LINSEED OIL - THE BEST WAY TO PROTECT TIMBER FROM THE ELEMENTS

In 1998 Norfolk County Council participated in an EU funded project known as "TRADIMA" The other partners were from Bornholm/Gotland/Mallorca and Naxos. The idea was that three people from each country, together with a leader, would travel to Gotland in the Spring and Mallorca in the Autumn to learn and experience some practical skills based on the use and production of traditional building materials.

Although most of the time in Gotland was taken up with the production of wood tar and wood-burnt lime, we did have the opportunity to spend a day at a farm seeing how linseed oil can easily be extracted from flax seeds and how it can be made into a very good quality, environmentally friendly paint. All participants were amazed at the quality of paint they were able to make and how well it went on to the new wooden window frames that had been provided for our use. As most of us were only familiar with what the Scandinavians call "plastic paint", it really was an eye opener to see, smell and apply this paint. No nasty solvents are needed to either thin the paint, nor to clean hands and brushes and there were no other additives; simply linseed oil and pigment.

This is basically the same formula used for centuries by painters and decorators throughout Europe and the rest of the World. Other oils certainly were used (poppy seed oil, walnut oil and Chinese nut oil) to name but a few and of course, many different pigments (as they became available). (Dr Ian Bristow's 2 volumes on House-Painting Colours and Technology 1615 – 1840) illustrates this beautifully. But linseed oil is more commonly available and has very good polymerisation qualities, which enable it to stretch and move without cracking. It also penetrates the timber, thus protecting it from the weather.

With so many windmills to look after, as well as many historic houses, it quickly became clear that we needed to find out more.Not only were the modern paints we were using failing to protect the large timbers used in the construction of windmills, (cap/sails/stocks etc), but the interval between applying subsequent coats seemed to be getting shorter and repainting structures like this is a very expensive business!

I was fortunately able to visit several conservation centres in Scandinavia as part of my research into "wood-tar" during 1999 and discovered that all trails on the subject of linseed oil lead to Ystad in south west Sweden and to the Allbacks (Sonja and Hans). Having made contact with them whilst in Halsingborg, they invited me over to see their workshop and school where more than 250 individuals have received intense training in what the Allbacks call WINDOWCRAFT. Their hospitality was first class and I spent a full day listening to the story of how it all started over 20 years ago and was shown all around the training workshops.

Hans had been employed as a professional painter for many years, but had been very badly affected by the paint he was using. He subsequently found out that many other painters were suffering the same debilitating illness and he and Sonja decided to find out why? Eventually they discovered that it was the white spirit used both in the paint itself and as a cleaning agent that had entered his body through the skin and had caused mild brain damage. So they asked themselves a question. Why is it that the

painters in the past did not suffer similar ill affects? The answer seemed obvious. Traditional paints do not contain large quantities of solvents and they were based on naturally produced linseed oil, not modern synthetic oil. In other words the paints were manufactured using what we today might call bio-oils rather than synthetic oils derived from the petro-chemical industry.

Over the next 20 years they have carried on their research both practically and academically in association with Lund University and others. They are a remarkable couple who have developed a whole range of techniques for the removal of paint from both doors and windows including his patented putty lamp and the linseed oil dipping bath. His inventiveness knows no bounds and he is constantly making and developing new tools to make the job of removing and subsequently renovating windows easier. As he says "I want to enjoy my work so that I can hear the Angels sing"! Certainly the working environment he creates makes work seem like a long lost pleasure, rather than a chore. He has also discovered many secrets about the varying quality of linseed oil and now buys it in from a farmer close by who grows a specific variety of flax and extracts the oil using the cold pressed method.

Variety of flax, climate and soil all affect the properties of the resultant oil and will affect the amount of protein suspended in the oil. Generally speaking the larger the quantity of these proteins the longer the paint will take to dry. Whilst one wants the oil to penetrate the wood, the painter also requires the paint to dry relatively quickly. Hans reckons on his paint taking about 24 hours to dry, but under some conditions it may take 36 hours. With poorer quality linseed oil this could take 4 or 5 days!

Various white pigments have been used in the past but for oil based paints, lead carbonate was preferred, mainly because of it's opaqueness, it's drying qualities and its compatibility with most other pigments. Unfortunately it is highly poisonous and even as early as 1903 a Government departmental committee appointed to look into the subject said it should be wholly prohibited. Nowadays, it can only legally be used on Grade I and II* listed buildings. Yet, in this country we still seem to have a love affair with lead white paint and believe that it is the use of lead in the paint that gives older traditional paints their longevity? I don't think this is necessarily true and believe that the protection offered to the wood by linseed oil is more important. Also the quality of the timber specified has a big role to play in the life span of the window or door in question. In any event a more benign pigment, Zinc Oxide, has been used in this country since at least the end of the eighteenth century and together with Titanium Oxide is commonly used throughout Scandinavia. Certainly Hans uses mainly Zinc Oxide as a base for his white paint. The result is a very highly concentrated white paint, which he proudly boasts contains 100% paint, whereas it is common to find that in synthetic Alkyd paints a large proportion of the tin contains either water or solvent. Both of which evaporate soon after the paint has been applied! By using linseed oil as a base, the interval between subsequent coats can be extended by a factor of 2 or 3, and probably much more.

The school and workshop Hans and Sonja run in Ystad is more than a simple paintshop. They have developed what they call "Windowcraft" as a specialist training method that embraces the skills of the painter, the glazier, the carpenter and the metalworker. Of the 250 students who have passed through the school nearly all are now set up in business throughout Scandinavia, northern Europe and in the USA too.

So far, no one from the UK has attended the full training course, which is a pity, because believe me, we need such skilled persons here too. But there is a glimmer of light shining through here in Norfolk.

Following a talk I gave to the Norfolk Society last year and a subsequent seminar I organised on behalf of the IHBC East Anglia branch, Tom Coke from Holkham attended and afterwards approached me, Sonja and Hans to ask if they would look at a scheme he had just begun? This involved the complete overhaul of some of the glasshouses on the Estate.(see attached photos) So, last autumn he invited them over to view the proposal. Surprisingly, although the timber elements had not been painted since the War, the timber was not as rotten as it first appeared. In fact when a piece was taken back to Ystad to be dried and impregnated with linseed oil it was found to be very good indeed. The fact that it had survived was, we surmised, due firstly to the quality of the timber (something I am currently following up) and to the fact that it had last been painted with a linseed oil based paint. Following their visit, Tom Coke decided that he needed to bring his architectural advisers, carpenters and builders "up to speed" with these techniques. Consequently eleven of us went over to Ystad in April to see and learn even more about this "forgotten" knowledge. (see attached photos)

The current situation is that the Holkham Estate is now re-evaluating its whole approach to both new build and restoration. At the moment the old paintshop and joiners workshops on the estate are being revamped and equipped with a variety of tools and equipment (including a linseed oil dipping bath) so that the lessons learned in Sweden can be put to good effect here in Norfolk. Later on, it is to be hoped that the flax grown on the estate can be turned into good quality linseed oil so that they can begin to manufacture traditional linseed oil rich paints here too.

This story is still unfolding and many tests will need to carried out to prove the salient points about linseed oil. But all those who have seen and heard the message believe it to be true, because it makes sense. As they say in Sweden "we have to look back if we are to see the future" also "we have to rediscover the agent wisdom". Our grandfathers and theirs too knew these facts, but we have forgotten so much in such a short period of time that if we don't act now, it will be too late.

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NB : ALL COMMENTS AND OPINIONS EXPRESSED IN THIS ARTICLE ARE THOSE OF THE AUTHOR ALONE AND ARE NOT THOSE OF EITHER OF THE BODIES ABOVE.