost plan at this stage and make sure the detailed design is still within the budget. They should also prepare a cashflow chart showing how much money will be needed for each month of the build.

CDM

The architect should ensure your CDM co-ordinator is invited to design team meetings and gets up-to-date drawings, but bear in mind that you bear ultimate responsibility for ensuring safety is considered. The CDM co-ordinator and the designers will draw up a 'design risk assessment' outlining the main safety risks in the construction and maintenance of the building and how to deal with them; you should be able to review this document with the design team.

Fees

At the point when the building warrant application is submitted you will usually be expected to pay 55% of the design team's fees. You will also have to pay the building warrant fees. Check with your funders in advance to ensure this can be honoured and notify the team at the outset if there are constraints on fees at this stage.

Checklist

- Building warrant drawings have been reviewed with the brief and sustainability objectives in mind
- Project co-ordinator has 'signed off' drawings before building warrant submission
- CDM co-ordinator has all relevant information
- Cost plan has been updated

Construction Information

Architects' work stage F/G

If you are using a traditional contract or a two-stage contract, your design team will carry out this stage. If you are going down the design and build route, the contractor will carry it out.

Timescale

Before embarking on this stage, you should have planning approval or be confident of getting it; you should also be confident of getting your building warrant. This will help avoid costly work being wasted. It can take up to eight weeks to finish construction drawings, depending on the complexity of the project.

Sustainability

The fundamental principle at this stage is to make absolutely clear what you want in terms of sustainability. In a traditional contract, construction information is the basis on which builders tender; in a two-stage contract it is the basis on which your builder's price will be finalised. Your design team should ensure sustainability targets are clearly stated on the drawings, in the specification and in the preliminaries or prelims. Prelims are a lengthy document which sets out additional responsibilities for the contractor; these include health and safety matters, sustainability tests, and anything else not covered in the contract and drawings.

There are now ready-made clauses that can be included in contract documents to ensure sustainability requirements are met. These include targets, the method of measuring targets and whose responsibility it is to fix any problems. Clear, co-ordinated documentation should ensure the building can be built as sustainably as you want it to be.

When considering your list of contractors, look into which local contractors or sub-contractors have expertise and experience in sustainable building, and consider adding them to the tender list.

Checklist

This stage is about producing the complete 'instruction book' that details every aspect of the construction of the building. Under traditional procurement this information is the basis on which a number of contractors are invited to tender. The main things produced at this stage are:

- a full set of construction drawings – typically 30 to 40 for a single house, but significantly more for complicated buildings
- a full specification detailing every component of the building with references to tie them to the drawings
- a 'bill of quantities' which outlines all the materials required
- preliminaries (prelims)

- specific information about any self-build elements
- the health and safety policy, known as the ‘pre-tender health and safety plan’
- the only matters that may not be specified are what are known as ‘contractor designed sections’: these are often minor aspects of the construction such as pipework which the architect is happy to leave to the builder to sort out so they can use their contacts to get the best price.

Tendering

Architects' work stage H

Checklist

When you tender a project, most contractors will say their price only applies for a 90-day period, after which it could change. Before you put the work out to tender you should be sure you can commit to starting within this timeframe, so make sure of the following:

- you have funding in place or close to confirmation, so work can start and you can pay everyone as the need arises
- the drawings properly illustrate the design you wish to have built, you and your organisation have looked at the detailed specification, and you are happy it meets your requirements
- you have full copies of drawings and specifications from other professionals such as engineers
- you have a 'pre-tender health and safety plan' prepared by the CDM co-ordinator
- you are happy the design and tender documents meet the sustainability objectives outlined in the original brief
- you have all the land ownership in place and the contractor can have full access to the site
- planning permission has been granted and you have a copy of the certificate
- your are confident the building warrant will be issued before you want to start work on site
- consider professionals required whilst the project is on site, in particular the appointment of a clerk of works or project manager (see chapter on Construction)

Tender Report

Your funding body may require a tender report from your quantity surveyor, to show that a competitive tender has taken place. This report and the contract documents may need approval by your funding body before you can formally accept the tender.

Fees

Issuing the tender to contractors is usually the point at which the total paid to various professionals should be brought up to 75% of their expected final fee.

Finding a Builder

Tendering for a builder is a vital stage of the project. You should be totally confident they will do their best to deliver a quality building, on budget and on time.

As with choosing a design team, it's not just price that matters: among the reasons for selecting your builder should be confidence in the quality of their work. It may be that the cheapest option does not provide you with best value for money. You should draw up a list of criteria with your design team to ensure you get the builder you need. You might want to ask:

- Is the builder's financial standing good?
- Do they have a good track record in delivering similar-sized buildings?
- Do they have a good track record in delivering sustainable buildings?
- Have they previously delivered buildings on time and on budget?
- Will they be willing to stick to your time schedule?
- Do they employ apprentices and people who live locally?
- What specific qualifications will the site staff involved in the project have?

Timescale

This stage may take two months to complete. It is important everyone has enough time to understand the work required and prepare a suitable price.

Contractors generally need four to six weeks to do a proper job of pricing a project. If you allow less than this, you may find at a later date that they did not look at the project in enough depth or missed key aspects of the tender.

If your project is over a certain size and funded by public money, you may have to abide by European procurement rules (called OJEC). There are minimum periods of time required for advertising and tendering in these rules. Your funding bodies will tell you whether they apply.

Options

There are a number of options for seeking tenders from builders for your project. For publicly-funded projects over a certain size, European procurement rules on how to advertise projects may apply. They change regularly, so you should take advice from your quantity surveyor and funding bodies to ensure your tendering abides by them and is fair, legal and transparent.

Options for tendering include:

- Open tendering, advertised on a website such as www.publiccontractsscotland.gov.uk or www.constructionline.co.uk. You receive bids from firms which believe they are capable of doing the job. Any number might submit bids.
- Pre-qualification questionnaire (PQQ) and tender. You draw up a list of possible builders: if public funding is involved you are likely to have to advertise to find these. You then ask these firms to tell you their financial status and experience relevant to the project. Then you select a shortlist of, say, six builders whom you ask to price the work.
- Interview and tender. You select a shortlist of builders; if public funding is involved you are likely to have to advertise to find these. You invite them to tell you their financial standing and experience, interview them, and finally ask the best three or four to submit a price for the project.
- Before choosing a particular builder, you should visit one or more of their recently completed projects and speak to the client to get a reference.
- Once a builder is chosen, you should of course ensure you have written agreement on all the important aspects of the contract.
- When everything is sorted and agreed, remember to set aside time to actually sign the contract with the contractor.

Community Consultation

You may want mark the point at which you are ready to start work by telling the community, issuing a press release and offering the local press a photo opportunity. A good option here can be to get the people who will use the building on site to pose for pictures.

Further Assistance

- Federation of Master Builders - www.fmb.org.uk/
- Constructionline - www.constructionline.co.uk/

Construction

Architects' work stage K

Overview

This section is potentially the most exciting, most rewarding and most frustrating, all at once. As client you have certain duties and obligations under the contract. Your relationship to the design team will change and you need to be aware of how problems are dealt with.

As there are several different types of contract that you may have used, the advice in this section is for guidance only. Consult your architect and design team for the specifics of your project.

For the highest quality in the finished building, you should retain a full design team until the site works are complete.

Architect as Contract Administrator

In addition to the duties the architect has had up until this point in the contract, they are likely to be named as the contract administrator or CA. A 'full service fee' quote from an architect will include this. The contract administrator is bound to deal fairly with the rights and duties of both the client and contractor, acting impartially between you and the contractor to ensure the contract is completed as agreed.

It is the architect, as contract administrator, who issues all instructions and deals with variations to the contract or building, and certifies that the work has been completed in accordance with the drawings. They inspect the site regularly to ensure the building work is in accordance with the drawings.

They also determine any extensions of time or additional money that the contractor is due.

Remember they have a duty to act impartially and in accordance with professional standards in doing this work. The architect still retains, separately, responsibility for the design, and in fact as contract administrator may have to slap himself on the wrist if problems arise in this area!

Under a design and build contract the client hires an 'employer's agent' who takes on much of the work of the contract administrator, and may be an architect or quantity surveyor. Design and build contracts have different procedures and clients have less scope to influence the builders work once the project is on site.

Project Manager

Your architect is likely to have led the project up until this point. Depending on the size and complexity of the project and the skills of your own project co-ordinator, you may wish to utilise the skills of a trained

project manager while the works are going on. This person would work directly for you, the client, and be given the responsibility for looking after and instructing the design team. The architect would still instruct the contractor in most cases.

The benefits of using a project manager is that more time might be dedicated to the organisation of the team and the project manager may have specialist knowledge and experience. They may be particularly useful on large complicated projects. You should choose a project manager carefully as they will be representing your organisation. Make sure everyone understands what the limits of their authority are.

You can choose to use a project manager earlier in the process but this would duplicate many aspects of an architect's role.

You should discuss the appointment of a project manager at tender stage, so they are in place and briefed by the architect by the time the contractor is in place.

Clerk of Works

Your architect, as contract administrator, will have a duty to inspect the work on the site at regular intervals. This may be every fortnight. However, you may want to employ a clerk of works to inspect the work at more regular intervals, perhaps daily. The clerk will be someone with considerable experience of the building industry, such as a site manager or former building control officer. Your architect can help you find one but they usually work directly for you, the client. A clerk of works liaises with the architect and alerts them to any quality issues together with reporting on progress to you. Experience on larger, complicated builds shows they make a significant contribution to keeping work progressing smoothly, minimising extra costs and maintaining high quality.

You should discuss the appointment of a clerk of works at tender stage, so they are in place and briefed by the architect by the time the contractor is in place. If you have taken the design and build route, you may still wish to appoint a clerk of works who would report to the employer's agent and the client.

Other Professionals

Your quantity surveyor (QS) will visit the site regularly and ensure the contractor is only paid for work which has been completed. The QS will check with the architect to ensure that they are happy with the work.

Your structural engineer will continue to advise you about structural aspects of the project. Remember, there may be unexpected discoveries made, particularly during the digging of the foundations and services. These may mean adjusting your plan after work has started.

A clerk of works will make frequent visits to the site and report to the contract administrator on progress and any problems with quality and workmanship.

Payment

The client has an obligation to pay the contractor for work done, and payments must be made on a regular basis during the work. The

contractor will pass a valuation of work completed, usually each month, to the QS and CA. The QS will check this with a site visit, and once he and the CA have checked the valuation, the CA will issue you with an 'interim certificate' saying how much the contractor is due. You are obliged to pay this within the time set out in the contract. Failure to do this for any reason is a breach of contract: the contractor can take action against if you do not pay on time.

Instructions and Variations

All instructions and variations to the design should be issued by the CA, or employers' agent. If you want to change something, discuss it with the CA as soon as possible. By issuing instructions directly to the contractor yourself, you may be breaking your contract, and it could mean higher costs.

Pre-start Meeting

The CA or employers' agent will call a pre-start meeting for all those involved in the project. This will make sure everyone is familiar with the people they'll be working with, understands the communications procedures, and knows all the details they need to about the job. It will also help make sure the construction programme is co-ordinated.

The pre-start meeting sets the tone of the project. Be clued up on the issues that are likely to arise, be firm if need be – but also bring some cakes or biscuits. You will all be working together for a significant period of time!

Site Visits

You will have given the contractor 'possession' of the site, which legally allows them to manage and control it for the duration of the project. This means you must ask permission to visit the site, so they can ensure your safety. The contractor should welcome site visits, but you should arrange them in advance. You are likely to have to wear protective clothing such as boots and a helmet.

Site visits for larger groups must be discussed in detail with the contractor. There may be a particularly good time to see the building which minimises any health and safety issues.

Remember that only the CA should issue variations and instructions, so avoid the temptation to direct the contractor while on site. Instead, keep a list of points and discuss any concerns with the CA.

Variations

The contract will be very specific on the process for changing the building during this stage and getting a cost for that variation. Discuss this with your CA before committing yourself to any changes. Note that sometimes variations are required due to new information found once the project has started, for example if when digging the foundations the grounds is found to be worse than anticipated. Such changes may mean decisions have to be made 'on the hoof' by the CA and project co-ordinator without lengthy discussion by your organisation.

Delays

Unexpected difficulties crop up on most projects: new problems are found in the ground, bad weather drives builders off the site, or there are hold-ups because of communications difficulties. As a client you should be aware of what is likely to cause a delay and respond to any requests for information or instruction as soon as possible. The contract will outline what reasons for delay will be acceptable and it is for the CA or employer's agent to determine what's caused a hold-up and whether it's reasonable. This aspect of the building work can obviously be contentious, but remember: the CA has a duty to act fairly between both parties.

Disagreements

Any disagreement should be dealt with as quickly as possible, and it's in everyone's interest to keep it amicable and avoid confrontation. Written records and agreements, together with professional advice, reduce the possibility of misunderstanding and disagreement. If there is a serious disagreement with the contractor, these are the routes that can be taken to resolve it, in ascending order of cost and complication:

- Mediation – an independent mediator helps you come to an agreement which everyone can accept. This is likely to cost the least time and money.
- Adjudication – is a legal procedure for the resolution of disputes outside the courts minimising use of lawyers. Both parties in the dispute refer to an adjudicator who, as an expert in construction, takes a robust view of the arguments, and has to make a decision within 28 days.
- Arbitration – is a costly legal procedure in which an arbiter or judge reviews evidence and arguments, including legal arguments, set out by opposing lawyers, to come to a decision. This determines the rights and obligations between the parties involved, and is binding.
- Legal proceedings – settlement of the dispute through a full-blown court case. This is usually very expensive and time consuming.

Community Consultation

Make sure the builder lets the CA know if there are phases of the construction which may be noisy or generate a lot of lorry movements or other potential irritants to the community. Telling local people these things are about to happen will help avoid any complaints. Make sure there is a contact point for complaints – your project co-ordinator could do this, and they should then go to the CA to see if anything needs to be done.

You may wish to keep a website updated with progress on site, showing photos of the construction. There will be key moments you might wish to particularly celebrate including starting digging the foundations and when the roof is put on (topping out). Keep local newspapers up to date with progress to help spread the word about your project and keep people interested.

CASE STUDY: Newlands Community Development Trust

Key Facts

- Location: Newlands Centre, Romanno Bridge, Scottish Borders
- Nature of project: new build community centre
- Type of contract: traditional
- Original estimate of project: £1.5m
- Final cost of project: £1.5m
- Time to completion from initial discussions: initial ideas date back to 2003. Activity started with lottery application and creation of NCDT in 2007. Building started and completed 2011.
- Was completion on time, late or early? Early
- Out of 10, how happy are you with the finished project? 8 - 9

Building the Newlands Centre took just under a year, without major holdups, despite the complication of the community centre being attached to the village primary school which was being upgraded at the same time.

Sue Unwin, the Newlands Community Development Trust treasurer, says this was in no small part down to the builders, who were carefully selected in part because of their promise of quality.

“Throughout the tender process we did a lot of qualitative analysis as well as cost analysis,” she says. “These people weren’t the cheapest – we didn’t want to go for the cheapest because quality was the key. It was important to have a building that did what we wanted and was delivered on time.”

Once the builders were on site there were monthly meetings between the Trust and all the professionals to make sure the Trust was updated on the build.

“It was a great working relationship between the guys on site daily, with the school as well. They did great stuff with the school pupils, they had escorted tours in hard hats and little yellow jackets, which they loved.”

The construction team was open to negotiation too: after downgrading the external doors to softwood to cut costs, they agreed to go back to hardwood – which the trust felt was important in a damp climate – and save money elsewhere instead. Costs were cut by leaving the walls as painted breeze-blocks instead of having them plastered as planned.

Unwin adds: “It was well-managed, which was one of the things we were looking for in the design team – we all had full-time jobs and couldn’t be there to sort it out.”

Once the bulk of the work, and the payments, were complete, it was more difficult to get the builders to prioritise the remaining landscaping work, says Unwin.

But one of the reasons why no unexpected problems arose during construction was that the Trust stayed on top of the detail.

“We have been close enough to it from the beginning to understand the costs, making sure things weren’t appearing that we had already agreed were not to happen, making sure conversations with architects were fed back to builders and conversations with builders were fed back to architects.”

The only thing Unwin would have changed about the construction process was the start date: a spring start rather than a January one would have meant the final landscaping could have been completed on time: “We came up against the weather into the back end of the year so we couldn’t get the heavy machinery onto the ground.”

Newlands Centre was officially opened by HRH Prince Edward, Earl of Wessex on 24 May 2012. It has become an integral part of the community, with daily use by schoolchildren.

Practical Completion

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Practical Completion

Practical completion is achieved when construction is finished reasonably in accordance with the contract, with no obvious defects, even though there are some minor things left to be done. This minor 'snagging' can be done after practical completion, provided you can agree a suitable time.

The architect certifies practical completion, which starts the defects liability period (see below), gives possession of the site back to the client, and removes the need for the contractor to provide site security or insurance cover. For the architect to issue the certificate:

- a building control completion certificate is needed – the local authority building control officer will have to visit the site and be satisfied the building is in accordance with the approved drawings
- a planning completion certificate is needed – the planning authority will issue a certificate of completion for the project, but may well check on site first to make sure conditions have been adhered to
- all testing, such as acoustic or airtightness testing specified in the tender documents, should be completed and satisfactory
- all components – such as the heating and ventilation systems – should be installed; commissioning certificates showing they have been successfully run and tested will need to be produced
- the health and safety file must be completed – for this the contractor must supply the CDM co-ordinator with a bundle of information and paperwork including the certificates above
- the team must supply 'as built' drawings which show any changes made after building work started
- the users of systems such as heating, ventilation and CCTV should have been trained in their use

At practical completion it is usual to hold a handover meeting, where the practical completion certificate will be issued. You will also need:

- all the keys for the building
- warranties and instruction books
- a snagging list and timescales for remedy
- meter readings and details of service suppliers
- this should be a celebration of the completion of the project so make sure you have a camera and a celebratory drink on hand.

Defects Liability Period

This is a period (specified in the contract, usually 12 months) where any defects that arise should be fixed by the contractor, at their cost. This does not include damage done after the practical completion or, usually, any maintenance.

It is normal for buildings to need a period of drying out and warming up. This can cause minor cosmetic damage such as small cracks in the decoration. Consult the contractor about what you should notify to them urgently and what will wait until the final defects inspection.

The architect will fix a date for defects inspection at practical completion. On that date they will inspect the premises and tell the contractor of any defects. The contractor will then let you know when the defects will be fixed. After this work has been done, the architect will visit again and will issue a 'making good defects' certificate.

Fees

Certification of practical completion is usually the point when you should bring up your payment of fees to professionals to 95% of the total. Issuing the making good defects certificate normally means 100% of these payments should be made.

Final Account

Normally the quantity surveyor and contractor agree the 'final account', which is the final cost of the project, including payments for any variations or extensions of time, before the end of the defects liability period.

Once the final cost has been agreed and the defects certificate has been issued, the architect will issue a 'final certificate' which will bring the contract to an end. All fees to the builder and other bills connected to the project should be completely paid off at this point.

The Opening

Remember to celebrate the opening of the building and invite users and everyone else involved in discussing its design. Some projects may benefit from publicity, and coverage in local papers can help bring the community together and attract more users. Some ideas include:

- a grand opening, often some time after completion to ensure that there are no hiccups. Getting a well-respected local person to open the building often results in articles in the local newspapers
- a week of events and activities to get people into the new building and using the facilities
- building tours for people who have been involved and other communities thinking of doing similar projects

Remember to thank those volunteers who were involved in the project and gave their time.

Final Details and Feedback

At the end of a project it's easy for everyone to go their separate ways and leave you, the client, with a building but with little idea how best to run and manage it. A couple of additional hours with your architect can help you run the building better, and lower your energy bills and carbon footprint.

While giving and getting feedback does not form a standard part of an architect's job, it is useful for everyone involved.

You may wish to pay the architect, after final certification, to do one or more of the following:

- Prepare a user guide for the project, in plain English, explaining how the building is designed to be used.
- Undertake a design review with you identifying areas that could be improved if a similar design is used again, particularly if you might do more of the same type of building. You will look at the design brief together and see how closely the building matches it.
- The idea of what is known as a 'soft landings' process is gaining ground in architecture and is becoming accepted as good practice. This should involve continued contact with the client, checking and measuring how the building is functioning, helping to train users, and making any minor alterations required for the building to be used most effectively.

Some architects will be keen to do these things as they see them as an important way to improve their product, but some will be reluctant. There's no point at this stage in apportioning blame: feedback is only worth doing to understand the process better for next time.

Contact Us

John Gilbert Architects is a small design studio, based in Scotland, passionate about designing places for people and the planet. Expert in ecological, low carbon development designed with the community, we undertake design work from a strategic level to detailed architecture with creativity, enthusiasm and knowledge.

We undertake feasibility studies, research, masterplanning projects and full architecture services. To discuss a project or an idea please contact Matt Bridgestock on 0141 551 8383 or visit our website: www.johngilbert.co.uk/

Richard Baynes is a freelance print and broadcast journalist currently working with a number of media outlets on a range of projects. He is based in Glasgow and there is an environmental slant to his work. Richard is interested in hearing about any stories connected with sustainability, the natural environment and outdoor pursuits in Scotland.

Contact Richard via his website at www.richardbaynes.com/

The Community Ownership Support Service (COSS) is an adviser-based service available across Scotland which provides individual community groups with a bespoke support service. Our support can include a combination of:

- Expert advice on all aspects of asset transfer
- Training courses on the asset transfer and asset development process
- Sign-posting to other support agencies
- Web access to information on good practice, toolkits and case studies.

Communities will also be able to link into the Development Trusts Association Scotland's wider network to explore the wide range of business models being adopted by other communities throughout Scotland and across the UK.

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