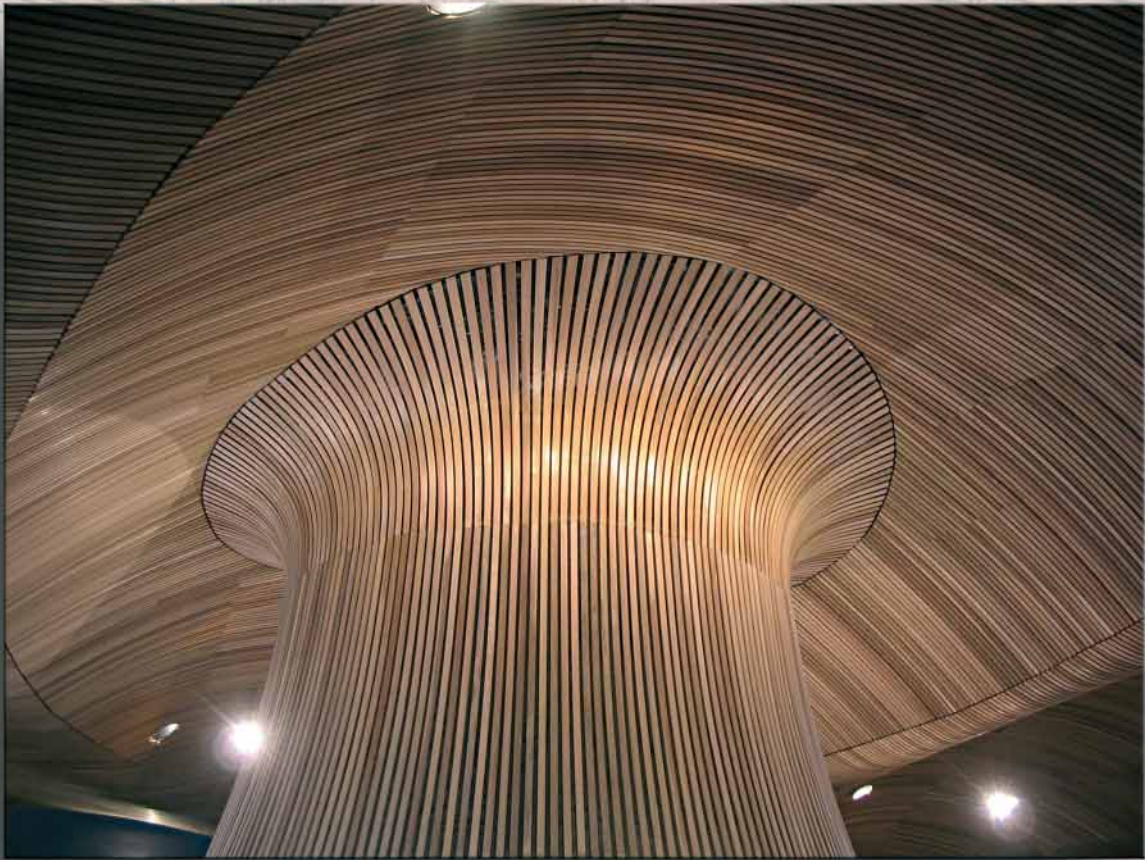


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BCL Timber Cladding Ceiling & Lining Systems



BCL TIMBER PROJECTS LTD
Design • Manufacture • Installation

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"...the total timber cladding service from one specialist company..."

Cover Photo: Funnel detail - National Assembly for Wales

Please contact "BCL Timber Projects Ltd" for further details regarding design, technical performances, aesthetics etc; or for advice regarding a specific project with which you are currently involved.

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BCL Timber Projects are pleased to be members of TRADA subscribing to the principles and practices of their technical and environmental recommendations in every aspect of the work we carry out.



Introduction to BCL Group

Overview

BCL Timber Projects Ltd was formed nearly ten years ago as a division of The BCL Group to provide a dedicated service to the highly specialised internal and external timber lining markets. A particular focus for the company is the external rain-screen cladding business, in which we have experienced strong growth in recent years.

Whilst timber has clearly been used in construction for centuries, its use has found new appeal and relevance due not only to its inherent beauty and design flexibility but also crucially, to its environmental credentials.

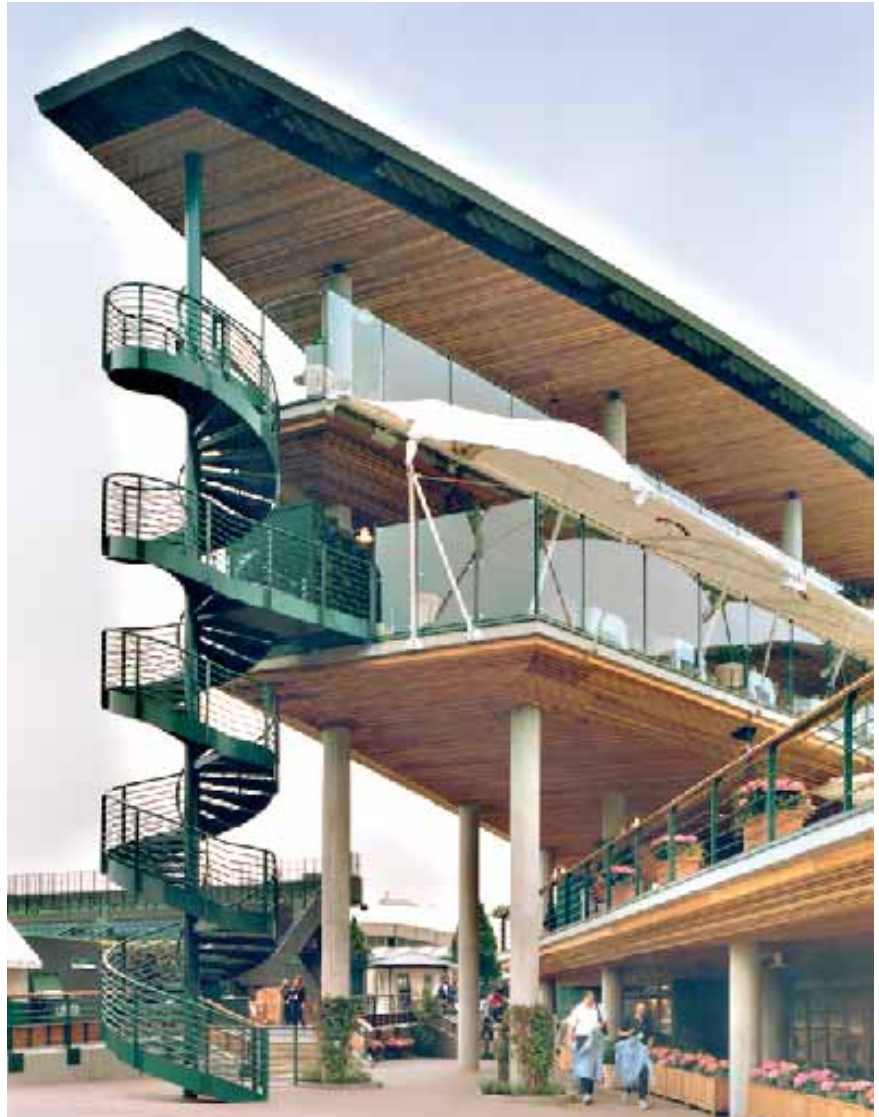
Prestigious installations completed to date by BCL include the new Welsh Assembly Building in Cardiff, The LTA National Indoor Tennis Centre at Roehampton, the All England Lawn Tennis Club at Wimbledon, the award winning Hampden Gurney School in North London and South Bank University.

The BCL approach to timber systems

BCL has extensive in-house design resources with proven system solutions whilst through our partnering arrangements with leading industry manufacturers we are able to introduce the required product expertise to each bespoke design.

By working with designers from the very early stages of a project, BCL will ensure that the practical system requirements are considered and incorporated into the design without compromising the design intent or the finished appearance.

Our success has been achieved by providing clients with a unique 'single-source' solution that delivers high quality, practical, affordable cladding systems to warranted standards of performance.



All England Lawn Tennis Club - Wimbledon



Faculty Building - Cambridge

Off-site pre-fabrication

One of the key benefits of dealing with BCL Timber Projects is our extensive knowledge and expertise of pre-fabrication techniques for timber panel systems.

Every stage of this process - from timber selection and sourcing through to completed system installation - is overseen by rigorous quality control procedures designed to ensure consistently high production standards.

In this way the accuracy of on site panel alignment and a first class appearance are guaranteed - every time.

Internal timber ceilings and linings

The techniques developed by BCL are the result of more than thirty years experience in the design and installation of integrated ceiling systems where functional considerations such as access, fire barriers, services integration and acoustic enhancement have all become an essential part of modern building design.

The introduction of such functional considerations does not need to be at the expense of the original design intent, whilst additional considerations such as fire performance and acoustic enhancement of the

"...off-site panel prefabrication produces a high level of dimensional accuracy..."

space can be readily incorporated.

To fulfil the total design requirement, BCL will also design the supporting grid system matrix that if required, can allow the ceiling plane to follow the geometry of an undulating building roofline - no matter how complex.

Hampden Gurney School



External timber cladding systems

By offering this total service package for the design, fabrication and installation of first class quality lining systems, BCL Timber Projects enable Architects and Designers to confidently exploit the full potential for the use of timber within the building envelope.

The available choice of board layouts is almost infinite, but includes linear slats, or solid panels that can be set out in modular or seamless formats or a design where the joints are expressed as shadow gaps.

Why wood...?



National Assembly for Wales - Cardiff

For centuries Architects and Designers have chosen to build with timber because of its unique characteristics and everlasting appeal. In its many forms, it is a supremely versatile natural resource and is available in endless combinations of species and finishes.

There are many environmental benefits created by the use of timber as a building material and one of its many advantages is the inherent strength-to-weight ratio, lending itself to most building applications, whether internal or external, hardwood or softwood.

Sustainability

As a naturally renewable resource trees require a fraction of the non-renewable fossil fuels needed in the production of alternative materials such as aluminium or steel.

As trees grow they derive their energy from the sun, producing oxygen whilst simultaneously absorbing carbon dioxide from the atmosphere.

Furthermore, as an environmentally friendly resource, wood has no equal. Unlike many of the earth's other natural resources such as coal or iron ore, there is very little energy involved in its production and little or no toxic or chemical waste produced.

Wood remains one of nature's only truly natural, renewable resources.

Chain-of-custody (COC)

'Chain-of-custody' is the process by which an audit trail is established to enable an individual parcel of timber to be tracked from the time it leaves the forest, through processing and marketing channels, to the final consumer.

This enables companies to verify that a 'certified' product has genuinely originated from a certified source.

There are in fact many certification schemes in operation worldwide that compete for both recognition and revenues in the marketplace and although each has its own relative strengths and weaknesses, some are adapted to their own country's forestry circumstances, whilst others have a broader based international framework.

Professional accreditation bodies through whom timber can be confidently purchased as fully compliant with the above requirements include: FSC, PEFC, SFI and CSA. Whilst some differences of emphasis or philosophy may still exist between these organisations at present their respective COC schemes are in fact virtually the same.

It should be recognised that TRADA has also recently introduced its own 'BM TRADA - forest products certification scheme' to which many of the leading timber supply companies in the UK have subscribed. Its introduction provides independent COC certification for schemes and initiatives that are not currently recognised by either FSC or PEFC.

Timber product life-cycle analysis

Whilst certification standards and chain-of-custody tracking ensure that timber is properly assessed against sustainable forest management criteria, timber and timber products may be evaluated in the future on the basis of 'life-cycle analysis'.

This is an evolving process of assessment at all stages of a product's life including resource procurement, manufacturing, construction,

service life and de-commissioning or disposal at the end of its useful life.

This method of analysis is designed to produce an enlightened view of the total environmental impact of timber products and processes.

BCL policy statement on 'sustainability'

BCL and our supply partners endeavour to use only timber that is certified as being supplied from a sustainable source, where responsible forest management practices are adopted and wherever possible, where chain-of-custody certification is available.

"...Timber remains one of the planets few truly natural resources..."

Species selection

The design flexibility, durability and eventual appearance of building elevations deploying timber cladding requires a well detailed specification of materials to be drawn up from the outset with the selected species possessing all the necessary characteristics for that particular application.

The choice of species and timber grade are important for example, where 'usual quality' is a term relating to the frequency and size of knots, direction of grain and the surface finish i.e. planed, fine or rough sawn which, if not properly detailed may lead to practical difficulties or limitations during the manufacturing and assembly stages of a project.

It is also important to decide on the required visual effect of the boards and how they relate to each other. If for example a precise smooth, flush face, stained appearance is required, it is preferable to use T & G boards with straight grain and precise edges setting acceptable limits on the size and frequency of knots. If on the other hand a more robust appearance is

"...chain of custody accreditation is now a pre-requisite for the supply of timber..."

required, overlapping of sawn boards used vertically or horizontally would be more appropriate, where larger and more frequent knots and the occasional rough 'arris' may be acceptable. Loose or dead knots however should always be excluded whatever visual quality is required.

Timber quality

The code of reference covering the acceptability or otherwise of the appearance of knots in timber is BS:1186-3. This standard also sets limits on other natural characteristics of wood such as the acceptability of 'splits, shakes and checks', the presence of resin pockets, limits of sapwood, limits of wane, the rate of growth of softwood, the slope of the grain and limits on exposed pith, decay and insect attack.

It should also be recognised that the choice of timber species today is determined not only by its inherent technical capabilities and suitability



West London Academy - Northolt

to do the job but also by its environmental credentials.

At this point reference should be made to TRADA, one of the most highly regarded organisations within the timber industry, setting out from a unique perspective clear guidelines covering every aspect of the use of timber in construction.

TRADA embrace the wood supply chain principle – from forest through to finished product – in this case, completed cladding on the building. BM TRADA's chain of custody scheme "TRADA-Trak" is accredited by the Forest Stewardship Council (FSC).

Timber choices

Each timber project has its own unique set of practical and aesthetic circumstances and requirements, therefore the process for species selection should be carefully developed and evaluated.

There is an extremely wide range of species available to choose from, with each having its own inherent characteristics, cost, process considerations and ability to meet the desired final appearance of the building.

BCL Timber Projects will be pleased to recommend the most suitable species for each application and to address all aspects of the project with you.

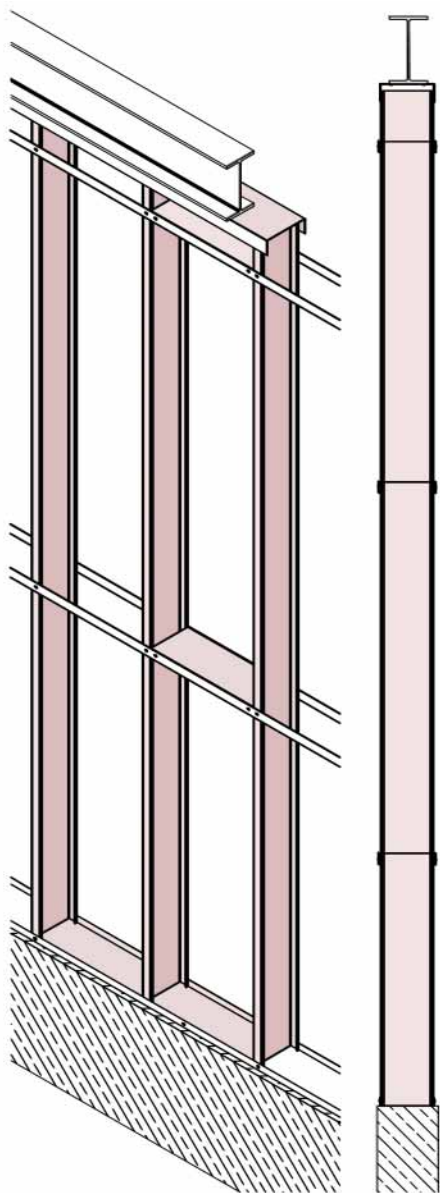
Whatever species you are currently considering using, please choose BCL Timber Projects to review your current requirements and allow us to demonstrate our cost-effective design solutions and proven expertise.



West London Academy - Northolt

Components of Timber Cladding Systems

The following is an outline of the individual components that go to make up the definitive, comprehensive cladding service available from BCL Timber Projects:



Components are pre-fabricated off site to the correct length and are then positioned and assembled on site to accommodate the design, sizes and support arrangements for windows etc.

This process significantly improves installation speed and keeps waste to an absolute minimum, thereby reducing the overall square metre costs for all elevations of the building.

Full technical details are available to enable the selected stud sizes to precisely meet the design loading requirements for the structural openings designed for each elevation of the building.

BCL will be pleased to discuss design detailing as well as installation budgets for your current scheme requirements.

Insulation products

Architects and designers are, understandably, required to meet the increasing demand for buildings that are designed with extremely high levels of energy efficiency, to produce low levels of carbon dioxide and greenhouse gas emission.

A key element in achieving these levels of performance is to reduce the overall energy levels consumed by a building by creating a greatly enhanced thermal insulation performance through good design.

By working closely with many leading manufacturers in the insulation industry BCL are able to provide clients with access to an infinite

range of thermal insulation solutions to suit all circumstances and budgets. This ensures that the required performance levels will be correctly determined and that the optimum product solution is incorporated into the project design from the outset.

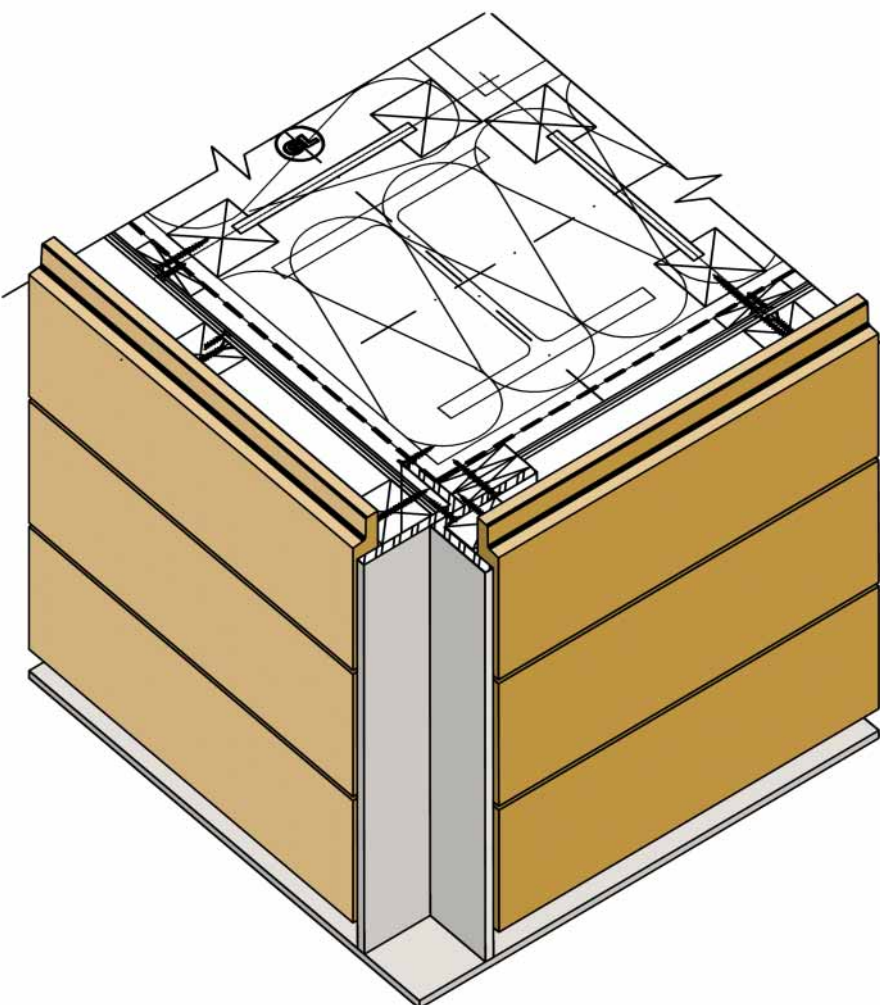
Vapour Control Layers

The vapour control layer (VCL) fulfils a number of key functions:

- To prevent air movement through the envelope, reduce vapour transfer from the occupied space and to reduce heat loss by convection through the structure
- To prevent vapour diffusion and reduce transmission through the structure
- To provide an integrated system that links the different areas of construction responsibility

The external control layer (breather membrane) fulfils the following tasks:

- To protect against water ingress
- To reduce unnecessary air movement from outside to inside, so improving thermal performance
- To allow any moisture which does pass into the envelope to dissipate safely into the atmosphere
- To be UV resistant.

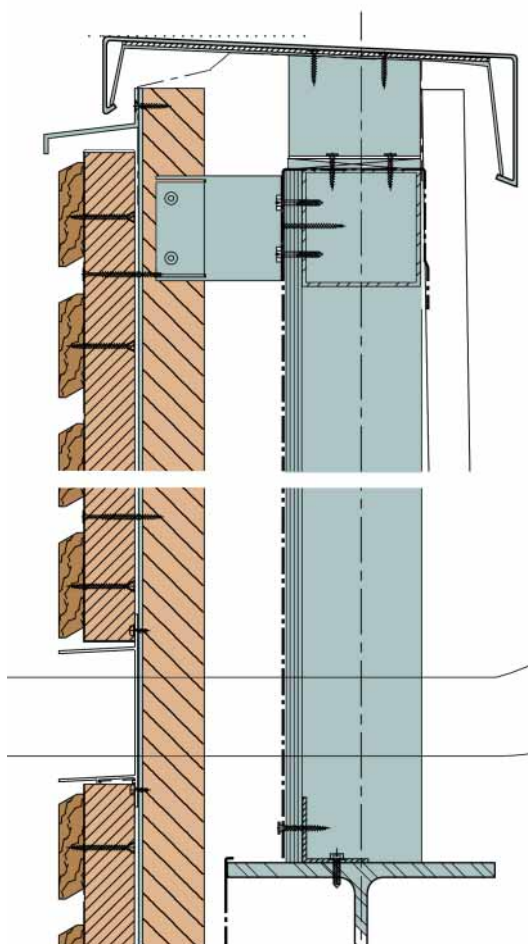


Structural Framing Systems

BCL have recently established a strong supply partnership with a leading UK manufacturer of structural steel framing systems.

High performance, prefabrication, speed and reduced weight are just some of the advantages of using load-bearing stud and track profiles to build the inner leaf of a building. They act as integral wind posts that support the lateral load from the external skin, as well as providing a zone for high levels of insulation and the means of support for the internal drywall lining system.

A further benefit is that the use of steel framing enables the structure to be made watertight at a much earlier stage in the building programme than is possible with traditional construction methods.



Typical coping detail

Fixings and support bracketry

With an enviable pedigree in the design of integrated practical support systems, BCL are able to apply proven solutions to new project enquiries as well as continuing to innovate with new products and methods that meet new design challenges.

There should be no compromise when it comes to the selection and use of mechanical fixings. Full testing is carried out on the performance of all primary fixings and bracketry taking into account the characteristics and detailing of each project undertaken.

This commitment and approach to excellence is available as standard to BCL clients throughout all stages of the process - from design inception through manufacturing and assembly to the final installation phase of the project.

Insect meshes

The construction of a building façade may introduce a number of cavities and "mouse holes" which should be closed off to prevent the ingress of insects and vermin. This is achieved by incorporating a suitable open "mesh" into the initial design.

Choices of mesh available range from those that have a purely functional purpose - made typically from black nylon coated fibreglass, to the more expensive meshes made from stainless steel or other metals, that enable such detailing to contribute more positively to the overall architectural effect of the design.

Aluminium window cills and window heads

Due to its outstanding design attributes, aluminium has become synonymous with modern architecture.

Once the choice of cladding system has been determined, the overall appearance of each elevation is then strongly influenced by the quality of detailing introduced at the window openings. Clearly, each individual project requires bespoke product solutions, which is where the sheer versatility of aluminium presents designers with unlimited possibilities.

BCL Timber Projects Ltd have many years experience in the design and manufacture of bespoke aluminium solutions and are therefore well placed to fully satisfy these varying design requirements and to ensure their effective integration into the overall installation.

Aluminium feature trims and architectural copings

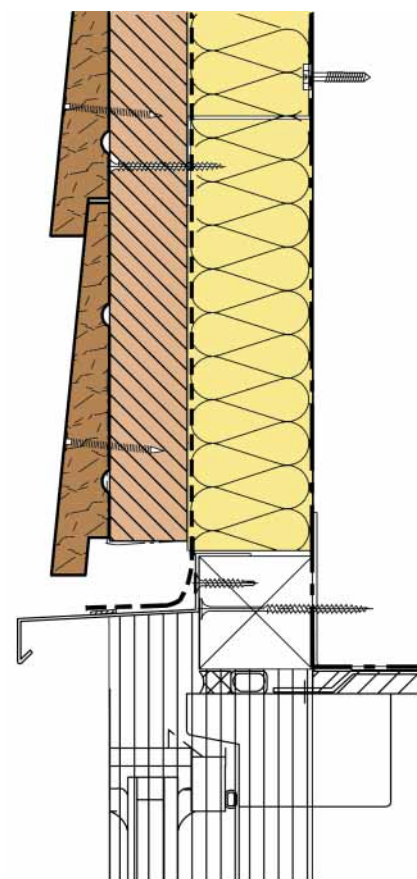
The lightweight and versatile properties of aluminium are ideally suited for the introduction of feature trims of any size or shape to provide enhanced design expression to the clad elevation of a building.

Similarly, the introduction of simple yet elegant pre-fabricated aluminium coping systems produces a practical and low maintenance finish to both parapet and perimeter walls.

The many advantageous characteristics of aluminium are further enhanced by the introduction of finishing options which include powder coating and anodising, both of which enable good colour co-ordination to be achieved with other elements on the elevation.

BCL have established supply partnerships with a number of leading manufacturers of rainwater systems which allow clients to confidently incorporate the design and installation of such detailing within the overall package of contract works that we undertake.

Western Red Cedar



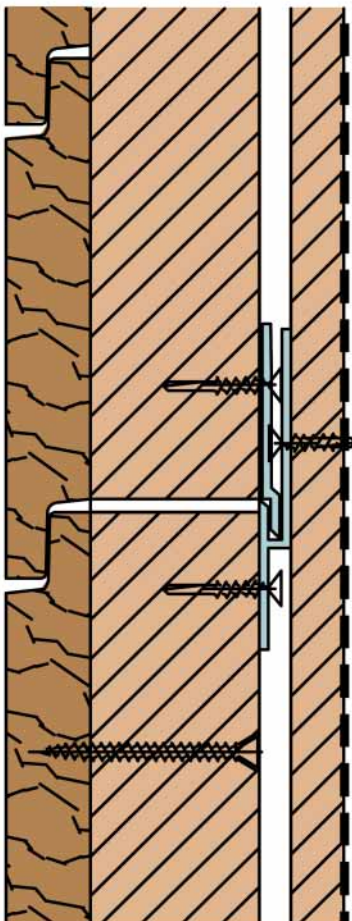
Typical window head trim

"...the versatility of aluminium allows affordable design enhancements to be made to the façades of a building...."

Timber Rain-Screen Cladding



West London Academey



Male & female panel Support Rail System

Rain-screen principles

All building elevations constructed using timber cladding must incorporate the design principles of a rain-screen system to allow any air-borne moisture passing through the boards or generated from within the structure to evaporate or drain safely away.

Ventilated cavity

The ventilated cavity behind the cladding allows the ambient humidity and moisture levels for both the front and rear faces of the boards to be equally maintained.

Bespoke cladding framework

Typically the cladding support framework will include a combination of treated softwood studs and battens, with bespoke aluminium profiles and adjustable brackets.

Off-site pre-fabrication techniques

Considerable advantages exist for both client and contractor by the introduction of BCL's pre-fabrication techniques, including improved visual appearance and a significant time reduction in the installation programme.

Another major advantage is the ability to use concealed fixings, thus eliminating the risk of staining which is associated with surface fixings.

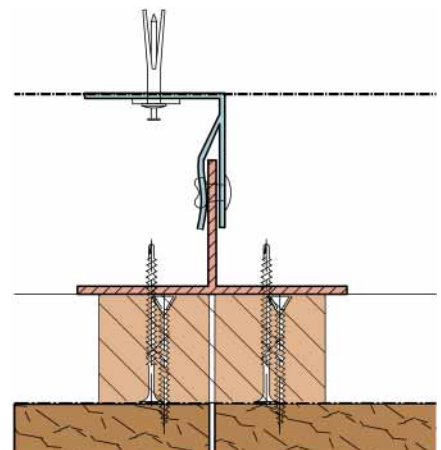
The elements within a BCL designed cladding system combine to create a visually stunning functional installation that is quick to install and highly competitive when compared to other systems available on the market.

Durability

Durability is the most important consideration when selecting timber species for cladding.

There are five classes of durability from 'very durable' to 'not durable (perishable)' relating to the resistance of the heartwood to attack by wood-decaying fungi.

Wood rated as 'moderately durable' or better can be used without preservative treatment, whereas those species that fall below this grade should always be impregnated with preservatives to bring them up to the level of performance necessary to meet the demands of an external cladding application.



Panel joints over Tee Bar Support - plus adjustable bracket



Western Red Cedar Cladding & Louvre door detail

Quality Assurance

BCL has always been driven by a commitment to Quality Assurance in order to produce high standards of excellence throughout its operation and this continues to be a 'first principle' of our business today.

This commitment was demonstrated more than twenty years ago when BCL became the first ceiling contractor to register under the original BS 5750 quality assurance scheme which later received formal accreditation in 1990.

In 2004 BCL qualified under the enhanced ISO 9001 (2000) quality standard and continues to implement and develop the scheme within its business today.

Please contact BCL Timber Projects today for free advice and assistance with your current cladding projects and benefit from a comprehensive design, manufacture and installation service for Clients, Architects and Contractors – all from one dedicated source.

We will be pleased to hear from you.



Harefield Academy - Tatajuba cladding

Timber Treatment



Surface coated Western red cedar

Wood and Fire

Despite its many qualities, wood is a combustible material and as such, like many other building materials, is susceptible to the risks of fire.

Non combustible gases and water vapour are produced when timber is exposed to fire and a layer of protective "char" forms on the surface. This provides inherent resistance to combustion and insulates the material against further damage.

The behaviour of wood in a fire is therefore extremely predictable with its structural integrity being maintained for longer than many other materials such as steel and concrete, which are prone to buckle or collapse.

The Ark

The resilience and resistance of wood when under attack from fire can be enhanced significantly by the introduction of a range of specialised fire retardant treatments.

Surface Fire-rated Coatings

Intumescent coatings in clear, white or coloured finishes are available in the market and are usually water-based formulations.

Impregnation Treatment

Unlike surface coatings, this process is carried out in a strictly controlled vacuum "autoclave" whereby the timber is enclosed in an airtight chamber before being flooded with flame-retardant chemicals. Vacuum pumps then extract

the air from the fibres of the material so that when the vacuum is released, the non-hygroscopic chemicals penetrate the inner structure of the wood. A higher grade of non-combustibility is then achieved by repeating the process.

The impregnated products are then kiln-dried, returning the wood to a suitable level of moisture content and producing a stable non-hygroscopic, non-corrosive product with permanent fire retardant properties.

Fire performance ratings to BS476 parts 6 & 7 Class 0 and Class 1 can be achieved with either treatment method.

Wood and Moisture

If the moisture content of wood is held below 22% there is no risk of fungal attack and little risk of attack by insects; the typical ambient humidity in UK does not raise the average moisture content of timber above 20%.

It is important to provide a ventilated cavity behind all timber cladding to allow the air-borne moisture to escape and reduce the risk of distortion.

It is also particularly important that the end grain of the wood is not exposed to the elements

Decoration and appearance

As well as enhancing its aesthetic appeal, the application of a surface treatment to the cladding boards will significantly increase its resistance to aging from the effects of weather and the ultra-violet rays of the sun.

A wide choice of high performance lacquered or stained finishes is available to extend the life of the timber and reduce ongoing maintenance considerations, whilst also having a positive long term impact on the environment.

Off-site panel prefabrication provides the opportunity for application of the surface coating at manufacturing stage, resulting in a better quality finish at a lower cost than the "post installation" alternative.



Special products & detailing

As part of our commitment to "Total cladding solutions" BCL Timber Projects continue to undertake highly sophisticated work involving specialised detailing to the external envelope of the building.

Birch-veneered plywood panels.

BCL have recently completed an impressive ceiling lining system at the new Lawn Tennis Association Indoor Centre at Roehampton.

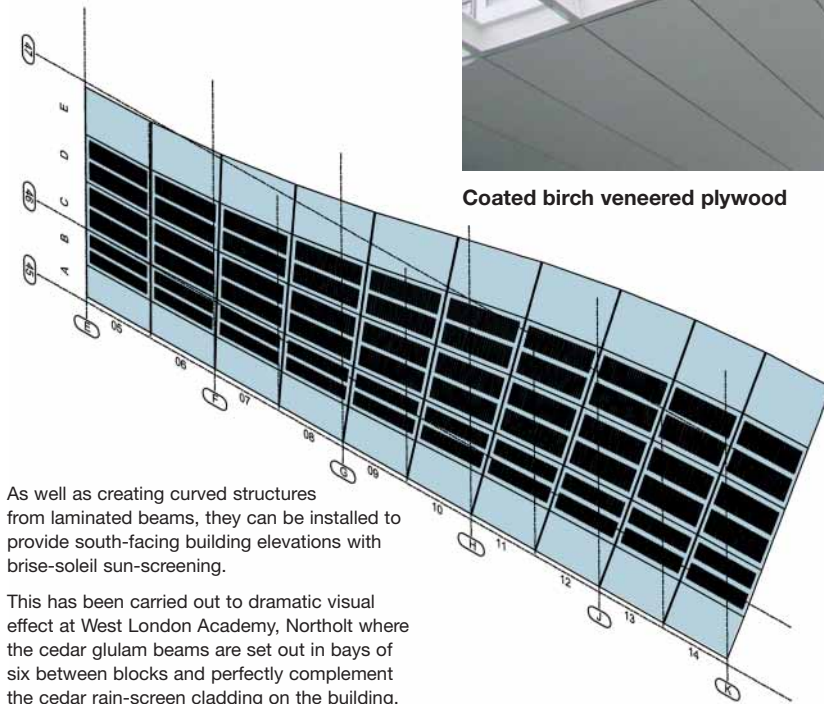
The highly complex shape of the roof required a bespoke grid system to be designed enabling the 15mm plywood panels to follow the elliptical roof contours.

Glulam Beams

Glulam beams are highly engineered using structurally rated, seasoned timber. Choices of species available include western red cedar and European whitewood.



Coated birch veneered plywood



As well as creating curved structures from laminated beams, they can be installed to provide south-facing building elevations with brise-soleil sun-screening.

This has been carried out to dramatic visual effect at West London Academy, Northolt where the cedar glulam beams are set out in bays of six between blocks and perfectly complement the cedar rain-screen cladding on the building.

Summary

BCL Timber Projects design, fabricate, supply and install a complete range of fully warranted bespoke cladding solutions that will satisfy the functional, aesthetic and commercial requirements of any project.

Please contact us for further information and allow us to contribute to the design development and detailing of your current cladding project.



Comprehensive design detailing in western red cedar



Glulam beam support & cladding interface

BCL - the natural choice for all your timber cladding requirements...



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