



South Branch



Wood is Good Report

IHBC South Branch held their last conference and Annual General Meeting this year at Shaw House in Newbury on Friday October 18th.

There was a raft of excellent speakers with four key presentations as well as a walking tour of St Mary's Church, organised by David Willetts, immediately next door after the lunch interval. It is hoped that in time full copies of all the presentations will be loaded onto the South Branch Web Site, but copyright issues are making this difficult at present.

Brief summaries are outlined below.

Peter McCurdy – Understanding and Repairing Historic Timber Frames

<https://mccurdyco.com>

South Branch were very fortunate to be able to call on Peter to talk for an hour and a half about some of the fabulous repair work he and his team have done to many historic timber framed buildings, including Shaw House.

The earliest medieval timber framed buildings predominantly used oak but in later centuries elm and Baltic sourced softwoods became more prevalent. The tool marks on such timbers tell how they were converted also revealing the sequence of works. Axe hewing was common also finished with an Adze with finer methods using saws often as a two man operation in a pit saw format. Smaller timbers such as pegs, lathes and battens were usually riven or split along the grain.

Fabrication was invariably done off site using carpenter's marks for easy reconstruction. Westminster Hall 1396 was assembled out of London and then bought on site for final erection. Wood was always green (unseasoned) usually with irregularly shaped timbers and buildings were only very rarely square.

Frames with bays were the common form often with the best face showing inwards. Or using a centre line for a more uniform build.

Most repair works begin with laying out the frame in a two-dimensional format. Such techniques are having to be relearnt or copied from skilled craftsmen in places like France. There are very few detailed descriptions of how this work was done. Scribing can be accurately done with a plumb bob and peg holes drilled making sure the hole is slightly out of line so the tapered peg will pull the join very tight.

Selecting the right timber for repair is a critical task. With historic buildings carpenter's would spend a considerable time in the woods with clients selecting the best timbers especially for the main timbers such as the Cruck Frame.

Timber cladding was essentially to keep the weather out and to protect the frame. Infill panels were usually lath and plaster / render with some small brick panels being original.

For repairs it is important to begin by carrying out a very detailed survey of the original structure such as the very carefully measured timber frame buildings in Uxbridge High Street. Always use the same timber species, grain direction and moisture content. Access can be a key restricting factor for installing Scarf joints for example which needs careful consideration. New repair work can be made to appear different to show the evolution of the building. Always cut out the old pieces of timber first then shape the new timber to fit what is required.



Careful repairs can reflect the form of the defect.

A key consideration is whether it is best to dismantle historic timber or not. One of the examples shown was the first English Sash Window which should probably never have been dismantled by English Heritage for repair. Unfortunately, detailed images and measurements were not taken before its dismantling which made reconstruction much more difficult.



Modern epoxy resins arguably don't have a role to play in good timber repair work and while steel work can do so it is nearly always better to find a traditional repair technique such as hand-made nails or simply more imaginative use of timber.

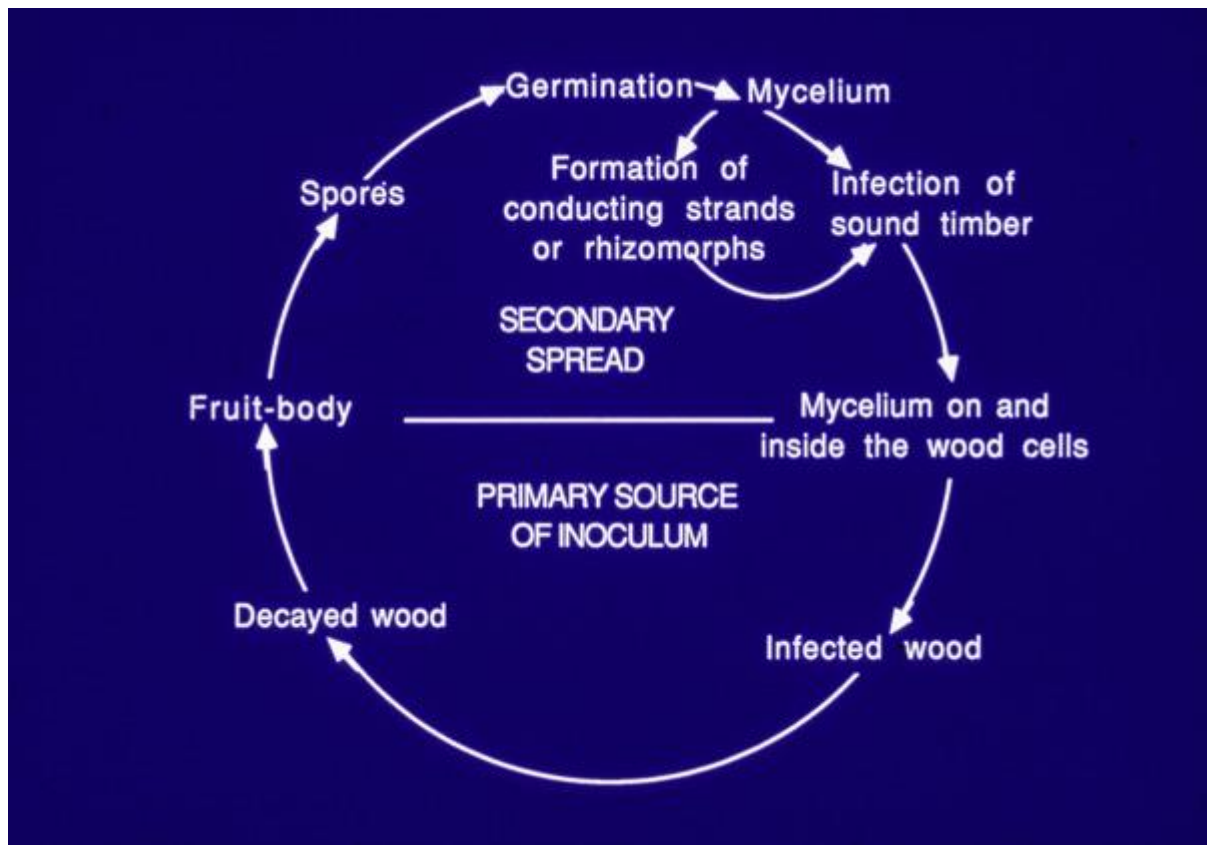
<https://www.ebssurvey.co.uk>

Dr Singh gave a fascinating talk on dry and wet rot, beetle infestation, timber decay, moulds, and related health issues.

The British unknowingly bought the dry rot fungus in timber samples from the Himalayas where it was uniquely found to England in their wooden battleships.

The best cure for both dry and wet rot is to remove moisture by controlling humidity or condensation often by adding heat. Any failed water goods must be repaired to eliminate the source of moisture. Damp is the key facilitator of both rots. Dry rot cannot survive at low moisture levels <20%, while wet rot only thrives in very moist air, >50%.

Breaking the life cycle of fungus is key to its control.



Moulds similarly flourish in moist conditions. Removing moisture and adding warmth are also excellent treatments. There are over 1.5 million different fungi moulds in the UK while identification, risk assessment and treatments are frequently very poorly executed.

Extracting moisture is therefore key but this must be done in a controlled way. Too fast and timbers will possibly shrink and crack.

Injected or sprayed chemical treatments are usually a waste of money and are to be avoided.

Analysis can very effectively be done by sampling air in voids and cavities and comparing it to the external air. Moisture measurement is key in assessing problems of rot and mould. Sort the environment to sort the problem.

Death Watch Beetle can be a very serious problem. If discovered establish if the infestation is active, establish the full extent of the damage and carry out repairs. Improve the environment in the building – ventilation and heat in winter. Localised insecticide treatment may be necessary.

Lyctus Powder Beetle attacks the sap wood of European hardwoods, principally oak and elm. Only attacks sap wood and once the sapwood is consumed or the starch content reduces the beetle will die. Will require localised treatment to sapwood to kill insects while kiln drying will kill the insects already in the timber.

Woodworm, it is important to establish whether the infestation is active, most are not. Timbers with a high sap wood content are more vulnerable to structural damage. Try to improve the environment within the building, ventilation / heat. Insecticide is not usually necessary. Carry out repairs if necessary.

Termites are not a realistic problem at the moment in the UK and Northern Europe but with climate warming this may become a very significant problem with very worrying consequences.

Good conservation management is key in overcoming damage to historic buildings: Make the building water-tight, establish the extent of damp and decay, dry the building fabric, carry out repairs to the timbers with careful detailing of timber repairs to reduce risk of future decay.

Timber moulds can have a very detrimental effect on human health, leading to irritation, allergy, toxicity and infection. Establishing a good building environment is important to minimise risks.

Timber decay is frequently misdiagnosed, misunderstood and mistreated.

David Willetts



David, kindly gave us a short talk and walking tour of St Mary's / Shaw church after the lunch interval. Dramatically, the much earlier medieval church was demolished with gun powder to enable the Victorian church with a William Butterfield chancel, to be built in 1840 which was immensely controversial.

Adam Milton

<https://carpenteroak.com>

Adam very kindly stepped in at the 11th hour to give a talk about the company he founded, Carpenter Oak, in 1987 in Wiltshire.

While Carpenter Oak is best known for its new build timber framing they have worked extensively on repairing many very famous historic buildings such as the Medieval kitchens at Windsor Castle after the great fire, Charlton Court tythe barn in West Sussex, Stirling Castle Great Hall with its great hammer beam roof, all of which have been a considerable success.



Stirling Castle Hammer beam roof

Some newer projects have proved very difficult such as Seagull House.

Carpenter Oak are establishing a very strong reputation for combining highly skilled and imaginative new timber framing work with historic buildings such as Arbroath Abbey and Stowe Garden Centre and Rosslyn Chapel – see below





Adam showed many more newly built very exciting structures often adjoining historic buildings as extensions, for which they have won many industry awards.

Dr Peter Gasson

Is the research leader for timber and wood from the Royal Botanic Gardens at Kew.

Kew has one of the largest collections of wood samples in the world and is recognised as a leading international authority.

Peter revealed how wood appears under the microscope enabling different woods to be identified.

<https://www.kew.org/science/training-and-education/continuing-professional-development/wood-identification>

Peter spends much of his time working for British Customs establishing whether wood which is being imported is sustainable or endangered.

All imported timber in any form should be certified under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) of which Kew is the leading UK authority.

<https://www.kew.org/science/our-science/science-services/UK-CITES>

Peter bought along many wood samples for us to study with hand loops as well as books and publications.
