

The Mystically Muddy!



Wattle!



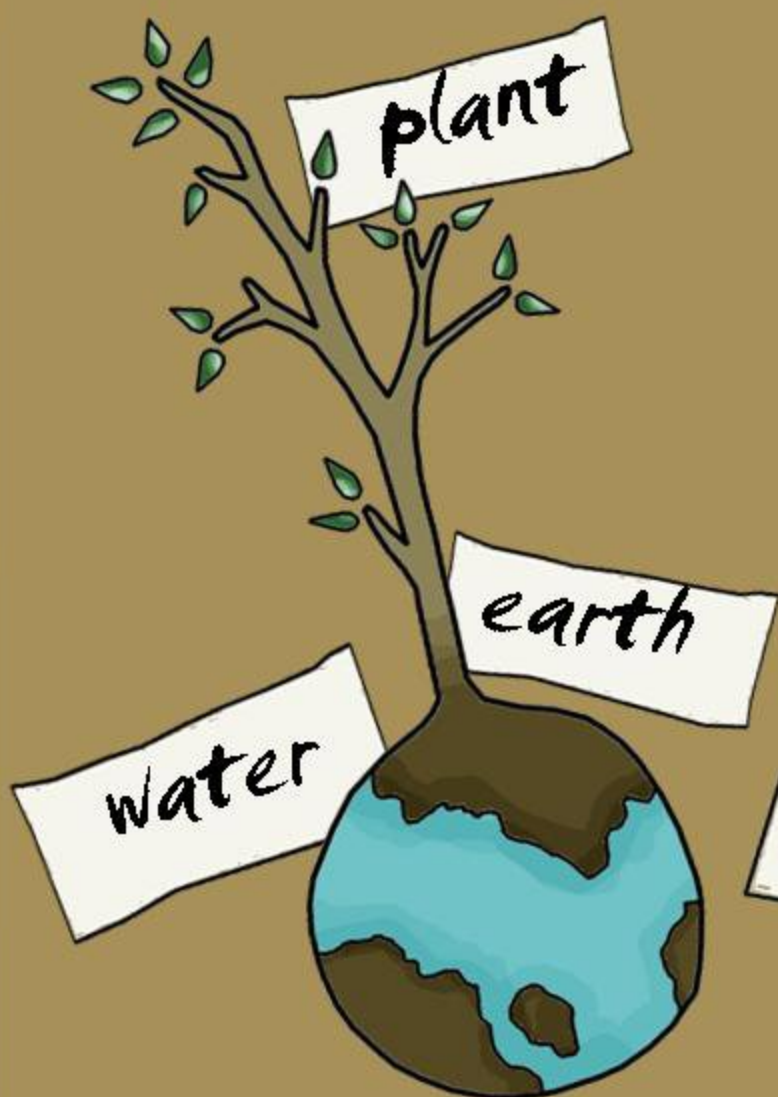
& Daub!

MicroManual

The Muddy Micromanuals are an invitation to the world of building with earth by four of the most ancient techniques known to (wo)man!



This is part 5/5 of the
Muddy Micromanuals!
By Sourabh Phadke.
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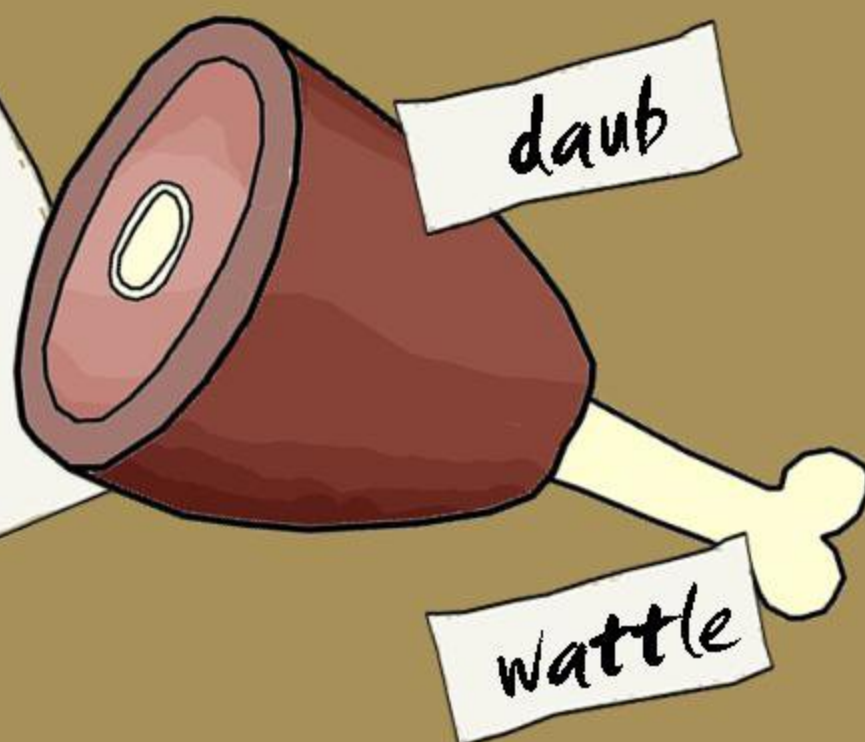


What's Wattle & Daub? Well, you Take a plant, some earth, some water and put it all together!*

*(It's also a decent idea to plant that chap)

They all share responsibilities, and voila! Here's a nifty way to build!

It's a bit like your regular mutton chop. You have the flesh, and the bones...

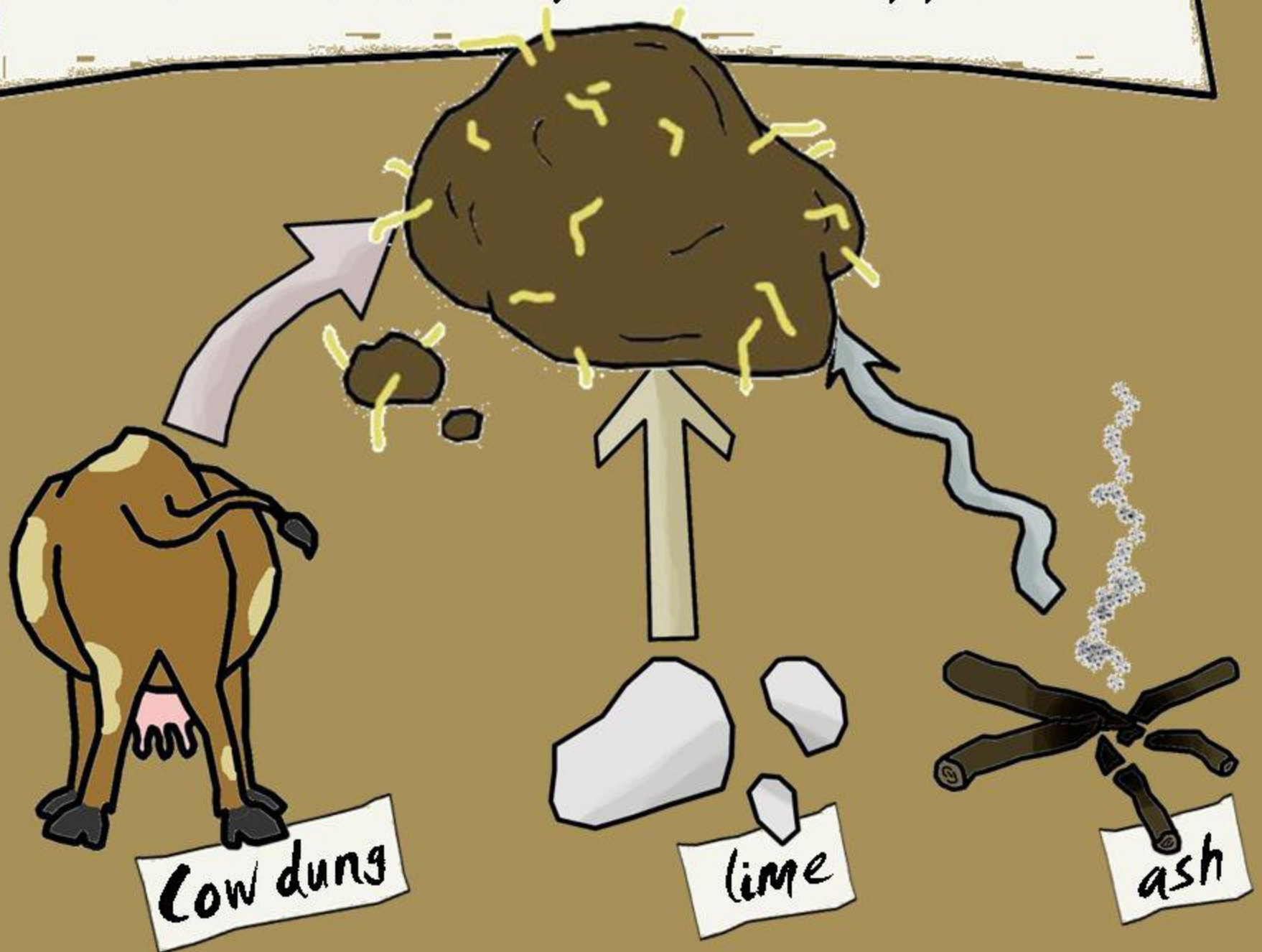


Wattle is the skeleton. It provides structure to this union. Mostly- if not always- it will be of botanical origins



The material used to wattle ('wattle' is also a verb...) varies with the context. Reeds, branches, fronds, bamboos, twigs and stems can all be used.

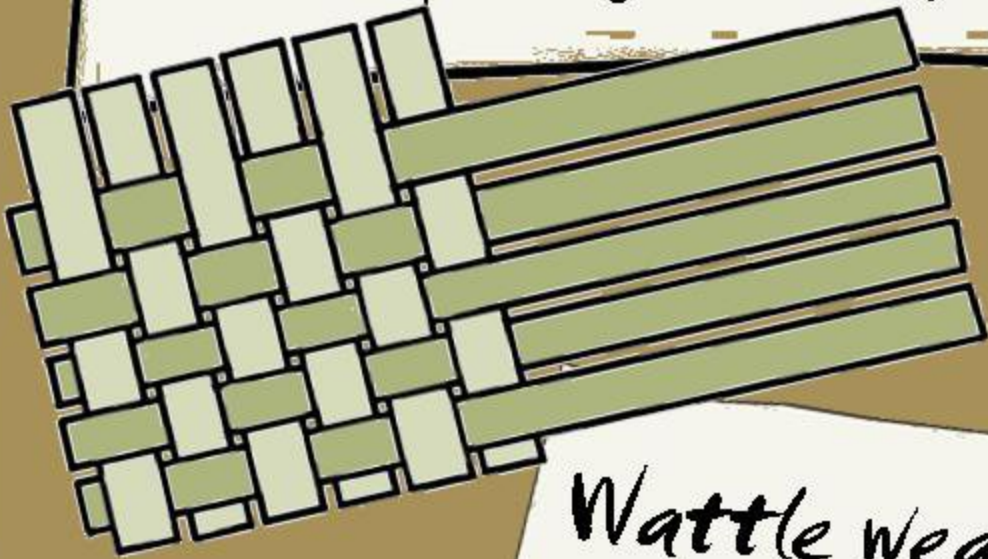
The earthen 'flesh' covering our botanical 'bones' is known as daub (potentially a verb too!). This offers protection to the wattle and also provides stiffness.



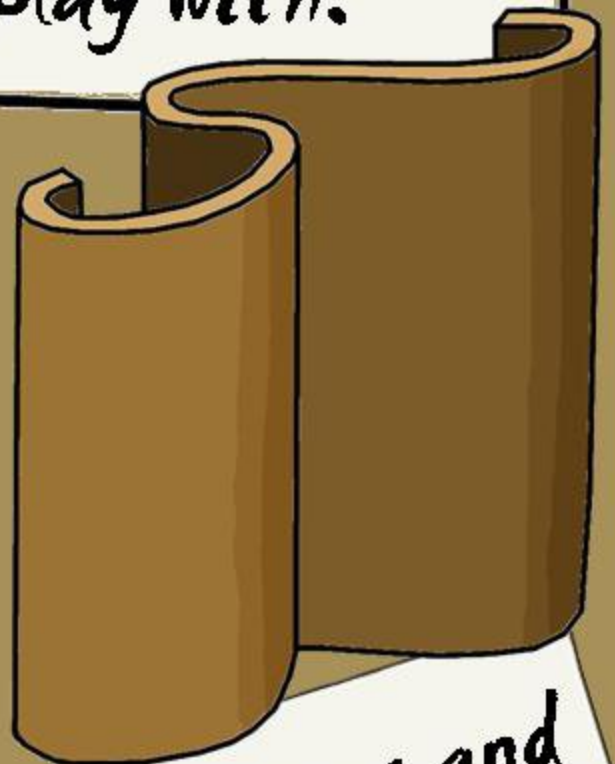
Earth and water are the base of daub. Additives such as cow dung, ash, lime, plant juices, husk or fibres are often added.

A union seemingly so simple and yet
incredibly versatile!

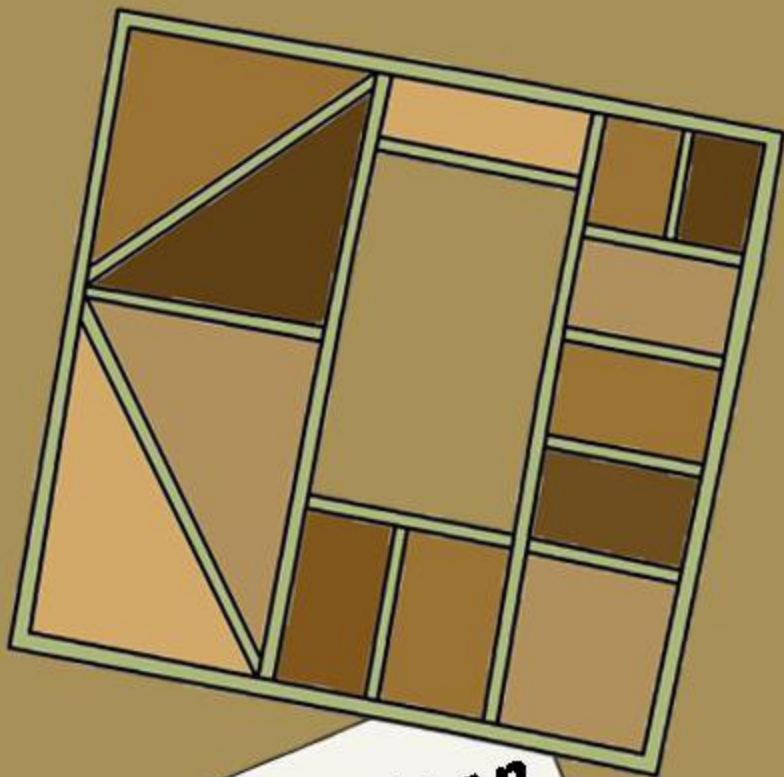
There are umpteen possibilities when W&D
come together. You can play with:



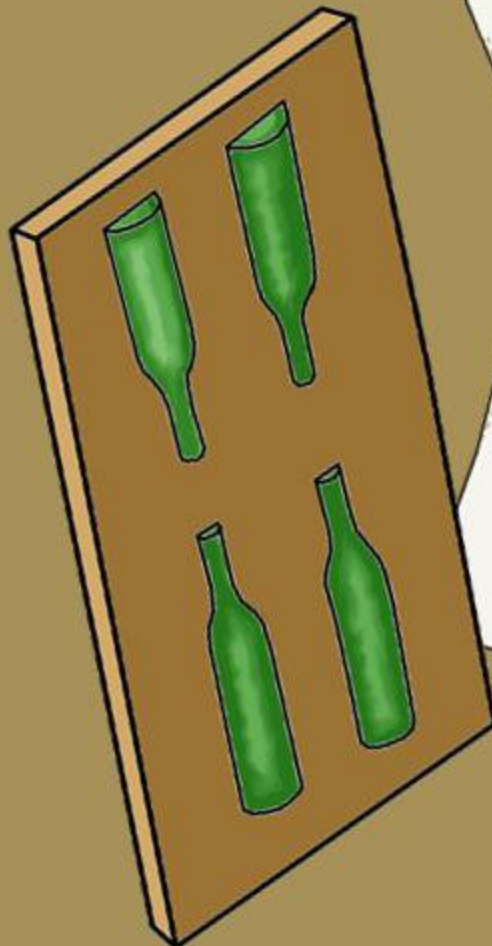
Wattle weaves



Shapes and
curves



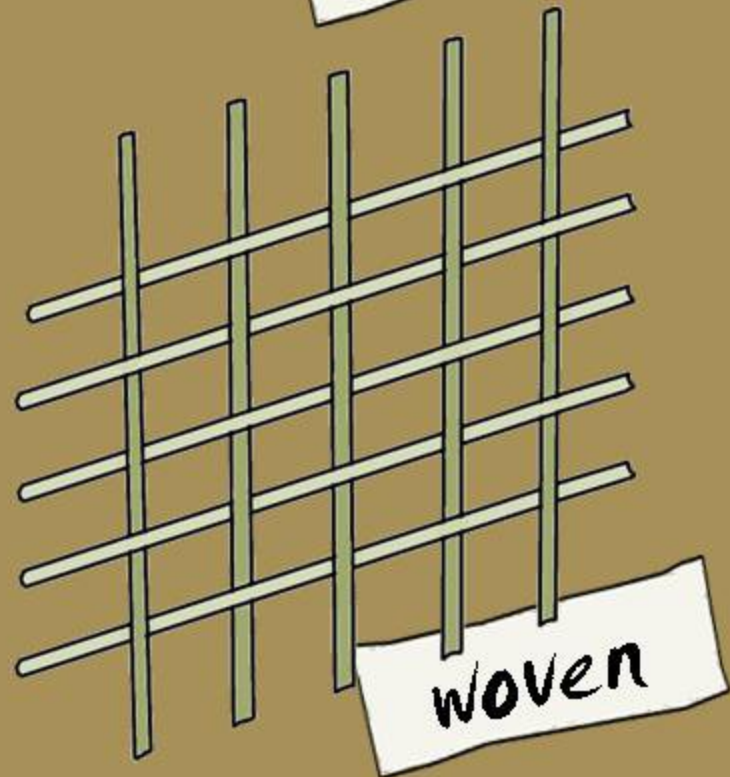
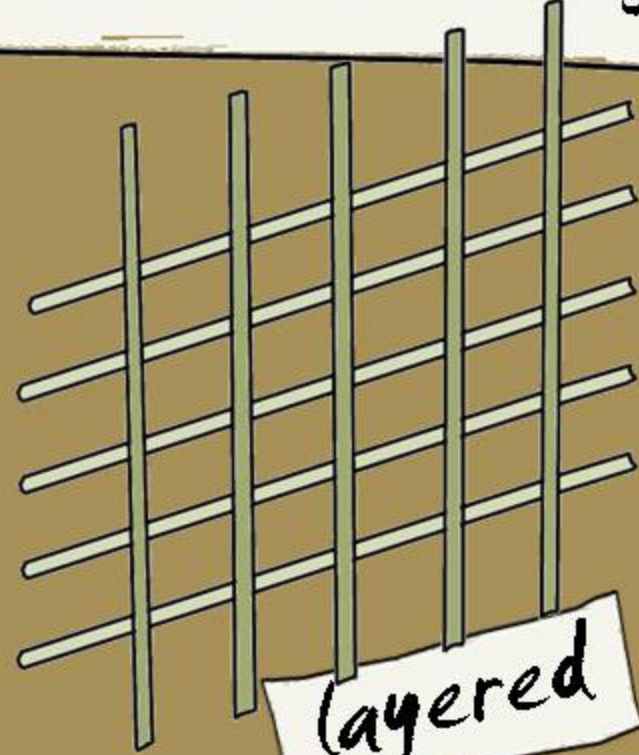
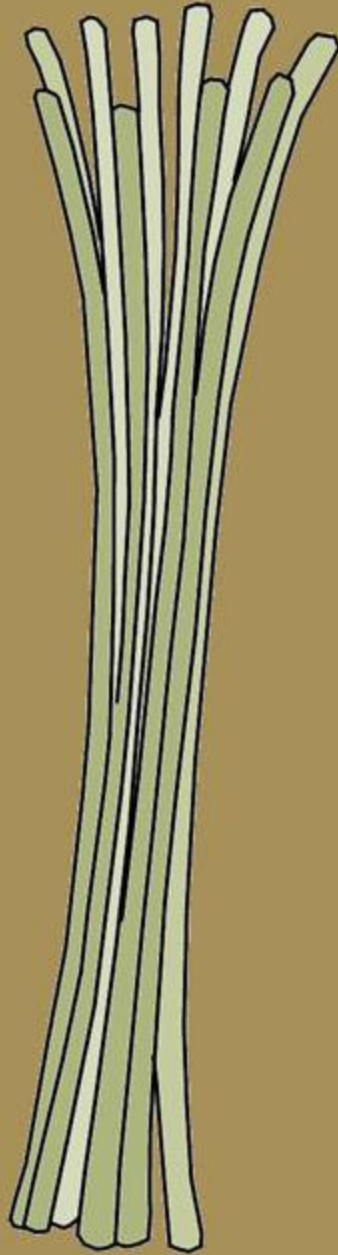
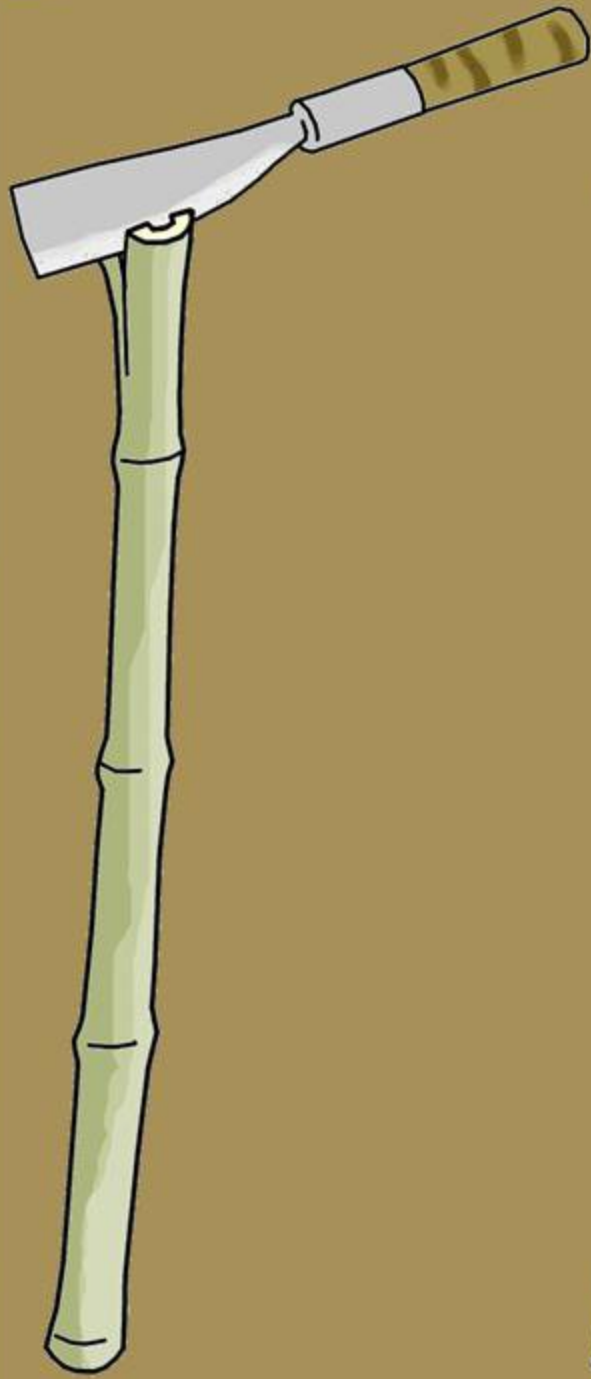
Composition
of panels



Embedding
objects

And just about everything else!

For example, if we split a bamboo into ten strips, these strips can be organised in two ways:



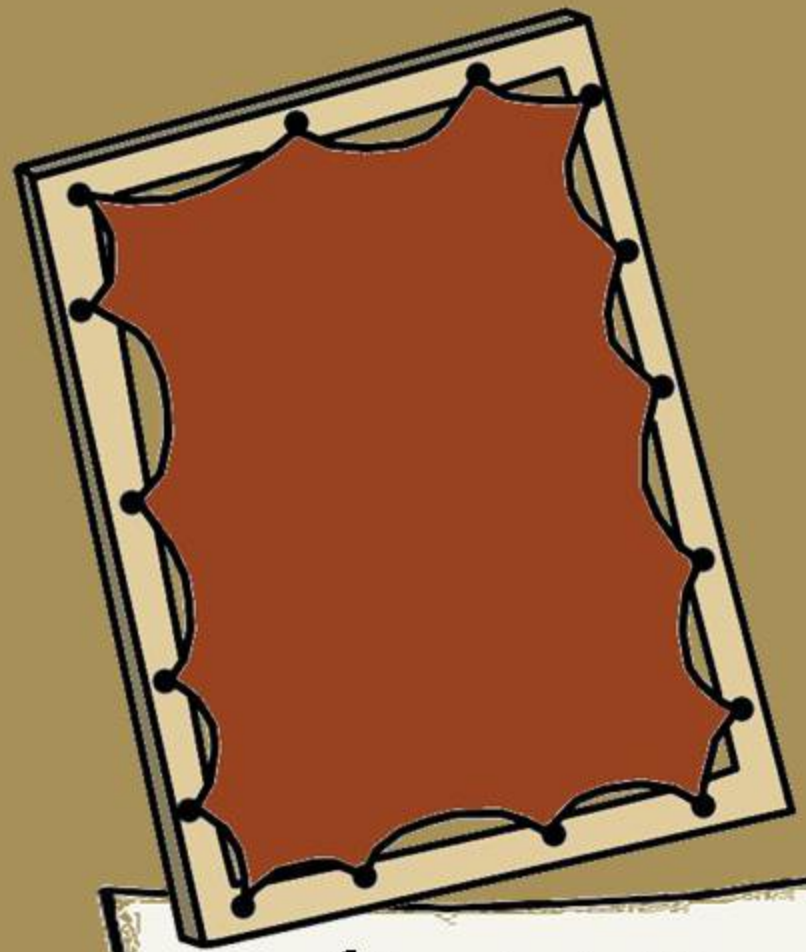
A woven system will be structurally superior to a layered one.



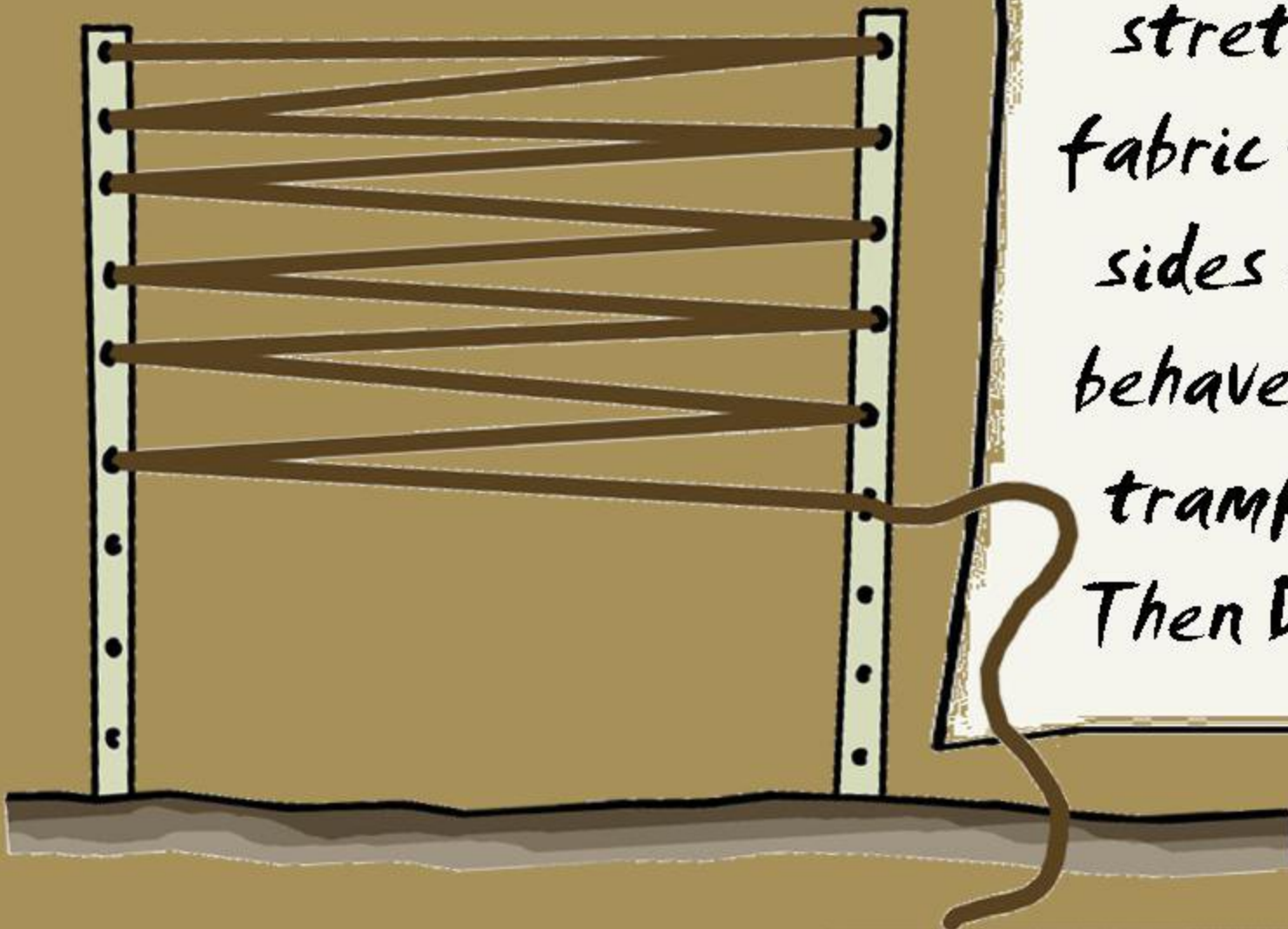
Tense W&D!!

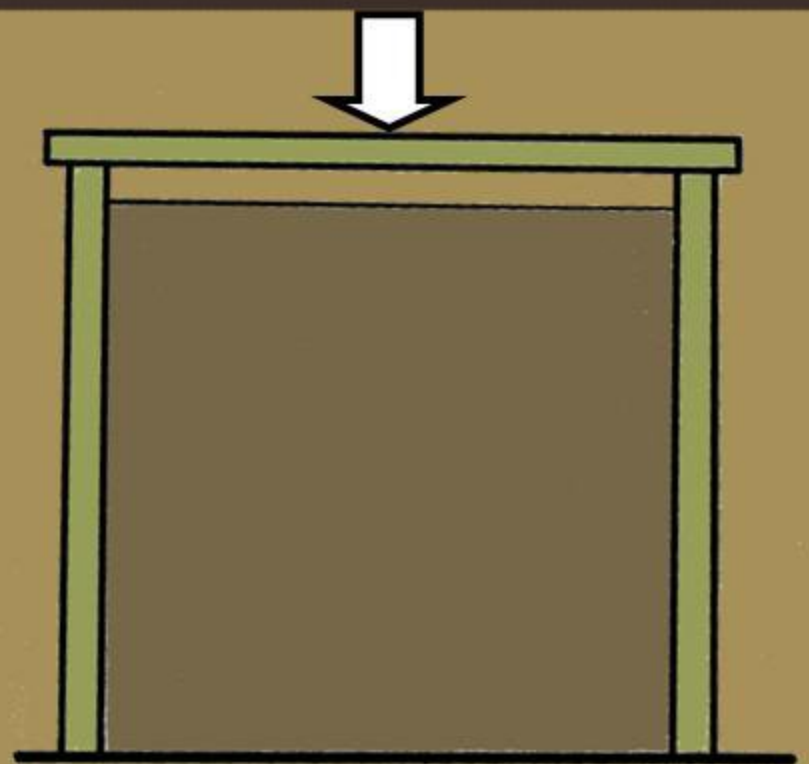
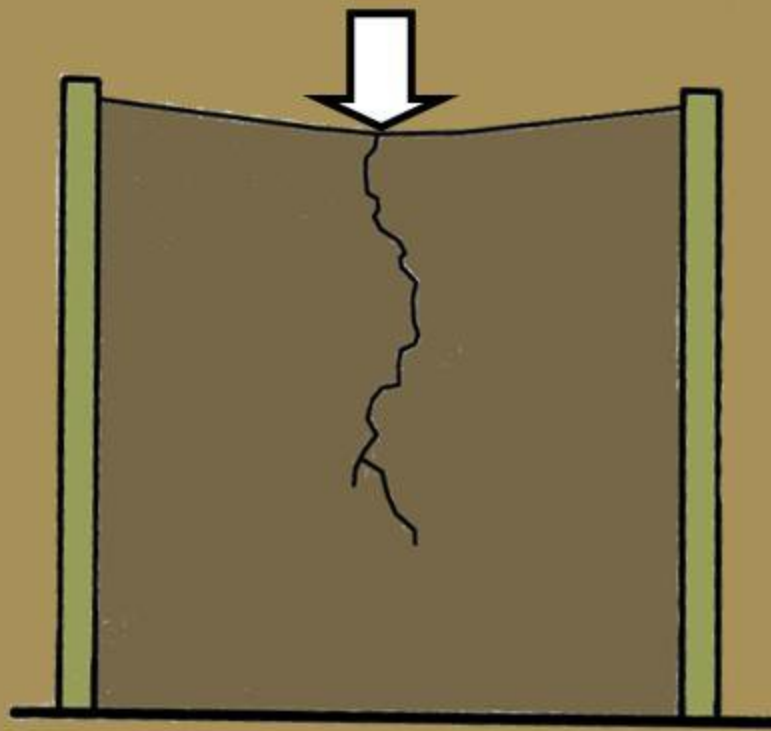
Even Ropes and
fabrics can act
as the wattle!

The secret
ingredient being:
Tension



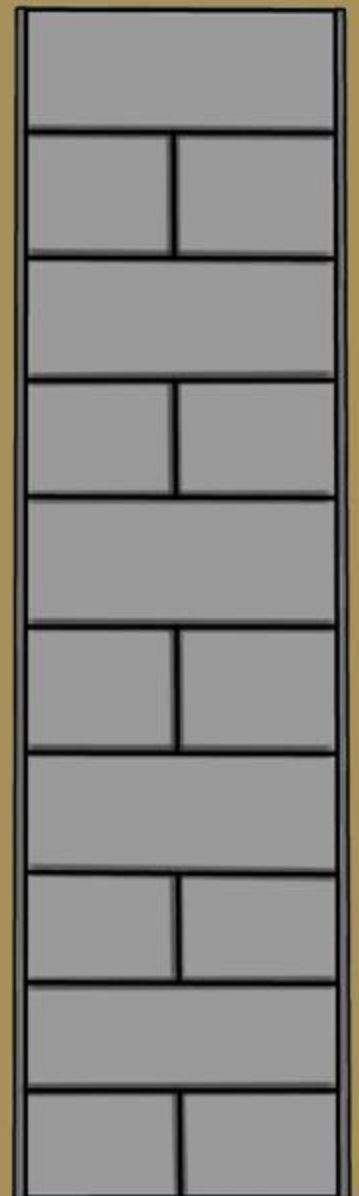
Stretch the
rope until it is
taut like a
guitar string or
stretch the
fabric from all
sides until it
behaves like a
trampoline!
Then Daub it!





W&D is meant for infill panels in frame structures and **NOT** for load bearing walls

Thus W&D panels are really thin (sometimes well within an inch!) when compared to other techniques. This means that one can maximise the usable area in a building



But thin panels also need protection from the elements. Appropriate overhangs or a temporary buffer screen suffice.

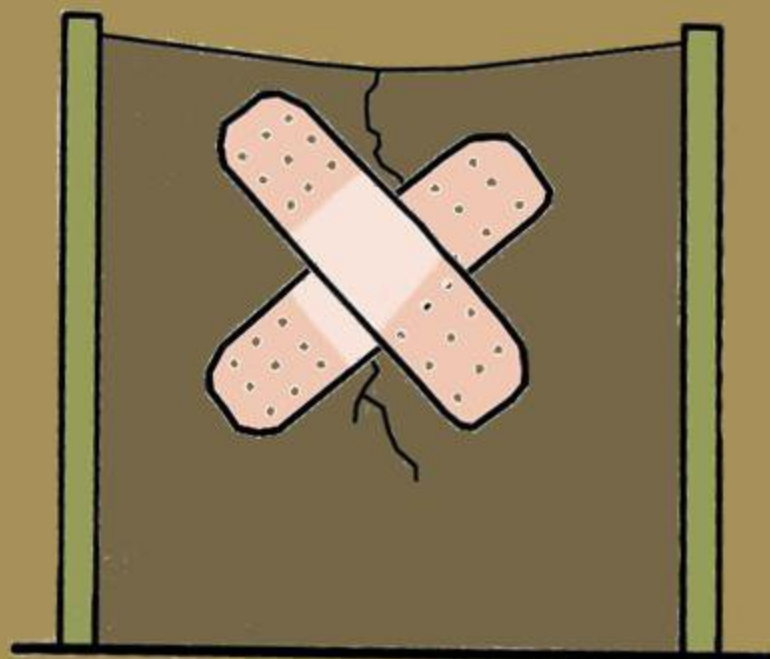


Roof projection

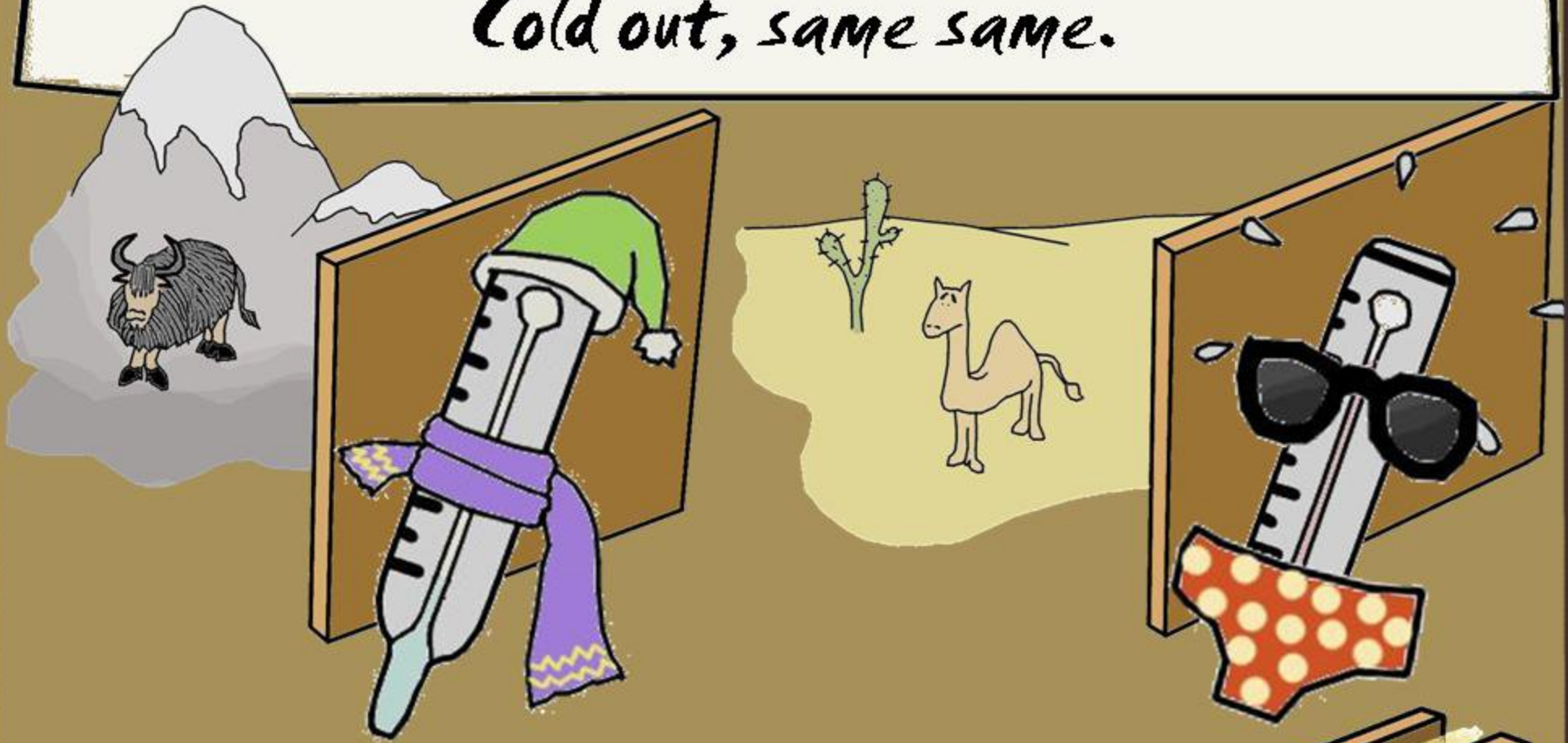


Temporary screen

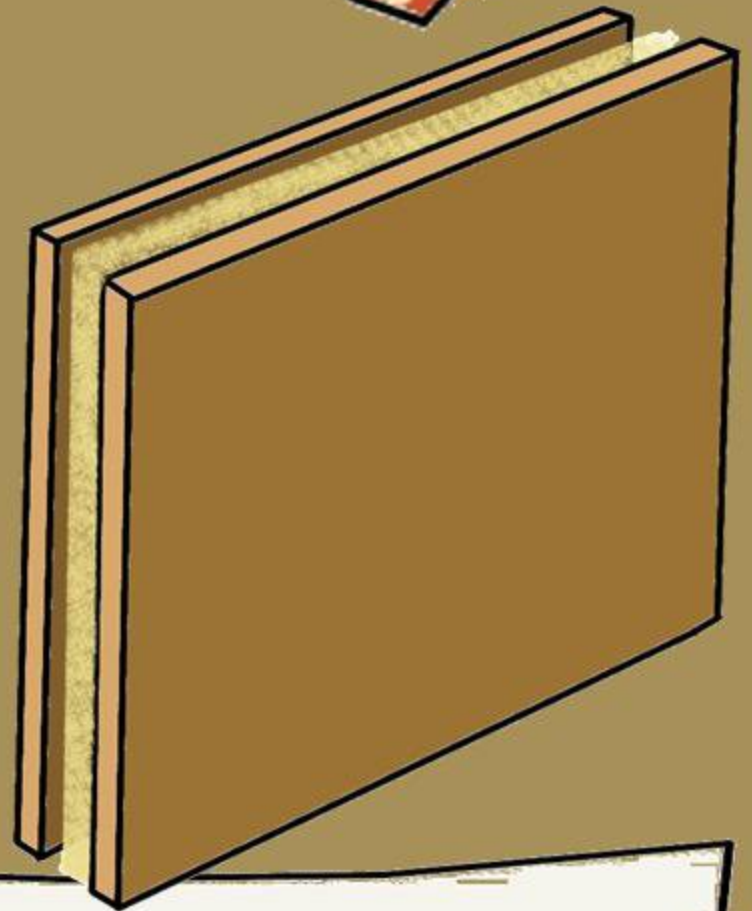
And even if some of the daub comes off, the structure is unharmed. Simply give it another coat of daub and it's as good as new!



Thin panels are also not great at insulation or thermal mass. Simply put, hot out, hot in.
Cold out, same same.




But we can innovate!
We can make 'sandwich' panels with insulation in between.




Or we could even make a high insulation panel with clay slip and straw!

Clay-Slip Straw W&D!!




Mix earth with
lots of water to
make Clay-Slip



Take some
straw



Hang it!



Dip the straw in
the slip. You get
a drip!

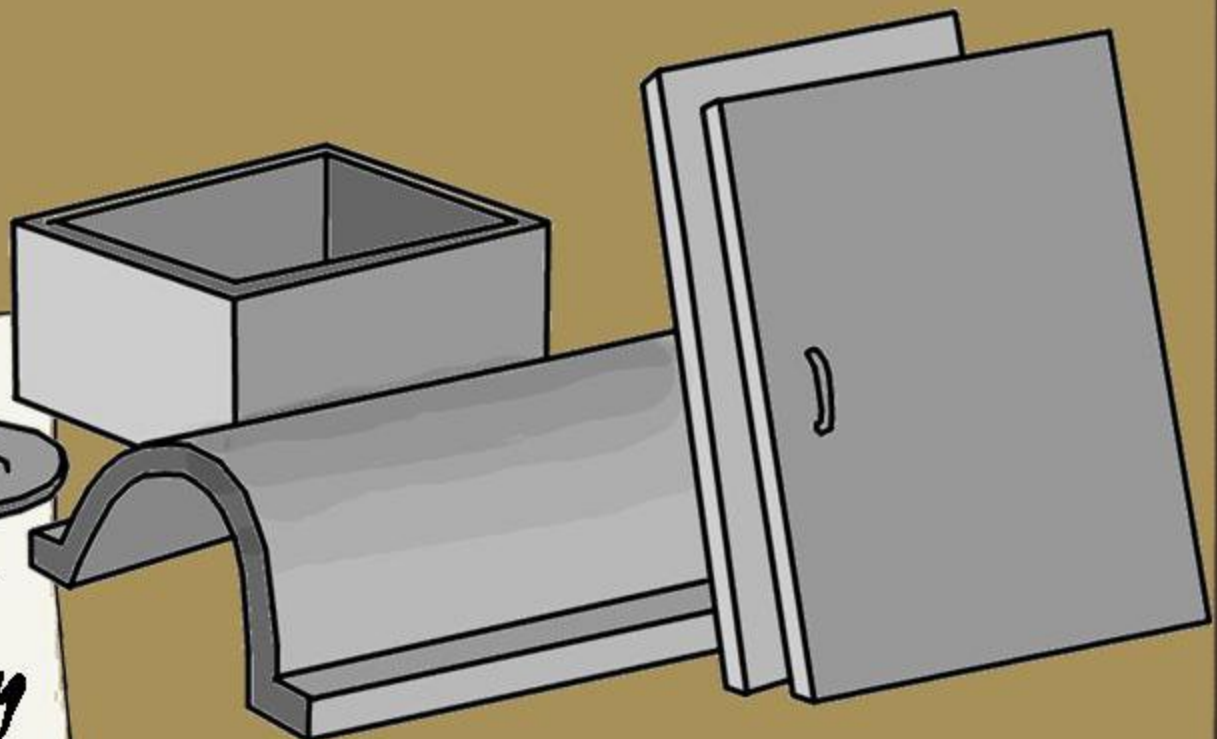
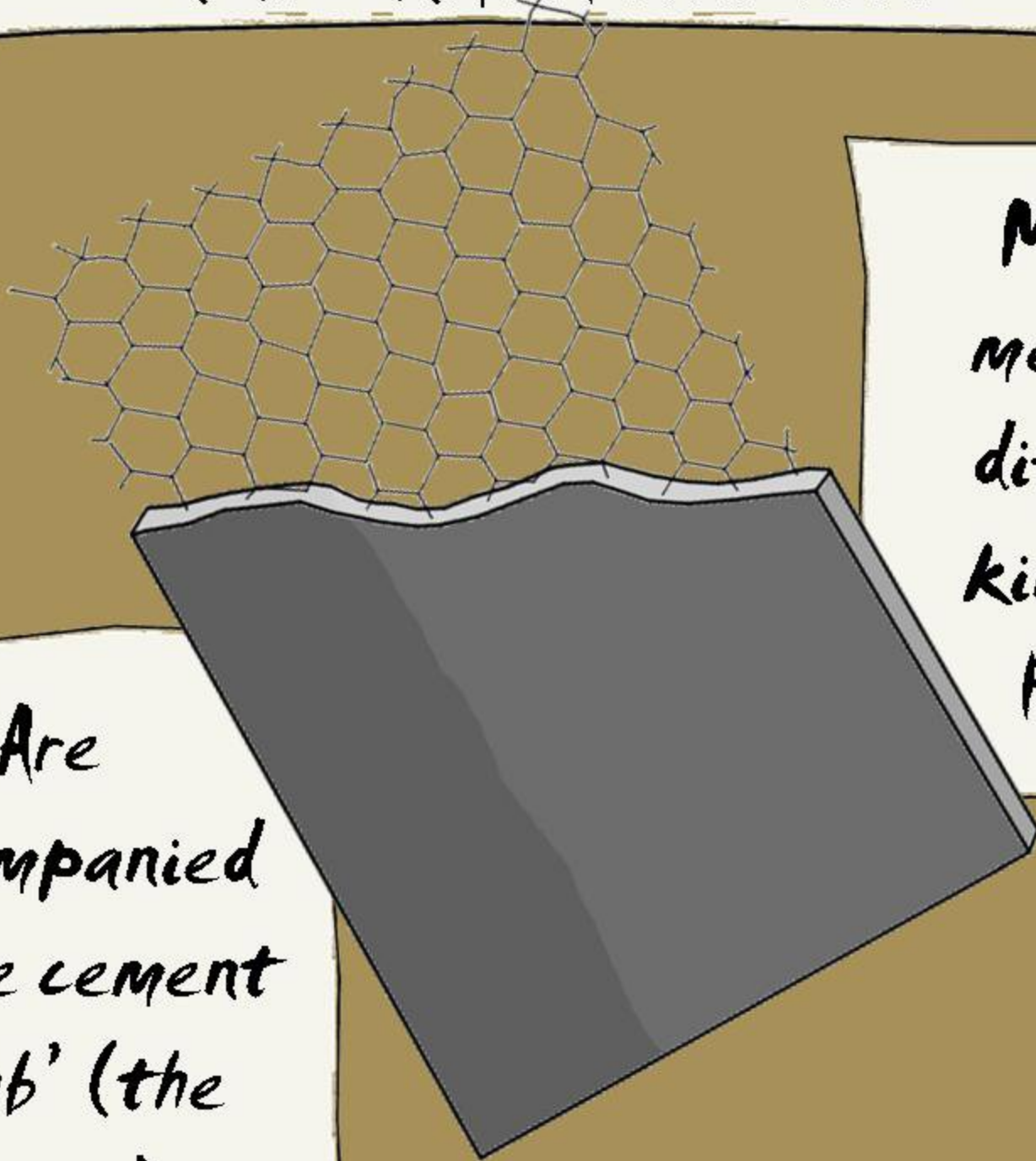
Let it dry and then daub!

In the industrial world, wattle & daub has
a new name: Ferrocrite!

Metallic
meshes of
different
kinds (the
Ferro),

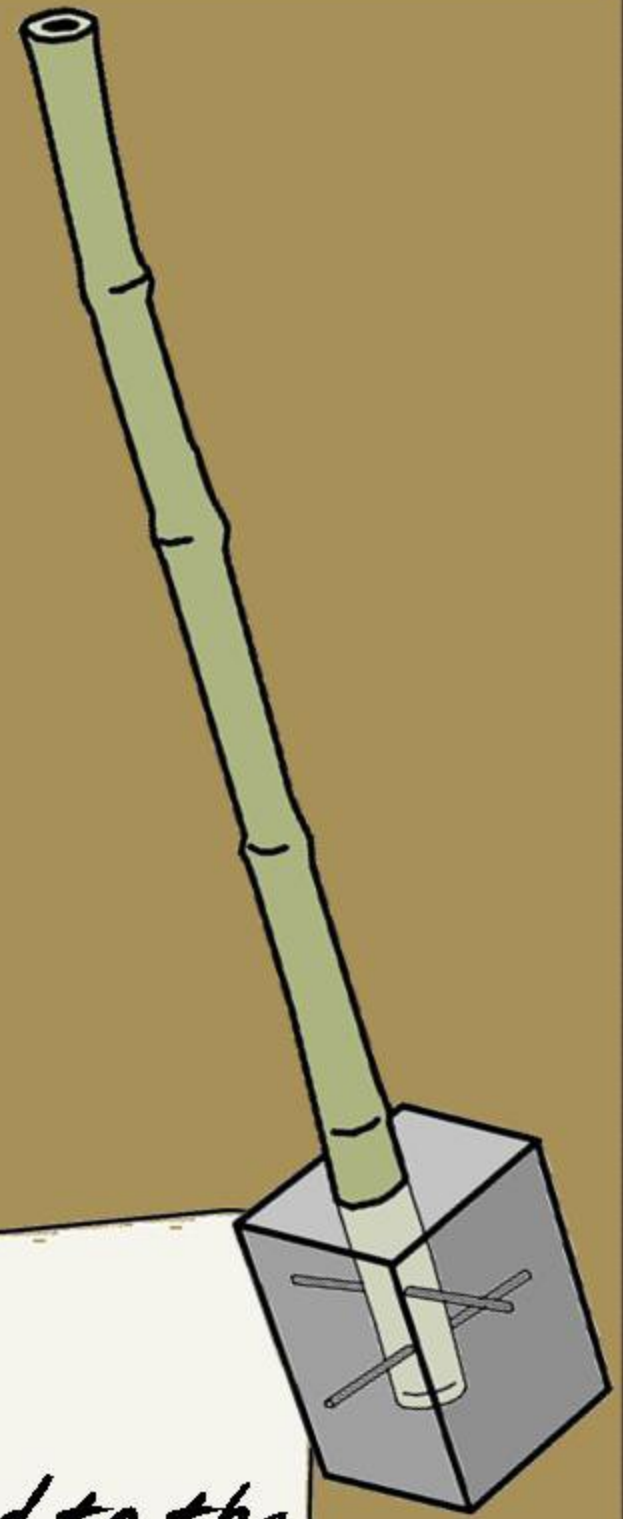
Are
accompanied
by the cement
'daub' (the
crete)

A variety
of elements are
produced this way



Foundations:

W&D panels transfer their load through the frame that they're attached to. Hence foundations are needed only for the poles.

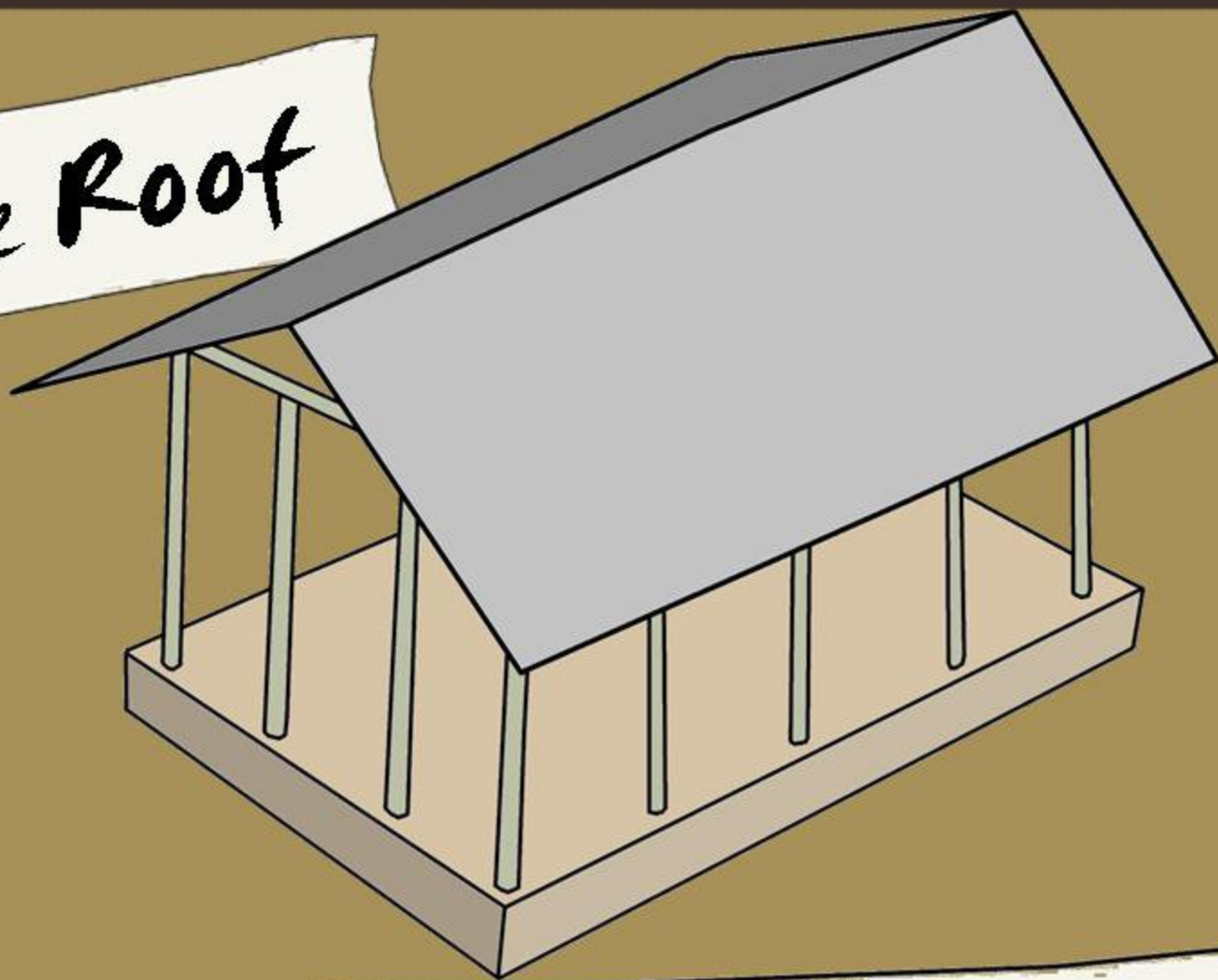


Doors & Windows

All doors and windows are attached to the primary structure: the frame



The Roof



The roof (predictably) rests on the frame and not on the W&D panels.

One can install any kind of roof over a W&D house. Traditionally it was thatch.

We can also attach precast W&D panels to the frame once it's ready with the roof!





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