

## INFORMATION NOTE

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### SUMMARY

Based on a study of the homegrown hardwood supply chain, this Information Note presents key findings on the supply of timber products to the mainstream building industry in Scotland. It identifies the core customers for timber products in this market and describes the processes and procedures that influence their purchase decisions. It also presents the key characteristics of a successful timber product supplier to the building industry.

### INTRODUCTION

The building industry is an important market for timber products in the UK. Although manufacturers of homegrown timber products face tough international competition in this sector, there is scope for import substitution and significant opportunity to add value to homegrown timber. Based on the results of recent research, this Information Note presents seven key characteristics of a successful timber product supplier to the mainstream building industry, and discusses their implications for the timber processing industry in the UK. 'Mainstream' refers to architect or engineer-led building projects carried out using standard forms of building contract. This sector of the building industry undertakes a significant proportion of all UK construction work. The Note also describes the roles and responsibilities of key players within a mainstream building project and the conventional procurement process for timber products in this sector.

This research was funded by the Engineering and Physical Sciences Research Council (EPSRC) and carried out by the Scott Sutherland School at the Robert Gordon University, Aberdeen. The project began in September 2000 and lasted 18 months. Its aim was to investigate whether hardwood products, produced by small sawmills and manufacturers in Scotland, could be fed into the mainstream building industry supply-chain. However, the research findings do not relate exclusively to the supply of hardwood products. They highlight a range of characteristics that distinguish *all* successful suppliers to mainstream building work. These characteristics are equally relevant to the successful supply of wood-based panel products and softwood products and can be used for bench-marking in the timber processing industry.

As part of the research, a survey was carried out by scheduled interview across a random group of 32 specifiers, purchasers and suppliers in the building industry timber supply-chain. These interviewees were engaged in a critical examination of their specification and procurement practice for timber products. The survey only sampled the mainstream industry. It did not investigate other routes into building construction – for example, the self-build sector – which are also served by small hardwood mills and manufacturers in Scotland.

### THE SUPPLY OF TIMBER PRODUCTS TO A BUILDING PROJECT

In order to sell effectively into the mainstream building industry a manufacturer must consider the following questions:

- Who are the customers for timber products?
- What drives a building contractor's purchase decisions?

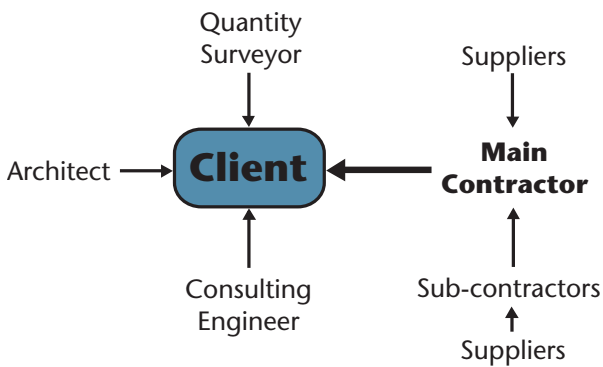
#### Who are the customers for timber products?

The customer-supplier relationships in a typical construction project are illustrated in Figure 1. At the centre is the client (person or organisation commissioning the work), who typically employs an architect, engineer and quantity surveyor to prepare a design, produce the building contract and administer the project. The client enters into a contract with a building contractor, usually by competitive tender, to have the construction work

carried out. This contractor (known as the main contractor) frequently employs a selection of sub-contractors. Each contractor has a range of suppliers. **The core customer for timber products in a standard building contract is therefore a main contractor (or, if present, a joinery subcontractor).** A client does not purchase materials or products directly from any supplier.

**Figure 1**

**Diagram of customer-supplier relationships in a typical construction project**



The roles and responsibilities of the key players in a mainstream building project are presented in more detail in the Annex to this Note (pages 5–6).

## What drives a building contractor's purchase decisions?

The contract between a client and a main contractor typically contains a specification that describes the nature and quality of materials, products and components to be used in construction. The architect and engineer are the most common specifiers of timber products. They, in collaboration with the client, choose materials and products at the design stage of the project.

The usual intention of a specifier is to define the performance of a material, product or component without limiting the contractor's ability to price competitively. In the case of timber and timber products, the country of origin of the timber is therefore rarely dictated. To promote competition a specification will also avoid naming timber product suppliers, except where a product has been selected for its particular appearance and performance, for instance, a reliable brand of timber window. In a competitive tender a contractor aims to source the best-value product that matches the quality defined in the specification. A more detailed description of specification practice is contained in the Annex.

## THE PROFILE OF A SUCCESSFUL SUPPLIER

A manufacturer supplying timber products to the mainstream building industry has to satisfy the stringent requirements of its core customer, the main contractor or joinery contractor. To meet these requirements a successful supplier must fulfil the following seven key criteria, listed in the order of importance to the customer.

1. Sell competitively.
2. Sell to core customers in the building industry.
3. Deliver within conventional and assured lead-times.
4. Supply predictable, consistent quality.
5. Understand 'fitness for purpose'.
6. Offer technical support and a strong customer focus.
7. Market appropriately.

### 1. Sell competitively

Virtually all construction work in the UK is procured by competitive tender, which means that homegrown timber product manufacturers compete vigorously with overseas manufacturers on cost. In order to sell in the building industry a homegrown timber product has to cost no more than an imported product of the same quality, and has to be available within the same lead-time. If these criteria are met, this study revealed that some specifiers favour the use of a UK-manufactured timber product over an imported one. Although there is no premium in selling a homegrown product there is a market share advantage.

The timber product supplier wishing to sell in this marketplace must be prepared to offer wholesale rates to contractors, in keeping with the policy of merchants and distributors.

### 2. Sell to core customers in the building industry

The mainstream building industry's core customers for timber products are main contractors and joinery sub-contractors. Ease of supply is a key concern of these construction customers.

For the sake of convenience and cost-effectiveness a contractor will attempt to buy as much timber and timber products as possible from a timber merchant or local builder's merchant. Only volume-produced timber products are suitable for sale through these distributors which, in the case of homegrown timber, include wood-based panel products and machine-graded structural softwood.

Many timber products are not, however, sold through timber or builders' merchants. Imported windows, for example, are often sold through agents or distributors who supply contractors directly (see Figure 2).

A contractor will buy directly from an agent, manufacturer or sawmill if directed to do so by the specification. External softwood cladding and visually-graded structural timber are examples of homegrown products that are sold directly to contractors by UK sawmills.

This research revealed that many small-scale manufacturers of homegrown timber products resist selling to building contractors because direct sales to end-users can be more profitable in small-scale production.

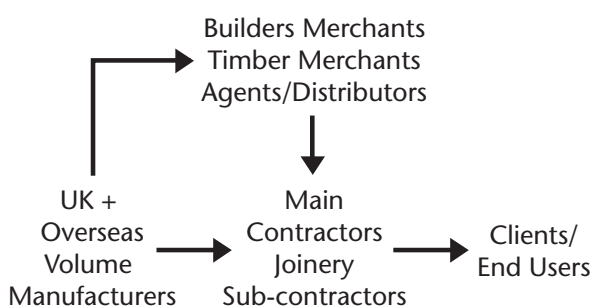
### 3. Deliver within conventional and assured lead-times

'Lead-time' is the term used for the interval between ordering and delivery of a construction product. In terms of sourcing building materials lead-time is a key concern of most building contractors.

In a mainstream building project a contractor works to a very tight programme so an unexpected delay in the supply of one product can upset the whole sequence of construction and cause the contractor additional expense.

An appropriate lead-time can be the determining factor in a contractor's choice of timber product supplier. It is usual for a timber product supplier to be under considerable pressure to deliver on time, and this study revealed that failure to do so can discourage a specifier or contractor from using that manufacturer's product in the future.

**Figure 2**  
Building industry purchase-chain for timber products



**Table 1**

Sample lead-times accepted by the mainstream building industry

Product	Lead-time
Wood-based panel products Machine-graded structural timber	Available 'off the shelf'
Joinery timber	Between 1 day and 2 weeks
Visually strength graded timber (e.g. green oak, Douglas fir)	Between 1 and 4 weeks
Manufactured timber products (e.g. windows, flooring)	Between 4 and 8 weeks

More construction products than ever can now be bought 'off the shelf' from a timber or builders' merchant. Under a standard form of building contract the contractor gets paid for supplying a building product only after it has been built into the construction fabric. Contractors therefore tend to purchase products as close as possible to their use in construction because this benefits cash flow. This is another reason why lead-times can be a hindrance, and purchasing products 'off the shelf' from a merchant is attractive. In general, these lead-times will be met only if a manufacturer keeps an adequate stockpile of products, and has the capacity to respond quickly and efficiently to orders. To achieve this a manufacturing business needs to have adequate capital investment.

This research revealed that inability to deliver within accepted lead-times is a significant constraint to small homegrown timber processors and manufacturers selling into the mainstream building industry.

### 4. Supply predictable consistent quality

The mainstream building industry seeks out timber products that have a reliable performance. Reliability is the ingredient that encourages specifiers and contractors to return to the same manufacturer time after time because a reliable timber product will not give rise to problems, such as warping or shrinking, after it has been used in construction. Since manufacturing defects occasionally occur even in the most reliable of products, a manufacturer's reliability will also be measured by the speed with which a defect or problem is remedied.

Some homegrown timber product manufacturers confuse the requirement for consistent quality with a preference for the *superior timber* quality on offer from some imported products. Not all customers are looking for top grade clear timber and, providing it is predictable, the quality of

homegrown timber is adequate for many construction uses. Indeed this research identified that it is often valued for applications such as hardwood flooring and visually graded structural timber, where a characterful appearance is important.

## 5. Understand 'fitness for purpose'

Understanding 'fitness for purpose' is a technical challenge that has to be met by technical expertise. It is common for timber construction products to carry an assurance of quality or performance whereby a manufacturer has undertaken to have his product tested by an appropriate authority and declared fit for purpose. The *MacData system* for testing windows is one method of assuring performance, as is a British Board of Agrément (BBA) certificate in the case of (for instance) a wood-based panel product. In general, contractors and specifiers favour manufacturers whose products perform to an approved standard.

If the performance of a timber product is not assured, 'fitness for purpose' has to be achieved through sound communication between manufacturer and customer. The customer's needs have to be interpreted in terms of performance, quality and appearance. This can be hampered by the absence of consistently-applied timber grading rules.

All timber product manufacturers are expected to understand the context in which their products are typically used in construction and be aware of how to install them satisfactorily.

## 6. Offer technical support and a strong customer focus

A timber product manufacturer with a strong customer focus clearly wins loyalty in the building industry. A typical contractor values good customer-supplier relationships and will endeavour to trade with a trusted manufacturer.

In the survey that accompanied this research, specifiers frequently reported that they depend on timber product manufacturers to provide product-specific technical support, usually by telephone and ideally backed-up by written guidelines. Advice is sought on product installation, maintenance, and occasionally on the design and modification of timber products. Many large manufacturers employ technical representatives who will visit specifiers, contractors, and even building sites, on

request to give technical advice. For most small businesses, providing technical support is a time-consuming and often prohibitively expensive service.

## 7. Market appropriately

Successful marketing strategies for building products seek out and offer solutions to the problems that the building industry is attempting to solve. Product manufacturers have to develop a clear understanding of current building methods and the challenges faced by the industry. Effective marketing draws attention to the benefits a product has to offer a contractor or specifier, rather than focussing exclusively on its features.

This research revealed that a good reputation is the best marketing-tool in the building industry. Word-of-mouth plays a large role in promotion because specifiers and contractors frequently exchange information about the performance of products and suppliers. Contractors are also influenced by advice from timber and builders' merchants.

Specifiers reported that timber products are sometimes brought to their attention by mailshots and by displays at conference or seminar events. Scheduled visits from manufacturer's technical representatives are more effective, particularly if product samples are available for review. Specifiers reported that they welcome invitations to visit manufacturing plants, which in addition to forging direct links can generate confidence in a manufacturer if, for example, quality assurance is evident in the manufacturing process. Specifiers and contractors do not expect to be influenced by advertisements in journals and magazines, although advertising in a publication that is targeted at an appropriate local market could benefit a niche product.

There is evidence of niche-markets developing around some homegrown timber products, such as solid hardwood flooring, visually-graded structural timber, and hardwood and softwood cladding, as a result of increased use in design by specifiers and end-users. In addition, the environmental benefit of using locally-sourced building materials is gaining recognition in the UK amongst a small but growing number of specifiers and end-users. Most contractors are not familiar with sourcing homegrown timber products and rely on specifiers to draw attention to manufacturers. It is appropriate, therefore, to target certain specifiers and end-users to market homegrown hardwood products because these decision-makers have a key role to play in linking manufacturers with customers.

## DISCUSSION

In order to supply the mainstream building industry home-grown timber product manufacturers have to be able to meet the stringent requirements of their core customers, main contractors and joinery contractors. The principal concerns of these customers are cost, availability and reliability. The ability of home grown timber product manufacturers to meet these concerns is currently very mixed.

Few manufacturers fulfil all seven of the characteristics of a successful supplier described in this Note. In particular, the availability of homegrown timber products varies considerably and is a key constraint in the sale of some products into mainstream construction. For example:

- **Available off-the-shelf:** Volume-manufactured products such as wood-based panel products and machine-graded structural softwood are widely available ‘off-the-shelf’ from a timber or builders’ merchant. In this case a primary need of the construction customer is being readily met.
- **Available to a niche-market:** A niche-market for visually-graded structural timber and softwood cladding has developed within mainstream construction. Sawmills producing these products are selling directly to contractors within accepted lead-times. Few contractors have experience of purchasing products directly from a mill and most are not aware that these manufacturers exist. Typically a contractor follows the direction and advice of a specifier in sourcing niche-market homegrown timber products.
- **Limited availability to a niche-market:** A small number of small sawmills are selling homegrown hardwood products such as solid hardwood flooring and worktops, laminated oak windows and oak cladding. Although most of these products are in high demand, for instance in the self-build sector, they are only available in limited quantities. Lead-times can be unpredictable, and may depend, for example, on how busy the mill is, or how much timber is dry. It is appropriate, therefore, for manufacturers of these hardwood products to target niche-markets outwith the main-stream building industry until availability is increased.

The further a manufacturer wishes to expand into the mainstream building industry market, the greater the pressure to demonstrate the ability to fulfil the seven key requirements of a successful supplier.

## ANNEX

### Customer–supplier relationships in a typical building project

A construction project is a series of customer-supplier relationships, as outlined in Figure 1. These relationships develop as follows:

#### The Design Stage

In a conventional project the client (person or organisation commissioning the building work) initially appoints a team of consultants, known as the design team, which usually consists of an architect, structural engineer and quantity surveyor:

- The architect interprets the needs of the client and translates these into a design.
- The quantity surveyor advises on cost.
- the structural engineer collaborates with the architect to produce a design for the building structure.

The design team is usually led by the architect, who is responsible for co-ordinating and integrating the work of the other consultants into the overall design package.

#### Competitive Tendering

The client next selects a building contractor (known as the main contractor) by a process called competitive tendering, which aims to secure the client a competitive price for the construction work. Competitive tendering is a cut-throat process that is driven by cost. The tender documents are prepared by the design team and typically consist of design drawings, a specification, a bill of quantities and a set of standard contract conditions. A selection of building contractors is invited to submit fixed price tenders for the work and at the end of the tendering process one contractor’s offer is accepted. The tender documents become contract documents, and a contract is put in place between the client and the main contractor.

#### The Building Contract

The contract introduces a new customer-supplier relationship to the project. In return for a fixed amount of money from the client the main contractor undertakes to carry out all the construction work necessary to comply with the contract drawings and specifications, within a fixed timescale. The construction work is periodically inspected by the architect (and the engineer in relation to structure) to ascertain that generally it complies with the contract, although it is always the main contractor’s responsibility to ensure that it does comply. The architect

administers the building contract and is the arbitrator of fair play between the contractor and the client. Each month the quantity surveyor, in collaboration with the architect, values the work that has been satisfactorily completed and the client is obliged to pay this amount to the main contractor.

### Specification Practice

The specification is the part of a building contract that describes the nature and quality of the materials and components to be used in construction. The intention of a specifier (architect or engineer) in a tender document is to define the performance of a material or component without limiting the contractor's ability to price competitively. Timber products are usually specified in either of two ways, by performance specification or product specification:

- **Performance specification**

This method typically describes the timber species, moisture content, timber grade, British Standard classification, fitness for purpose etc. It defines the quality of the product without specifying its manufacturer or supplier. A performance specification frees the contractor to source the product from the supplier of his choice.

- **Product specification**

A product specification defines performance (as above) and lists an approved manufacturer or brand. Alternatively, to encourage competition, the specification might list a range of approved suppliers for the contractor to choose from.

In either method the country of origin of the timber is never specified because this would simply limit the contractor's ability to price competitively. Performance specification maximises the potential for competitive tendering and is therefore more commonly used. Product specification reduces the scope for competitive tendering but has one significant attraction for a client, architect and contractor – the appearance and performance of the product can be predicted. For certain timber products (such as windows, doors, flooring and worktops) competitive pricing is often worth sacrificing for the predictable quality of a reputable product. It is therefore in a manufacturer's interest to be listed by product specification. This does not automatically ensure, however, that the specified product will be used. It is common for a contractor to shop around for a cheaper product of similar quality and obtain permission from the architect and client to substitute it for the specified product.

### The Construction Process

A main contractor tends to rely heavily on domestic sub-contractors for the provision of trade labour so the pattern of customer-supplier relationships expands. This relationship also describes the pattern of financial transactions that take place. Under a standard form of contract the only member of the construction team to be paid by the client is the main contractor, who has sole responsibility for the construction work. The client does not pay sub-contractors directly, nor purchase materials, for example timber products, directly from suppliers, because this would relieve the main contractor of responsibility for the supply and performance of those products.

The building contract places a heavy burden of responsibility on the main contractor. This contractor has quoted a fixed price in advance for the work, is solely responsible for all construction work even that carried out by a subcontractor and has undertaken to complete the work within a stipulated period of time. A main contractor works under considerable pressure and smooth customer-supplier relationships are vital to the success of the construction process.

## ACKNOWLEDGEMENTS

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