



wattle & daub



Timber-framed building with panels at various stages of wattle & daub infill.

what is it?

Historically, wattle and daub has been one of the most common wall infill techniques for timber framed buildings. Sarah Partridge at Orchard Barn defines it quite simply as 'mud and sticks' - the sticks being a lattice of woven strips of wood, like a hurdle, and the mud being a daub of local, clayey subsoil, possibly mixed with animal dung and plant material.

She works in and teaches an East Anglian style of wattle and daub which uses coppice sticks, called withies, most often of hazel, tied to horizontal spars. This wooden framework, which might also be willow or might in the past have been of elm, is then covered with subsoil mixed to make a sort of cob. Traditionally this mixing was done by leaving animals on the subsoil overnight to trample it and add their manure; the mixture would be augmented with bracken, hay or straw.

Wattle and daub, with minor variations in, for example, the orientation of the withies, or the exact makeup of the daub, has been used all over the world for millennia. It is a technique adaptable to local materials and building styles.

Wattle and daub building has a season: it has to be able to dry. The walls need to be kept dry, so they are usually built on a sill, what bale builders might call a "toe-up", but might also be put on a flint foundation wall. In these ways, wattle daub is not unlike other earth building techniques.

These walls, built using a technique that goes right back to the construction of Iron Age roundhouses, are heavy, as heavy as brickwork, and strong, very durable and secure.

Wattle and daub is making a comeback as an extremely sustainable infill for new timber framed buildings.

what are the benefits?

Wattle and daub makes use of local subsoil, a free and readily available material. Wattle and daub builders can plunder the waste heaps of roadworks, and construction sites, taking away subsoil which would otherwise be hauled away to landfill. Even if you have to resort to digging it up you end up with a hole which can be turned into a pond.

The wood used in wattle and daub is a traditional coppice product, and so its use encourages coppicing with all of its attendant environmental benefits. Like straw bale and timber framing, wattle and daub is a carbon store.

Wattle and daub is hygroscopic - i.e. it takes up moisture in humid conditions and releases it when conditions are drier. Clay is reputed to draw toxins from the air. A wattle and daub wall "breathes", and so, like a bale or cob wall, helps to create that most pleasant living environment familiar to anyone who has spent time in a natural building. NB: for these reasons, it's important not to use impervious materials like cement or non-breathable fillers or paints with wattle and daub.

Like earth or stone walls, wattle and daub can be designed to provide thermal mass. Walls are typically 4-5 inches thick, but wattle and daub is adaptable and thicker walls could be built with heat retention in mind.

Natural builders often say that 'old daub is best' - another advantage of wattle and daub is that it can be recycled. Internal walls can be taken down, mixed with water and re-made in another position. One might imagine the internal divisions of a building with wattle and daub walls changing over the generations without the need to add significant amounts of new material.

Natural building materials tend to encourage creativity, and wattle and daub, like cob or bale building, lends itself to sculpture and the creation



Mixing clay and straw for daub.



Alfriston Clergy House, in Sussex, UK, has original wattle & daub panels almost 700 years old.

of 'organic' forms. It's possible to 'polish' wattle and daub. This developed naturally from the process of 'compacting' the daub to fill any drying cracks as they occur, but gives an alternative to a lime plaster or whitewash finish.

Wattle and daub walls are extremely durable. Original walls still exist in medieval buildings in the UK - some up to 700 years old.

what can I do?

Wattle and daub is a cost-effective wall system, relatively easy to learn and fun to do. It is slow compared to building a modern stud wall with boards, and as with any natural material, the techniques need to be learned to a certain extent through trial and error, particularly as materials, not least subsoil, vary very much from area to area. Perhaps the best way to learn the basics is to go on a course. The mixing of the daub, use of the withies, and the 'slapping on' application technique may all be straightforward, but to gain confidence in a technique there is no substitute for learning it alongside someone experienced.

Once you start on your own project, wattle and daub is easy enough to undo and to experiment with. Trying a small panel will allow you to see the qualities of your material as it dries, so that, for example, you can add more or less straw, or whatever 'tying' material you are adding to your subsoil.

The kit for wattle and daub building could hardly be simpler. A tarpaulin for the mixing of the daub is a good idea, as are wellington boots and old clothes, otherwise, all you need are your hands.

Working with subsoil requires that you take some care to wash your hands after working, and you shouldn't daub with open cuts. Other than that, as long as your withies are secured well enough to avoid any collapse, the technique should be very safe. Bear in mind though that the daub is slapped on, and some people might prefer to wear goggles when they are daubing.

Your wattle and daub walls will crack as they dry. You can compact the daub to fill the cracks, or polish it. Even slowing the drying process by running a wet sponge over the daub will help. Finishing with a lime plaster or even a lime wash will cover or fill the cracks as well.

Nowadays, the timbers of timber framed buildings tend to be exposed, for aesthetic reasons. In medieval times, timbers and panels would normally have all been plastered. This may have been a much better idea, as the junction of timbers and plaster could allow ingress of water or draughts.

resources

- see lowimpact.org/wattle-daub/ for info, courses, links, books, inc.
- Paula Sunshine, *Wattle & Daub*
- R Hunt & M Suhr, *Old House Handbook and Old House Eco Handbook*
- buildingconservation.com/articles/wattleanddaub/wattleanddaub.htm info on repairing damaged wattle & daub panels in old houses
- today.plus.com/houses/ - history & construction of medieval timber-framed houses
- [youtube.com/watch?v=Y-LtatHVlfA](https://www.youtube.com/watch?v=Y-LtatHVlfA) - series of 3 excellent wattle and daub videos



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