WOOD focus

ISSUE NO. 14 Spring 2006

The magazine of the Institute of Wood Science

INSTITUTE OF WOOD SCIENCE

Annual Conference Oxford, 19th September 2006

St Hugh's College

"Why Wood?"

The dates and venue for this year's conference have been announced. The Institute will host the President's Reception and Dinner at St. Hugh's College, Oxford, on the evening of Monday, 18th September, with the full-day conference the following day (Tuesday, 19th September).

Founded in the late 19th Century by Elizabeth Wordsworth (the great niece of the poet), St. Hugh's College is situated in a fourteen acre green garden site. Following the success of the IWSc's Jubilee Dinner and Conference at the Haberdashers' and Carpenters' Halls in London last year, St. Hugh's was considered by the Institute as a unique opportunity to hold its annual conference at another exceptional venue.

"Why Wood?" is the theme of the conference, which will feature a case study of the Maritime Institute in Galway - a newly built state of the art research and administration headquarters, designed by the Office of Public Works in Dublin.

Leading-edge science and technology in both the production and application of wood and timber products will also be presented.

At the time of going to press the proposed topics are:

Fitness for purpose
Sustainability issues
Timber treatments, options and innovations
Timber composites
Current research into microwave treatments for wood
Wood science knowledge and training

The after-dinner Speaker on the Monday will be Colin Dexter OBE creator of Inspector Morse

This event will take place with the support of the American Hardwood Export Council (AHEC), wood. for good and national timber distributor Timbmet - whose headquarters are in Oxford.

Conference flyers will be in circulation from the end of April and the full Conference Brochure and Booking Form will be circulated to Members in due course. For individual or multiple copies of both the flyer and the brochure please contact the Institute of Wood Science.

The Conference Programme and registration details will also be posted and regularly updated on www.iwsc.org.uk.

STILL JUST TIME TO ENTER THE WOOD AWARDS 2006

Anyone associated with the design, construction or production, installation or commissioning of joinery, wood structures and furniture in the UK can enter any project, large or small, in The Wood Awards 2006. Call 07957 730707 for more information and visit www.woodawards.com for full conditions of entry and entry forms. See The Wood Awards flyer (enclosed with this issue of Wood Focus) for details.

The sponsors of the awards - including the IWSc -now number twenty-two, led by the American Hardwood Export Council, the Carpenters' Company, the Forestry Commission, and wood. for good.

CORPORATE MEMBERS

The Council of management wish to record its thanks to those listed below for their support as Corporate Members:

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Akzo Nobel Specialist Coatings
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Arch Timber Protection
Arnold Laver & Co. Ltd
BCUC
Border Oak Design & Construction Ltd
British Woodworking Federation
Brooks Group Ltd
BSW Timber plc
Buildbase Ltd
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Technology for Timber
Timber Connection Ltd
Timber Trade Federation Ltd
Timber Trades Journal
Timbersource Ltd
Timbmet Ltd
TRADA
Travis Perkins plc
Welsh Forest Industries Group
Weyerhaeuser Europe Ltd.

INSTITUTE OF WOOD SCIENCE

50th Year Celebrations at the Annual Dinner & Conference

The Institute of Wood Science (IWSc) celebrated its 50th year with a dinner and cabaret at the new Haberdashers' Hall in the City of London followed by a Conference at the Carpenters' Hall attended by 126 delegates.

Speaking at the dinner Dr Vic Kearley, President of the Institute, said that the last fifty years had seen many predictions about timber come to fruition. He welcomed eight Past Presidents and guests from all over the world. Replying on behalf of the guests Mike Jeffree, Editor of *Timber Trades Journal*, outlined the importance of science and training in timber – quoting from several successful young people embarking on careers with the benefit of IWSc qualifications. Toasting the health of the Institute he said that *"your industry needs you!"*

The Conference was opened by Dr Vic Kearley who said that if wood was invented today it would make national news in the morning papers. He outlined, with the help of three Past Presidents the work of the Institute over the last fifty years. The morning session was then chaired by Richard Harris of Buro Happold. Under the theme "Wood - a Modern Material for a Modern World" the Conference heard from Amanda Baillieu, Editor of *RIBA Journal*, on modern architecture and from Luke Hughes on modern design. Both were upbeat about the future of wood but Ms Baillieu mapped the recent progress of wood in attracting architects to its full potential in growing number of buildings. "Architecture is now about much more inventive use of material and, according to the *RIBA Journal* barometer, timber will be very much part of this mix" she predicted. Luke Hughes, furniture designer and maker, agreed on the future of wood from a different perspective - based on the idea that the conjunction of craft, industrial and computerised production opens up opportunities for small businesses to service the needs of architects. But, he warned, "there is a communications gap between the timber industry and furniture makers, in terms of the availability of information that exists but is not easily enough available". Professor Arturo Dell'Acqua Bellavitis from Milan then gave an architectural Professors view of the future of wood.

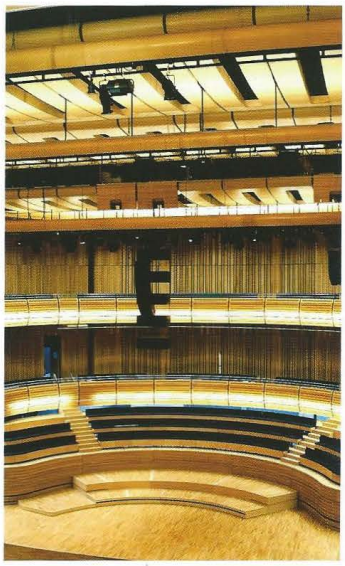
The afternoon session commenced with an explanation of "Why the Wood Awards Winners won" by Giles Downes Chairman of the award's judges, who went on to chair the afternoon session. Three case studies were presented by architects from Foster's "Sage Gateshead", Whitbybird's "Faculty of Education" in Cambridge and Capita Percy Thomas's "Wales Millennium Centre" in Cardiff. All three projects use wood extensively and following the presentations Giles Downes led a debate on the "Challenges of Architecture for Wood" which stimulated a lively discussion and more calls for better dissemination of technical information on wood.

The "Future of Wood" was a fitting close for this forward-looking conference on wood as a modern material, presented by Dr Peter Bonfield, MD of BRE Construction and a Fellow of the IWSc. He discussed in detail the efforts being made by competing materials, such as concrete and steel, to present their environmental credentials and their performance capabilities. He suggested that in the race for acceptance by the Government in its affordable housing programme, wood had not yet put its best foot forward and he warned "Don't get left behind!"

The Jubilee Conference gave delegates an opportunity to review products and services exhibited by the many sponsors including "wood. for good.", Canada Wood and the American Hardwood Export Council. More information is available on www.iwsc.org.uk.

Past Presidents of IWSc attending Jubilee Dinner

Luke Hughes
Furniture Designer and Maker



Case study: Foster's Sage Gateshead in FSC American Ash

FACTORY FINISHED BOARDS, OVERLAID AND COATED PANELS.

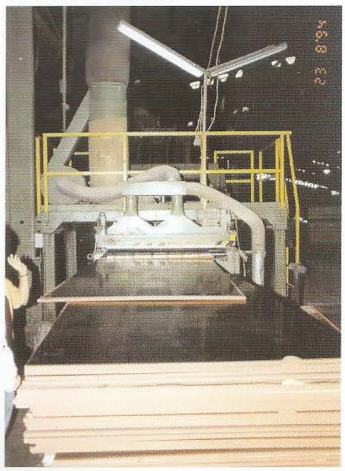
This article is based on a section of The Panel Products Module that forms part of the new IWSc Certificate Course.

In the panel products industry there are available a number of factory finished specialist panels that have been overlaid or coated to make them suitable for a range of specific uses. These may be referred to as Advanced Technical Panels (ATPs). The types listed below are all relevant to plywood although MDF, particleboard and OSB are available with certain specialist overlays and coatings.

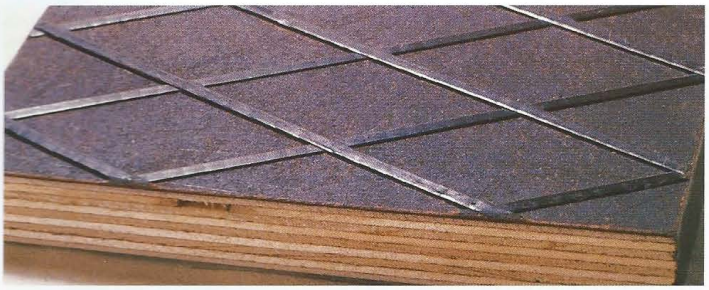
Phenolic film faced

A surface paper film impregnated with a phenolic resin in bonded to the faces of the panel. The edges are also sealed to minimize moisture penetration. Film faced panels have improved resistance to abrasion, moisture penetration, chemicals, insects and fungi. These panels are used in particular in the construction for formwork and shuttering.

They have a smooth, easy to clean surface. Various colours are available.



The manufacture of a phenolic film faced panel



The appearance of a film faced embossed panel

The use of a phenolic wire mesh, non-slip, overlay used for a lorry floor

Phenolic wire mesh patterned overlay

This process is similar to the one above except that it has an imprinted wire mesh pattern and this gives the panel anti-slip properties. A wide variety of such coatings are available. Such panels can be used for walkways, vehicle flooring, loading platforms and other decking type structures.

Impregnated paper overlay

This type of overlay, whilst not as hardwearing and resilient as the phenolic overlays, is widely used in the construction industry for formwork and shuttering.

Painted overlay

Plywood overlaid with a hot press phenol impregnated paint base film This film provides a stable and sealed base for painting operations and is recommended (provided the glue type is fully exterior) for exterior conditions.

Melamine resin faced

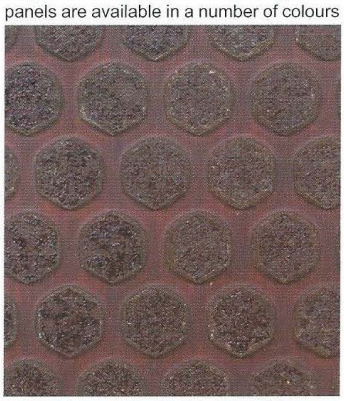
Such panels have a melamine resin surface and are ideal for many decorative and industrial applications including the food industry.

Glass reinforced surfaces

Panels can be overlaid with glass fibre reinforced resins and have either a smooth or a textured surface according to need. Special embossed patterns can be supplied. These panels provide a decorative and hygienic surface that is very hardwearing. They have superior resistance to abrasion, chemicals and weathering. They may be used for warehouse floors and ship decks where high loading may occur

Mineral aggregate faced

This type of panel is coated with an epoxy resin/mineral aggregate mix to provide a roughcast surface finish for buildings. The panels are available in a number of colours



An example of an imprinted wire mesh pattern

Metal faced

Aluminium, steel sheet or foil is bonded to plywood panels on one or both sides. They have high impact resistance together with the other properties of the metal surface.

Bullet security panels

Special 30 to 57mm thick bullet proof panels can be supplied and are suited for use as doors panels for example in banks, supermarkets and post offices or wherever extra security is needed. These are manufacture from a high density, heavily compressed, plywood panel.

Other specialist construction panels are available but the above represent the more common varieties.

Meeting the growing demand for Legal and Sustainable Timber

by Martin Gale CBE

PEFC Hectarage Grows to Meet Increasing Demand for Legal and Sustainable Timber

Sustainability

Demand for sustainably produced products is growing around the world. Here in the UK, consumers are becoming increasingly concerned about the environmental credentials of the goods they buy. Sustainability is also high on the government's agenda as demonstrated by the 2005 publication of *Securing the Future* – the UK Government Sustainable Development Strategy and the subsequent establishment of the *Sustainable Procurement Task Force* chaired by Sir Neville Simms. This task force is charged with drawing up an action plan on sustainable procurement by April 2006 which aims to bring about a step change in public procurement to ensure that the UK is among the leaders in the EU by 2009. In our own industry, this drive towards sustainability has led to Defra developing a legal and sustainable timber procurement policy – Central Point of Expertise on Timber (CPET).

Wood's unique sustainability credentials as a renewable building material compared to aluminium, concrete and steel have been widely acknowledged. Time and again wood is singled out for special recognition. The unique position of wood as a sustainable building material has led the Office of the Deputy Prime Minister's Code for Sustainable Homes to award additional code points based on the percentage of certified timber and timber products both for building and finishing elements. Timber credits are also likely to be awarded in the 2006 BREEAM/EcoHomes standard. The timber industry is currently making concerted efforts to ensure that wood receives its fair share of the London 2012 Olympics construction projects – particularly important as sustainability was a key feature of London's winning bid. So the future looks bright for wood and those who choose it to meet their needs.

Concerns about Illegal Logging

However, questions have arisen regarding the management of forests from which the wood is sourced. Of perhaps most concern is the issue of illegal logging, a trade estimated to be worth more than $15 billion per year.[1] It is therefore increasingly important for those purchasing and selling wood products to be able to clearly identify legally sourced products.

Awareness of the illegal logging issue has been raised through high profile campaigns conducted by environmental NGOs such as Greenpeace and WWF and development and investment agencies such as the World Bank are increasingly turning their attention to the issue. Consequently, there is now a high level of awareness of this issue amongst industry, politicians and through the media, consumers. Last autumn, the House of Commons Environmental Audit Committee held an Inquiry on Sustainable Timber which reported in January 2006. The Committee's verdict can be summarised as; progress is being made towards tackling the issue, but both industry and government could do more.

Concern over illegal logging has led to the development of both governmental and intergovernmental strategies to address the issue. In Europe, public procurement policies are increasingly demanding certified forest products as an assurance of sustainable forest management. Such procurement policies are rapidly becoming a driving force for certification and proving an important source of demand for sustainable forest products.

UK Government Procurement

In 2004, the UK Government established CPET - the Central Point of Expertise on Timber (www.proforest.net/cpet) to assess all five of the internationally recognised certification[2] schemes and provide guidelines for central government departments on legal and sustainable timber procurement. Four of the schemes, SFI (www.aboutsfi.org) FSC (www.fsc.org), PEFC (www.pefc.org) and CSA (www.csa.ca) have since been judged as satisfying their requirements for both legal and sustainable timber whilst the fifth – MTCC (www.mtcc.com.my) – is considered to provide proof of legal sourcing.

EU Measures

The issue is also high on the EU agenda. Building on its commitment at the World Summit on Sustainable Development in May 2003, the Commission published an EU Action Plan for Forest Law Enforcement, Governance and Trade (FLEGT). This is the process by which the EU aims to develop and implement measures to address illegal logging and related trade.

A recent report[3] from the European Parliament welcomed the efforts of European forestry undertakings to give consumers assurances concerning forest management by means of certified wood products and singled out two international sustainable forest management certification schemes – FSC and PEFC as being "equally suitable for this purpose". The opportunity to choose between credible certification schemes for wood sources creates a significant generic advantage over other materials such as concrete and steel, where no chain of custody or certification schemes are available to the purchaser to enable them to make an environmentally credible choice.

The Role of Forestry Certification

In order to meet demand from consumers, public authorities and companies seeking proof of legality and sustainability of wood-based products, the concept of forest certification was developed. It has proven to be an effective mechanism for verifying that wood originates from legal and sustainable sources. Consequently, forest certification has increased exponentially over the past five years; with the area of certified forests now totalling 241 million hectares worldwide by mid-2005 from less than 25 million hectares in 1999. Almost 60% of the world's certified forest area is now located in North America and 36% in Western Europe.[4]

There are more than fifty regional or national forest certification schemes operating throughout the world.

PEFC™

PEFC-16-1-1

PEFC's Role

Since its inception in 1999, PEFC (the Programme for the Endorsement of Forest Certification schemes) has grown rapidly to become the world's largest forest certification umbrella organisation. Millions of tonnes of wood are currently being delivered to the processing industry and then on to the market place from PEFC certified forests.

PEFC is an independent, non-profit, non-governmental organisation, which promotes the sustainable management of the world's forests through independent, third party certification. Sustainable forest management is based on requirements for environmentally, socially beneficial and economically viable management of forests for present and future generations which in practice means:

- No more wood is harvested than is regrown
- Forests are managed in accordance with environmental laws and regulations
- Trees are replanted or naturally re-grown after harvesting, enhancing carbon sequestration
- Workers' rights and welfare are protected
- Indigenous peoples' and owners' rights i.e. those who are earn their livelihoods from and/or live in the forest, are respected
- Forests are maintained as habitats for wild animals and plants
- Functions of forests for the protection of water, soil and climate are protected
- Biodiversity of forest eco-systems is conserved
- Pesticides and herbicides are avoided whenever possible
- The origin of the wood raw material is verified
- Uniquely, additional Natural Capital is created.

PEFC - Your assurance of legal sourcing and sustainable forest management

PEFC is the leading global forest certification system ensuring availability of certified raw material and controlled flow through its international chain of custody standard.[5] The PEFC scheme was created in 1999 to provide harmonisation and mutual recognition for national forest certification schemes. It was established in order to avoid a proliferation of different labels coming on to the market causing confusion amongst consumers, to prevent obstacles to international trade and to save time and money. By providing a mechanism against which national forestry schemes could be measured, the PEFC scheme offered a robust alternative to early certification schemes which were based on a forest by forest approach – thereby cutting the costs of participation for small producers and enabling rapid rollout.

It is based upon internationally approved accreditation[6] and independent, third party certification procedures and processes. PEFC's certification standards are based on ISO[7] Guidelines whilst its accreditation standards meet International Accreditation Forum (IAF) requirements.

To date, PEFC has endorsed twenty one national forest management schemes. Its flexible approach to regional/national certification makes it the preferred choice of 15 million European small-scale forest owners. Schemes under the PEFC mutual recognition umbrella are therefore able to supply the market with a growing volume of certified timber; currently from over 187 million hectares of certified forest.

PEFC certified Timber from Finland

Higher Profile for PEFC UK

As the world's third largest timber importing country, the UK is recognised as a key market for PEFC-certified product and additional resources have recently been allocated to step up the expansion of the programme here. Last year, the PEFC UK Board was strengthened by the appointment of four new directors. These new appointments significantly increased the range of skills and expertise that the PEFC team will be able to draw on in the UK with the certification, consumer-facing wood products, forestry, timber and paper sectors all being represented.

Michael Clark now chairs the Board. He brings to the Board a wide knowledge of the paper sector. He is a Vice President of the Consumer Packaging Division of the M-real Corporation and the current President of Pro Carton International as well as being a board member of the PEFC Council in Luxembourg. Professor Hugh Miller OBE is a former Head of the Department of Forestry at the University of Aberdeen and brings to the board a very distinguished academic record as well as a wealth of experience and involvement in forestry matters, both in the UK and abroad. Peter Latham is Deputy Chairman of James Latham plc. a leading company in the UK timber industry. He chairs the Forests Forever Council, serves on the Governing Board of the Timber Trade Federation and is on the Council of the Commonwealth Forestry Association. He is a Fellow of the IWSc.

In addition to strengthening its UK capacity, last November the Board appointed a firm of consultants, Penside Ltd, to develop and implement a communications strategy. Penside are now responsible for all external communications on behalf of PEFC within the UK.

So, with the international PEFC programme now able to provide high volumes of certified timber to the market, PEFC in the UK has geared up to meet the demands of a growing market for certified product and to promote its use down the supply chain.

For more information visit the PEFC web site at www.pefc.co.uk

1. United Nations Economic Commission for Europe/FAO – Forest Products Annual Review 2004-2005.
2. Certification is the process of establishing whether or not a standard has been met usually carried out by a certification body or certifier.
3. European Parliament Session Document – Report on the implementation of a European Union forestry strategy (2005/2054 (INI) – Committee on Agriculture and Rural Development – rapporteur Heinz Kindermann. Published 31 January 2006.
4. United Nations Economic Commission for Europe/FAO – Forest Products Annual Review 2004-2005.
5. Chain of custody is the unbroken path which products take from forest to the consumer including all stages of manufacturing, transportation and distribution.
6. Accreditation is the mechanism for ensuring that the organisations which undertake certification (certification bodies) are competent and produce credible, consistent results.
7. ISO is a non-governmental organisation made up of a network of the national standards bodies from more than 140 countries in all regions of the world. ISO has produced a number of Guides to assist with the development of certification schemes. Those on which the PEFC scheme is based are ISO Guides 59, 61, 62 and 65.

Martin Gale CBE is Vice President, International Forestry at UPM-Kymmene Corporation; Chairman, Tilhill Forestry Limited; Non Executive Director, Forestal Oriental SA (Uruguay); Non Executive Forestry Commissioner; Non Executive Director of BSW Timber plc. Director of Confederation of Forest Industries (UK) Ltd. and a member of the PEFC UK Board of Directors.

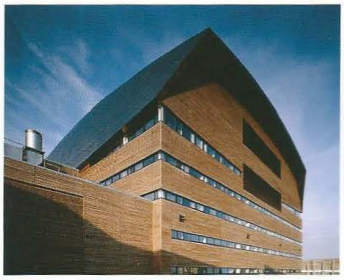
The Wales Millennium Centre, Cardiff

by Rob Firman

This paper by Rob Firman BSc BArch RIBA, Senior Associate Director Capita Percy Thomas was presented at the IWSc Conference 2005 in London.

The Wales Millennium Centre is the first national cultural institution to be built in Wales for over fifty years.

A major consideration for a building that will have such importance to Wales was that it should be adopted by all of the people of Wales, whatever their social or geographic circumstances and that it not be regarded as simply a Cardiff or South Wales facility. We used these images and quotes to reinforce this philosophy and to distance our project from the issues that had dogged and ultimately killed off the Cardiff Bay Opera House project in 1996.



This consideration is manifested in the Architecture as a series of abstract ideas and allusions to the geology and natural history of the Country, its Industrial Heritage and of course to its Cultural Traditions.

The architectural themes that run all the way through the building are all established in the formal massing of the building and in the design of the principal external elevations.

These themes can be summarised into three main controlling factors of geometry, texture and colour.

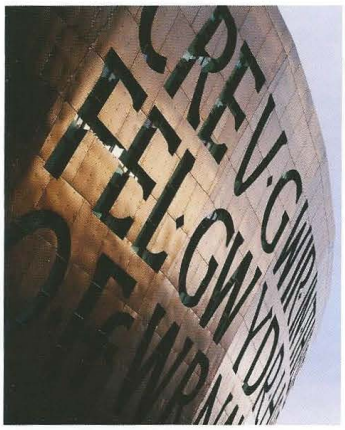
A basic set of rules was established from these themes which were applied throughout the design of the building and its interior spaces:

- -the geometry has a strong horizontal emphasis, utilising either 'near-horizontal' or tapering lines or plain horizontal patterns.
- -texture; materials must be used in a way that suits the characteristics of the material, so it is easily identified or recognisable.
- -colour comes from the inherent 'self colour' of the materials used - it is not an artificially applied surface.

The public faces of the building are clad in polychromatic Welsh slate from the north of the country and sourced from material rejected by the roof slate industry. The slate is laid in tapering strata reminiscent of the unique coastal cliff formations of South Wales.

The theatre, which is the heart of the development and all of its support accommodation, is encased in a patinated stainless steel 'shell' using a fixing method that resembles the construction of blast furnaces, steam trains or ships, with large metal plates fixed to the supporting substrate at close centres by rivets.

The monumental inscription that dominates the public face of the building is a reference to the Roman occupation of Wales and is made using a font derived from carvings found in the Roman settlements of Wales. The inscription is a series of individual letter windows which frame views into and out of the theatre foyer area and link it to the public space at building's main entrance.



The final external material used on the building is waney-edged timber. It covers by far the largest area of the building envelope. This material was historically used for industrial and agricultural buildings around the Principality.

In selecting this material we faced a number of technical challenges and needed to persuade both our Client and the Contractor that we had carried out research, consulted with respected Industry advisors, suppliers and contractors and that its selection remained true to the architectural concepts underpinning all materials selection for the project. We also needed to demonstrate that it was an affordable alternative to other potential materials selections such as profiled metal or brickwork.

The external cladding used is British grown Sitka spruce, 22mm thick and comprises individual boards 3metres long with a face dimension range of 150-225mm. Sitka spruce is classified as 'low-movement', that is to say it does not have a tendency to shrink or swell excessively after fixing and, in any case, our decision to install it with boards overlapping meant that any differential movement between boards would be contained.

We investigated durability and maintenance concerns and with assistance from TRADA ultimately specified a pressure impregnated, water-borne copper-chromium arsenic treatment giving a lifespan in the order of 30 years. In areas of high risk of impact due to moving vehicles in the Get-In Yard, the individual boards are easily removed and replaced.

The boards are individually fixed to a support frame and act as a rainscreen rather than an impenetrable water-proof barrier – the cavity needed for ventilation behind and around the boards also being used to drain away any water that does manage to penetrate the build-up. Round-headed stainless steel ring shank nails were used with 2 fixings per depth of each board at 600mm centres along the length of the board (12 fixings per board)

We believed (and were able to persuade our Client) that the selection of waney-edged timber was consistent with our selection criteria for other materials used on the building – like the slate the timber would have (and indeed does have) a beautiful natural grain that will only improve with age. It satisfies our 3 basic rules of geometry, texture and colour.

In the maritime climate of Cardiff Bay there are many examples of man-made materials including metal cladding and brickwork that are not weathering evenly to the detriment of the appearance of the buildings to which they are applied. Conventional profiled metal claddings are particularly vulnerable to the high salt content of the waterside air and, as our final *coup de grace* we were able to demonstrate that the waney-edged timber was significantly cheaper than its competitors, representing only 6% of the overall construction cost.

Having resolved the specification and detailing of the external timber on the building, we turned our attention to the inside of the complex and we used hardwoods extensively throughout the principal public spaces.

The first space encountered by the visitor is a Concourse comprising of two spaces on both sides of and linked by the Main Entrance area. These spaces are used as venues and destinations where people are encouraged to congregate rather than simply pass through.

The balconies can be thought of as an abstract cluster of trees as one might find at the edge of a forest. In this analogy the open Concourse space is a 'clearing' - a communal gathering space.

The edge of the forest also has a resonance with folklore, with magic and with theatre in that it represents a boundary between real and imaginary worlds.

The physical transition in this building happens through the white wall behind the balconies and the wall itself lines up on plan with the proscenium arch of the main theatre auditorium.

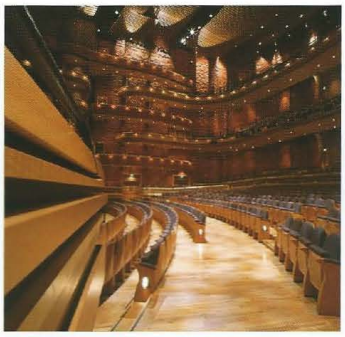
Continuing the 'forest' analogy, the balconies are supported by columns that can be thought of as the trunks of trees. The coal measures of South Wales were formed from the prehistoric tree fern forests that covered the land.

The texture of the column surfaces is an abstracted version of the geometric pattern of the scales of tree-fern trunks found in fossils amongst the coal excavations of South Wales and collected by the children of the valleys communities for generations.

The faces of the balcony parapets inside the building echo the patterns of the external stonework and are faced with gently tapering strata-like bands of varying species of native hardwoods, lacquered to emphasise their natural colour and grain.

All of the hardwoods used on the concourse balconies were grown in the forests of mid-Wales. We know this because we went there!

The range of species used was determined by market availability of species known to be cultivated in the Principality and whilst we specified use of 25% oak, 10% alder, 15% brown oak, 20% cherry, 15% ash and 15% chestnut we suggested that if these volumes were not currently available, small quantities of pear, beech, walnut and spruce would be considered.



The final arrangement of the different species was decided by the craftsman on site with only a small section mocked-up for review and approval at the Joinery workshop as a reference point. This underlines a further desire we had as Architects to share ownership of the highly specialised works in the building with those who did the work. The dividend for the building is work of the highest quality.

On entering the auditorium it is immediately apparent that the balcony fronts to the audience seating tiers have the same variegated hardwood facing used in the Concourse, but here their profiles are tailored to meet acoustic requirements and they are consequently more complex.

The formal concept for the audience seating balconies is to treat them as physically disconnected from the walls. The balconies appear to grow out of the shaft formed by the technical control rooms at the back of the Auditorium, like boughs growing away from the trunk of a tree.

These structures are all built of hardwoods, principally European oak which is used for both floors and ceilings installed on site as 19mm thick strips fixed to a plywood substrate.

The audience seating is attached robustly to the oak floors through solid European alder side-panels, made in Italy to our design and providing a final tactile experience of the use of wood in this building for the visitor.

The ceiling of the auditorium is defined by a series of acoustic reflectors that are faced with oak strips formed into ribbed surfaces to provide the optimum acoustic performance. The reflectors are connected to each other to form a single sculptured ceiling by oak louvres.

The use of wood in contemporary auditorium designs is not unusual – indeed it is widely thought that musicians request it or on occasion insist on it because they believe it makes their music sound better. In the case of the WMC, native hardwoods were selected as part of a thoughtful composition of ideas, rooted in the basic architectural aspiration.

In the citation we received with the RIBA Award given to the building this year it was written that *"At a point when devolution has given added impetus to the search for a national cultural identity, The Wales Millennium Centre represents huge ambition"*. Ambition fulfilled in our opinion by the contribution made by the use of the most ancient of modern materials – the wood.

Company profile - Whitmore's Timber Co Ltd

Serving the needs of craftsmen and specifiers for quality native hardwoods has been the business of Whitmore's Timber Company since the turn of the century. The company also has a reputation for supplying carefully selected and seasoned hardwoods from Continental Europe and North America. From its centrally located 20 acre site at Claybrooke Magna, near Rugby, Whitmore's are able to supply nationwide delivery from stock a comprehensive range of seasoned and fresh sawn timbers for many uses in building and restoration work, furniture making, panelling, joinery, boat building, fence and gate manufacture, for coastal defence, river, canal and construction work and for specialist products like musical instruments.

Timber air drying.

Hardwood sourcing is a careful process. A profound knowledge of timber species and experience of buying are the key elements in purchasing the right material to meet stringent quality standards for stock. The company's buyers cover Britain in search of exceptional Oak and other hardwoods, buying the best prime butts, and travelling all over Europe in search of quality timber.

Processing is a slow business. Logs are sawn through and through or cut with one square edge, and then seasoned. Some of the larger logs, especially the longest and the straightest, are set aside to stabilise for two to five years. Many of the larger Oak logs are quarter sawn in the traditional way. Timber is air dried and care is taken to keep species requiring slow drying protected from high winds and sun to minimise face checking, end splits and distortion. Covered storage is mainly used for less durable woods such as Beech, Sycamore, Hornbeam and Lime, which may also require stacking precautions to retain good colour. Whitmore's generally prefer to kiln dry at its on site facilities, wood which has first been air dried; and thereafter all KD stock is maintained under cover.

Sales and delivery require a rapid response, so the sales team in Claybrooke can take enquiries but the national sales team will visit anywhere in Britain; or buyers may visit the yard to inspect stock and discuss specifications. 2006 sees the first full year of operation of the new milling facilities in Claybrooke, which enables an efficient service of custom cutting in addition to making available the usual standard sizes. This is part of an ongoing programme of investment and modernisation which now enables Whitmore's to offer goods machined to customer's specifications and profiles.

"A species for every job" is a maxim of the company - so important for wood. Extensive stocks enable a quick and efficient service to meet buyer's requirements, especially in Oak, Ash, Elm, Cherry, Beech, Sycamore, Lime and Walnut - whether it is Sycamore for fiddle backs, Lime for model making and carving or Walnut for gun butts.

Constructional timbers for restoration.

Oak is always the main species for Whitmore's. The company has its own simple definition of European Oak grades, not believing in having an extensive list of different grades to confuse issues. The philosophy is to get as much detail from customers, and work with them, to ensure the material delivered meets and exceeds expectations. Grades are therefore organised into four main categories:

1. First Quality / Prime Grade is the highest quality of European Oak which will be consistent in colour, and have small sound knots.

2. Character Grade has a variety of grades within it, but will generally permit more defects than First Quality, permitting larger knots, inter grown knots, more sapwood, colour variation and will also include heart shake and checking.

3. Second Quality / Rustic Grade permits even more defect than Character Grade. Most defects are permitted within this grade including large knots, splits, colour variation and sapwood.

4. Pippy Grade is very popular featuring the presence of frequent pin knots.

These criteria cover the basic differentials between European Oak grades but selection is critical to Whitmore's as a leading supplier of European Oak.
The company has supplied native and European timbers for building restoration

New machining facilities at Claybrooke Magna.

projects, joinery and furniture and has had some notable successes with The Wood Awards in recent years. In 2004 The Gold Award winner Norwich Cathedral Visitors Centre was built with English oak, and the shortlisted Cake House in St James's Park (now "Inn the Park") was largely built with FSC certified Austrian Larch all supplied by Whitmore's. This was an example of a specialist procurement commission unusually involving European softwood. Last year Whitmore's was the nominated supplier in two projects entered into the 2005 Wood Awards. Bovey Castle, a grade II* listed building in Dartmoor National Park, was shortlisted in the Conservation/Restoration category, and the new lychgate at St. Helen's Church in Sefton so impressed the judges, it received a Highly Commended award for the Small Project category. The old lychgate gate had been in a state of disrepair for so long that repair was virtually impossible. A replacement was made to the original design in English Oak which, with specialist experience in timbers for reconstruction and restoration work, was specially selected for the project which continues to attract a great deal of ongoing publicity.

More recently Whitmore's has supplied European and American hardwood material for a redesign of the private dining room at Raymond Blanc's famous Oxfordshire hotel "Le Manoir". This is part of a new theme to create new panelling in black walnut round the walls and a large display cabinet, all set off by huge panels of cut glass. Work in the main reception includes redesigning the desk and creating new panelling and display cabinets.

Whitmore's Timber Co. Ltd. recognises a responsibility to its customers, suppliers and staff to base its commercial activities on well managed forest resources. Accordingly the company is also committed to achieving environmental best practice throughout its activity whenever this is practical. In pursuit of economic growth and a healthy environment it is understood that these are closely linked and that ecological protection and sustainable development are the responsibility of all, including business, governments and communities. The company, being FSC and PEFC accredited, is committed to buying all hardwood and softwood from legal and renewable sources, and seeks evidence that suppliers are in compliance with this policy. As sources of certified timber become more available the company will give preference to certified timber wherever practical and will not purchase timber where it is known to have originated from illegal sources and will not purchase any timber species prohibited under Appendix 1 of the Convention on International Trading on Endangered Species (CITES).

Visit www.whitmores.co.uk for details of the constructional, joinery and furniture hardwoods, as well as worktops, decking and flooring, and for an update on some of the projects Whitmore's is involved with. The company's environmental policy in full can also be viewed and orders can be placed for a brochure giving species details about a full range of hardwoods.

Whitmore's supplied English Oak to the lychgate at St. Helen's Church, Sefton - Highly Commended in The Wood Awards 2005.

An Alpine Rescue

By David Woodbridge

The rescue of a wood and stone structure near to collapse and its conversion to a well appointed residence in the French Alps.

In the Doron Valley nestles the small Savoie town of Bozel with its satellite villages in amongst the steeply wooded valley slopes. As yet this area, although only separated by a mountain range from the major 'Three Valleys' ski resorts of Courchevel and Meribel, is only just beginning to witness the growth of the winter sports industry. The villages around retain much of their rural character and many of the hillside farms remain active. Even so the region has its fair share of rural buildings that are falling into disrepair. Such buildings offer a challenge to those prepared to refurbish them as dwellings and to retain, as much as possible, their vernacular character. With wood and stone having been the traditional building materials for centuries this challenge includes the sympathetic and functional use of these naturally occurring materials rather than the timber clad concrete shells that dominate the new-build winter sports condominiums.

The two hundred year old building that is the focus of this article is in a village close to Bozel on the steeply rising northerly slopes of the valley. It is thought to have been in part a leather working establishment with a vaulted semi-basement or *cave* (as such structures are know locally), and a substantial loft space that may have been used for storing cattle fodder.

In the nineteen eighties about two thirds of the ground floor had been converted into a two room self contained apartment constructed in a concrete enclosure within the shell of the building. To get sufficient head-room the tie beam of a principal truss constructed from solid pine logs had been cut back with, it seems, only limited consideration of its structural significance. In a gesture to replace some of the vertical supports to the purlins a bolted rectangular softwood frame had been inserted on the upper surface of the new concrete shell.

The inserted box frame intended to replace the original roof truss.

The integral concrete shell along with the rendering of the rear stone elevation completed the enclosure and into which were cut two windows and a front door. All this, being a complete entity had clearly detracted the owner from any sense of necessity or duty to maintain the remainder of the building with the inevitable result that it was rapidly falling into a dilapidated state. The main exposed timber columns supporting the gable end and hay-loft balcony were rotting and the vertical cladding was hanging from the structure like spaghetti.

The end gable before renovation.

The reconstructed gable and balcony.

This was the situation facing the new owners in 2004. Their first concern was to stabilize the building and to prevent further deterioration of the timber structure. In the process it became clear that it would not be financially viable to remove the concrete shell and that the rooms that formed the apartment would have to be incorporated into the overall design. The renovations had to meet the strict building laws in respect of safety, hygiene, structural integrity and insulation. Added to which, the external elevations needed to match vernacular traditions. Windows and roof lights were needed, proper access front and back, drying out and creating through ventilation for the *cave* and, last but by no means least, the construction of an acceptable solution to the altered geometry of the roof structure.

The large open space of the hay-loft would become the main living area and kitchen whilst the ground floor would contain two bedrooms with full *en suite* facilities. The undeveloped third at the front of the building would form a substantial hall area with a broad stairway, constructed in locally sourced and processed pine, to the first floor.

These plans were approved and work commenced in May 2005. The stabilising of the roof was achieved by inserting two pine columns that had been discovered amongst the volumes of clutter cleared from the hay-loft. Also procured locally was further rough hewn pine member for a high level collar.

The new roof supports.

The plans included a substantial glazed section in the gable to take advantage of the mountain views and to include large fully glazed sliding doors that issued onto a newly constructed balcony. In turn the balcony leads to an external staircase constructed in dark red meranti to the garden and the two level patio softwood deck.

With temperatures plummeting to -20°C and lower in the winter insulation, quite apart from the statutory requirements, is an important issue as is the choice for internal heating. For the former, to save on internal space, the decision was taken to

construct the insulated zone on the side and rear external faces. To do this a timber stud frame was constructed to provide the insulated zone and to support a fully clad exterior elevation of locally sourced waney edge fir, board on board. For the road-side elevation it was however decided to retain all the original stonework and barn doors. These, when opened, reveal a modern softwood double opening conventional front door. In normal circumstances the old doors can be hooked back in the manner of shutters.

Apart from constructing stone steps to the door and down to the cave, there was little to do in the front and with the large roof overhang adequate protection from rain and falling snow already existed.

The heating has been solved in three ways. Firstly, and partly because of expense, it was decided to use electric radiators in the bedrooms and hall. Secondly, for the first floor, electric under-floor heating has been installed. And thirdly, to supplement the under-floor heating, a large corner fireplace on which to burn logs has been constructed using an existing chimney.

It had been decided to maintain the wood look in the main living space. All the roof beams have been cleaned and lightly stained. Oak overlay was considered for

The front elevation.

the floor but rejected on account of cost. From past experience of the scuffing and damage to spruce floors in ski chalets this timber was not an option either. The solution arrived at was Siberian larch, manufactured in tongued and grooved panels and suitable for under floor heating. The larch has an oiled finish which, with its pinkish red colouring, marked growth ring figure and randomly interspersed live knots, complements the exposed timber roof beams and internal joinery. Much of the larch is quarter cut which will make for a harder wearing surface.

For all the internal trim and the kitchen units heat-treated spruce has been used. In a process popular in France, and sold under the name of *Chablis*, the surfaces are given a brushed-wood appearance

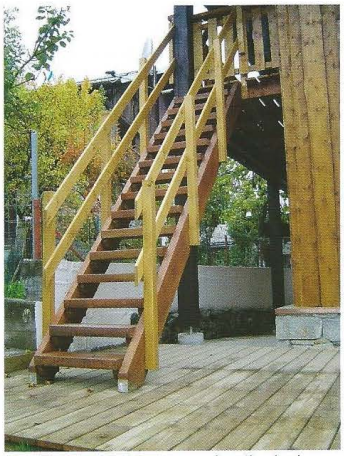
The open plan first floor.

which, along with the darkening of the wood fibre that results from the high temperature drying, replicates the weathered softwood that abounds in the traditional buildings in the region.

In the living area much of the furniture chosen maintains the rural and antique feel having been sourced from specialist restorers in the Doron valley.

A requirement for dwellings in the region is the provision of undercover car parking. To meet this a timber car-port has been constructed, again using locally sourced softwood. The design is both rustic and functional using what might seem to be rather over-sized timbers. However, the overall effect is in keeping with the timber building traditions of the area, including the decorated fascias.

With the work complete the owners moved in during October, five months after the transformation and rescue began. Although the solutions for this renovation project may not have been particularly high-tech, they represent a decidedly practical and sympathetic approach to some quite complex problems and do credit to the vision of the owners and the



External Staircase and patio deck.

craft skills of the joiners employed. Above all a modest building has been rescued from what would have ultimately become a partially collapsed and unattractive ruin. Along with other renovations that are being

The kitchen area which retains the original stone wall on two sides.

carried out in the village which generally help to sustain the well-being of the locality, it will play its part in enhancing the visual impact of the region.

The new car-port complete with snow stabilises on the roof and in the distance the Doron Valley and Bozel.

The Mouse, the Elephant and Computer

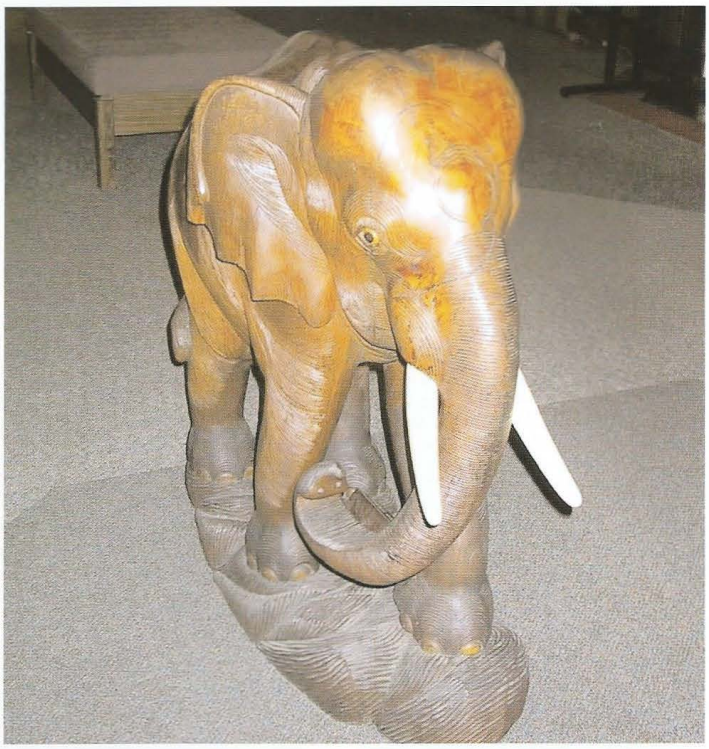
By Professor Philip Evans FIWSc, UBC.

The computer mouse is such a familiar fixture in our lives that we scarcely give it a second thought, but without the mouse there would be no Windows operating system, no pull down menus, and on-screen navigation would be a slow cumbersome, keyboard ridden affair. We can thank Douglas Engelbart for coming up with the idea of the mouse and the point and click interface in 1963, and Xerox for commercializing it, as part of the Xerox star 8010 in 1981.
The mouse acts as the interface between the computer and the user or more specifically their brain-hand axis. Interfaces are a common feature of natural multidimensional systems and materials.

For example most natural materials such as bone, shell and wood possess numerous interfaces at different length scales (macro, micro, nano) linking their structural components. Successful interfaces must be compatible with the components or materials that they link, and generally they share some of the characteristics of both. Viewing the mouse from this perspective one is struck by how much similarity there is between the mouse and its digital associate, but the lack of affinity with its human partner. Part of the problem lies in the material used to manufacture mice, plastics, which despite their wonderful versatility are not noted for eliciting favourable tactile responses in humans.

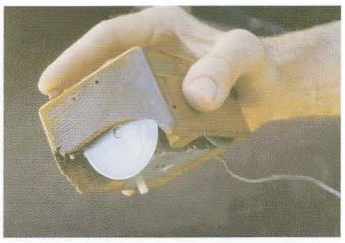
Wood on the other hand is tactile, with grain and surface texture, warmth, apparently softer than other materials, but with resilience and structural qualities. It is a natural hydrated material with a characteristic smell that has a long association with humans dating back to our earliest ancestors. As a personal level I had frequently observed the tactile response elicited by wood. For 15 years I

worked in a University building blessed with a quarter-sized, solid teak, elephant in its foyer. The elephant had a wonderful rounded head, and scarcely a person entering the building could resist running their hand over the head of the elephant. In fact generations of students and



professors had polished the elephants head with their caresses and given it a wonderful feel. Over time I became convinced that a plastic elephant would not elicit the same tactile response (and apparent pleasure) from people, whatever its shape or form.

Pondering the tactile qualities of wood further I became aware of many more applications in which wood was the material of choice despite the availability of other materials with superior mechanical



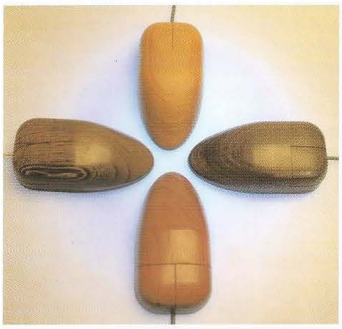
properties, for example pro-league baseball bats, tillers on sailing boats and paddles for canoes and kayaks. Why I wondered wasn't wood the material of choice for the computer mouse; the tactile human/machine interface par excellence? Researching the subject I was delighted to learn that Engelbarts first mouse was in fact made of wood (see below). This is widely acknowledged by insiders in the computer industry but elicits responses such as (ah yes, WOOD; how archaic). Engelbarts design is ergonomically challenged by today's standards, although I liked its sturdy workman-like appearance and solid character.

At the Centre for Advanced Wood Processing at UBC (host to the Canadian Branch of the Institute of Wood Science) we decided to update the Engelbart mouse and make a fully functional ergonomic optical mouse from solid wood which would have great tactile and visual appeal. Modern computer-numerically-controlled (CNC) multi-axis wood processing centres can rapidly machine wood into virtually any shape so we weren't limited to any particular form, unlike the first mouse. We wanted the mouse to have a solid feel and therefore we machined the mouse and its different components (top, base and buttons) from a single solid piece of wood. The lack of a post-processor for our CNC wood processing machine meant that we had to write all of the machine code to manufacture the mouse including x, y and z curvature functions, which describe the geometry of the mouse and enable the wood processing centre to machine the front, sides and back of the mouse (rate and range of descent of the tool). In addition to this challenge we also had to

select the right tools for machining woods with different densities, design appropriate mountings for the shell and base and cut out the buttons and the opening for the tracking beam of the optical sensor (at the base of the mouse). Medium density fibre board and solid pine wood blocks were used to manufacture prototypes and it took many months before we solved the various technical problems and were satisfied with the basic design of the mouse.

Finishing the mouse presented particular problems as we definitely wanted to avoid any synthetic chemicals (varnishes, lacquers etc.). Initially we chose a natural finish consisting of walnut oil and beeswax, but this finish was unevenly absorbed by the combination of side and end grain on the anterior surface of the mouse producing a blotchy appearance on one of our first prototypes made from walnut. Our final solution was to dispense with finishing all together and rely on progressively sanding the surfaces of the mouse using a series of abrasive papers eventually finishing with an ultra-fine 15,000 grit paper; conventional sand paper is 120 grit! This approach produced super-smooth surfaces which were very pleasing to the touch – like the teak elephant's head.

As a demonstration we have manufactured four complete mice from different woods, each with their own appeal in teak, ebony, purpleheart and cocobolo.



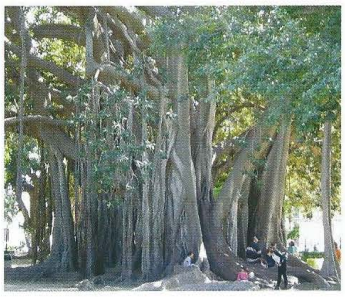
The mice plug into the USB port and are pleasant and restful to use. In fact, I'm using on of them to write this article. The universal response of everyone who sees them is that they want one. The mice, however are not for sale (not even to wealthy owners of famous software companies).

Professor Philip Evans (FIWSc)
Director of Centre for Advanced Wood Processing
University of British Columbia
Vancouver, Canada

Mr Zbigniew Krupowicz
Software Consultant
Microsoft Corporation

Ficus macrophylla subsp. *columnaris*

In the Palermo Botanical Garden and in the city's Giardino Garibaldi there are stunning specimens of the huge Ficus trees.



The tree shown above is in the Giardino and is said to be the oldest tree in Palermo. It is dedicated to Giuseppe Garibaldi (1807-1888) who played a central role in the *Risorgimento*, the movement that reformed and united the country into the Italy that we know today.

These trees, with their vast spread of branches and thick dark green evergreen leaves, form great zones of cool and shade and a welcome escape from the hot Mediterranean summer sunshine. The size of the massive trunk and root system can be appreciated from the children climbing in amongst the roots.

This picture shows the aerial roots

developing and when they reach the ground they penetrate the earth spreading across the surface as they do so. Not only do they then provide the tree with an additional source of water and nutrients but, as they develop, they turn into new stems that support the lateral branches, hence the columnaris in the Latin name. Some of these branches extend over a considerable distance as can be seen in the picture, see top right. This particular tree, planted in 1845, is in the Botanical Garden.

These trees are a member of the Moraceae family and are native to the humid and sub-tropical regions of Asia and Australia.

References: http://ortobotanico.palermo and the Orto Botanico information leaflet.

Innovative uses for timber

The pictures below show an original use for treated round wood when used to define traffic lanes and to steer vehicles clear of roadway obstacles. These pictures were taken in the French Alps.

Have you any examples of the utilization of wood that are not mainstream? If so perhaps we could publish them in future issues.

As editor I will be pleased to hear from our readers.

Articles and photographs by David Woodbridge

Some reflections on approaching 50 years as a member of the Institute

By Clive B. Glossop AIWSc.

In July 1953 I joined the timber trade, taking a junior position with the North London hardwood importers Hahn and Co Ltd. In those days ships were loaded by hand and horses were still hauling the barges up from the London docks along the River Lea towpath for men to unload the timber, using the now long forgotten leather shoulder pads as they carried their loads up the running planks onto the wharf.

In September of that year, armed with my x10 lens which, to this day, I still carry in my pocket, I started my first year of the Timber Development Association (TDA) Timber technology Certificate run as an evening class studies at Enfield College (now Middlesex University). Three years later, having nearly completed the course I became one of the first junior members of the Institute, then itself in its infancy. In 1958, with the examinations behind me I achieved CMIWSc status.

At that time some of the well known and founder members of the Institute were E R Brooke-Boulton, Philip Reece, Professor F R Jane, J Pound, S R S Warwick, Jim Gammie (remembered by many for his teaching of timber trades practice) and my first tutor at Enfield, H Peters. Mr Pound wrote a book on Practical RF Heating for the Wood Industry, a copy of which I received as a 1958 college prize and still have.

By 1960, having worked in laboratories as a technologist/scientist at Dunlops in Waltham Cross I studied on my own and attended the TDA Instructor's Refresher Course at Cambridge. This course, which ran for several years, was designed for those dedicated to the timber industry who turned their hands to lecturing on timber technology at the many evening classes that were run at this time up and down the country. Spurred on by my own study and the Cambridge experience I became a part-time lecturer in timber technology at the S W Essex Technical College and Art School (now the South Essex University). As a result of this work I feel, like others I know, that I was instrumental in the next generation students becoming Institute-minded and eventual members.

During this period a move to William Mallinson and Sons Ltd in the City took place and whilst there I completed my AIWSc examinations. My thesis was on the problems met in HF gluing of complicated wood bends. Looking back, an ambitious topic but influenced by Mr Pound no doubt. My certificate was signed by Mr Brooke-Boulton, President of the Institute at the time.

Remaining in the City I became more involved in the London branch of the Institute and served on its committee for five years in the mid-seventies. At that time I recall other figure-heads in the Institute such as Ian Lee, Lewis Bayman, Christopher Latham, W E Vesey, Gerald Hart, W E Bruce and Dr W P K Findlay who wrote the authoritative books of the time and for many years hence, *Timber Decay and Preservation*.

I remember during most of those years that the London Branch meetings were mainly held at Imperial College and I regularly walked through the long and windy subway from the South Kensington underground to the college and back. Numbers attending these meetings were invariably good, whether the subject was timber engineering or wood science. In those days there was a great enthusiasm for extending one's knowledge in wood, usually at one's own expense and in one's own time.

From 1971 to my retirement in 1998 my work was entirely with established timber agents, brokers and shippers. During the whole of this period my wood science knowledge helped to solve many disputes and technical and manufacturing problems. There is no doubt that being a qualified member of the Institute led to due respect from both UK buyers and users of timber products and in particular foreign contacts. In my case this applied to particleboards and fibreboards. It is of note that on one occasion another Associate member of the Institute phoned me with a major problem with a customer that had brought the entire factory to a stand still since the staff were convinced that the hardboard contained 'free formaldehyde'! Two hours later and with reports from my two suppliers the fears were laid to rest and the factory was in production again.

During my final years in the trade I remained in touch with the Institute whilst also helping on the TTBS Committee for London and the Home Counties.

After retirement I served from 2001 to 2004 as a member of the IWSc Southern Branch Committee, which unfortunately has now closed due to the problems of being able to sustain interest and support. This makes me seriously wonder where the 'new blood' will come from. How are we going to attract the new generations of people to participate in and carry forward the challenges of the timber industry and all that it stands for?

Looking back to the era of the horses and canal barges the extensive use of the x10 lens and microscope slides, I have no regrets at becoming a wood technologist. On the day I became an Associate member in 1960 I was offered my first job in the City, and every time i took new and more senior employment, the Institute qualifications continued to stand me in good stead, especially when working for foreign suppliers, whether they were in Europe, Asia or America. The IWSc is respected internationally. To maintain this status it must, as in everything scientific and technical, move forward with the times otherwise the youth of today will not become the wood science technologists and timber engineers of tomorrow. Their attention must be drawn to the potentials that a career in the timber industry can offer and how the attainment of qualifications such as the Institute offers can assist them in their careers.

In support of Clive Glossop's last paragraph an example of the Institute taking constructive steps to 'move forward with the times' is the far-reaching revision and reprint of the Certificate Course, now published in full colour and in modular form. The Course is further discussed in the article on page 13.

David Woodbridge Editor

Loading softwood in Sweden in 1956 using the ship's tackle and stowing the timber piece by piece (bottom left)

Training News

by David Woodbridge

the major changes that were underway in the presentation of the Instituteís Certificate Course (Issue No.10 Spring 2004). The Course has now been in operation for over a year and the first groups of students have completed the Course in its new and updated format. It seems therefore an appropriate moment to take stock of the situation and to reflect on the way that the Course is being delivered and the progress and response from the students involved.

It may be helpful at this stage to remind our readers of the layout of the Course in its new structure.

It is in modular form and is designed for distance learning but with an essential element tutorial support. The 11 modules are grouped according to their content.

1. The Core Module-Timber Technology:
   - Wood Structure and Timber Properties
2. Technical modules, which include:
   - Moisture in Wood and Timber Drying
   - Timber Processing
   - Timber Protection
3. Resource Modules, namely:
   - Softwoods
   - Hardwoods
   - Panel Products
4. Use Modules that cover:
   - Carcassing and Strength Grading
   - Joinery and Appearance Grading
5. Commercial Modules that relate to:
   - Timber Trade Practice
   - Yard and Warehouse Operations

Depending on the need other optional modules may be introduced.

Whilst it is possible for someone to study individual modules the route to be taken to gain the Instituteís Certificate Course Award (CMIWSc) is to complete the Core Module and then to take 5 of the Optional Modules (listed in items 2 to 5 above). There is an examination on completion of the Core Module but thereafter the Optional Modules are assessed by specific tasks and projects set in each module.

To provide the learning support each student is assigned to an IWSc approved tutor who, in addition to the face to face tutorials and the assessment of the activities and projects provides a help-line to tackle problems when they occur and to give guidance and advice when needed. Furthermore a mentor, usually at the studentís place of work, is nominated to provide day-to-day support as and when needed. The mentor is normally a manager in the company, and usually based at the same location as the student.

As one of the approved tutors I can speak from first hand experience. My approach has mainly been directed to providing tutorials on an in-company basis although other tutors favour the use of a centrally located training centre to which students travel. Being a distance learning course however, much of the study has to be done in the studentís own time, but even here he or she can rely on the support of the tutor, by phone or email for example. One of the questions that I often get asked is what are the advantages of a group as apposed to an isolated learner. This is a tricky one to answer but from my experience I favour the group approach as there is no doubt that students learn from one another and frequently an element of competition enters into the course. This can also help to sustain motivation. A further service that the tutor may offer is supporting notes. In the ones that I issue for each module I provide additional comments and explanations, suggestions for seeking out information from the internet and references to the textbooks that are recommended for the course.

The photographs in this article are all of Foundation and Certificate Course study groups within the James Latham Group. Not only does this approach bring together staff members who are studying the Instituteís courses from neighbouring branches within the group but it provides opportunities to relate the actual course content to the timber and wood based boards on site. On occasions the branch chosen to hold a tutorial may be specific to the module being studied, for example a branch that has major stocks of sheet materials is the obvious choice for the Panel Products tutorial. In other such situations there have been opportunities to visit kilning and wood machining facilities.

With this mix the modules can be successfully completed by a combination of distance learning and home study. These are supplemented with the tutorials, the opportunities to share the learning by communications within the group, and to add to that, the availability of the actual wood based materials and timber processes.

Some of the more practical projects set within the course positively benefit when done as a group exercise. For example one of these projects requires students to carry out a series of observations on the performance of timber in bending. The selection, preparation and recording of the samples works well within a group when individual group members can be assigned certain tasks. The actual bending tests provide opportunities for the students to take on the various roles of setting up, measuring and recording. Once the data gathering is complete each student can then claim ownership of his or her project by being responsible for writing the whole thing up complete with conclusions and often photographs, in a well presented package. In this way the Course also helps students to develop their skills in writing analytical reports.

On its own distance learning can be a lonely route; however the substantial raft of support and the variety of learning experiences provided should mean that, in these courses at least, the route is anything but lonely! The Institute first launched its timber technology courses in the 1950s. They were relevant to the timber trade then and today, in their new and fully revised form, when one considers all the advances in timber production methods, drying techniques, preservation processes and the manufacture of sheet materials, they are even more relevant to those entering the world of wood.

James Latham PLC study groups at Gateshead and Ossett and a team effort at Purfleet with James White AIWSc and David Woodbridge, tutor at the far end of the plank.

Canadian Branch

Seminar Series

UBC and the Institute of Wood Science presentation on October 27th, 2005 by:Dr. Robert Franich Principal Scientist, Ensis

"Locked-in-Boron™, Environmentally-acceptable wood presentation chemical technology."

The decline in customer and regulatory acceptance of the toxic, heavy-metal biocides (CCA, tin chemicals) for wood preservation has left a technology gap for durability chemicals having robust, proven performance. This gap is currently filled with biocides often borrowed from agricultural applications, for food crops, and from cosmetics, such as the traiazdes, ITBC, imideaclopid, appropriate for products with comparatively short life-times.

Research at Ensis during the last decade has focused on boron-based biocides, as these already have a long track-record for efficacy and robustness in use. The well-recognized deficiency in simple boron biocides, boric acid and borax salts, is their ready leachability from treated woods when wet.

The presentation by Dr Franich described the chemistry of a family of compounds, generally described as "Locked-in-Boron™". Some of these compounds are now being commercialized in New Zealand, using aqueous formulations and solvent (LOSP) delivery systems looking to supercritical carbon dioxide systems for a future wood treatment industry.

Examination Dates in 2006/7

The new Certificate Course structure requires students to take an examination on completion of the Core Module.

To provide maximum flexibility for when students start the programme, there will be four exam sittings per year.

For 2006, the exam dates will be on the third Friday in May, August, November and February 2007.

Change of Directorship

After three years in office Jim Lumsden left the Institute on the 31st of March in order to devote more time to his Human Resources activities.

At the Council Meeting on the 1st of March when the announcement was made, Dr Vic Kearley as President of the Institute said;
'we are extremely grateful to Jim for all that he has done to further the cause of the Institute, which he leaves well-poised to continue its future development.'

Former Director, David Woodbridge, has agreed to return to the position in the meantime. Although this might be interpreted as a caretaker role he assured Council that it would be business as usual with no break in the continuity of work in progress and future initiatives. He will continue in post until such time as a new Director is appointed.

CONTENTS

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