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Wombling Free: The Art of Salvaging and Re-Using Materials in 2012

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Reduce. Re-Use. Recycle. This is the mantra of even the youngest pre-schoolers nowadays.



About 35 years ago, we heard a very similar philosophy from a certain set of furry creatures known to inhabit Wimbledon Common. They even put it to music, "Making good use of the things that we find, things that the everyday folks leave behind." The Wombles were on the ball.

Finding, stockpiling and re-using materials are skills that we embrace at Mud and Wood. Maybe it helps that Colin is Scottish, a race world-renowned for their frugality (apologies to all the Scottish spendthrifts out there). He has a penchant for looking in skips and raking through rubbish piles. As the saying goes, "one man's junk is another man's treasure", and this is certainly true with the Mud and Wood House project.

There is a very serious point to all of this. The world's resources are diminishing. The world's population is growing. Societies are being manipulated to become increasingly consumerist. Products are no longer designed to last forever. They are designed to wear out or break down or become incompatible with ever-advancing technology. Products are not designed to be adapted or repaired. They are designed to be thrown away and replaced.

In the construction industry, the problem of redundant building materials is seldom discussed. But what happens to the materials in your house in decades or centuries to come, when it ceases to be "your house" or anybody else's house for that matter?

If the various building components can be used again, in their existing state, that is surely a desirable characteristic. Good examples of this are bricks, blocks or stones which are bonded with a weak lime mortar. The bricks (or blocks or stones) can be separated easily and can be re-used exactly as they are. It may even be possible to collect the lime mortar and this can be re-constituted to make a new lime mortar.

Of course, there are many, many building materials which cannot be re-used in this way. Recycling them can score some brownie points in the sustainability stakes. For example, some gypsum plasterboard companies are looking at shredding old sheets of plasterboard to use as the raw material for new sheets.

However, recycling rather than re-using involves some degree of processing. This may mean that additional energy or resources are required (e.g. heat for melting glass or water to clean plastic) and emissions of varying degrees of toxicity could be released. So being able to use something just as you find it is a big step in the right direction if you want to build in an environmentally-friendly manner.

From the outset, Colin and I decided that we wanted to use as many salvaged materials as possible in the Mud and Wood House. When we talk about salvage, we do not mean the beautifully restored windows, doors, slates, fireplaces, staircases and floorboards to be found in “salvage yards”. Many of these yards are just one step down from antique shops and are priced accordingly (of course, sometimes you can actually find a really good bargain or find exactly what you are looking for).

When it came to salvage, we wanted to go hardcore. We found almost all of our reclaimed materials in dumps, in skips, at demolitions, in fields and even beside a football pitch. In fact, quite a few of our house materials were about to be illegally dumped. Think of the favour we did those guys (and the environment).

There are four elements to successful salvaging at this level; time, networking, storage space and lateral thinking.

Time

Every building project follows a broadly similar timetable. Logically it starts with the foundations and proceeds to the roof. Once the building is sealed from the weather, the more delicate internal work can progress. If you want to use salvaged materials for your build, you need to have acquired the bulk of them in advance of starting. Otherwise your project may stall for a few months while you try to find an adequate supply of discarded timber for your first floor joists or roof.

Some people are happy to build in increments, picking up the project when they find the materials they need. However, this makes planning the rest of your life pretty tough. If you are paying trades-people to come in to help with electrics or plumbing, or even if you are bartering skills, this level of uncertainty and inability to forward-plan can throw up difficulties. Having no way of measuring when the project might finish can wreak havoc on your motivation.

Therefore, we recommend doing as much of your salvaging as possible before you start construction. We collected materials for the Mud and Wood House for about three years before we started to build.

Networking

You will come across your materials in any number of locations, some obvious (e.g. recycling yards) and some less obvious (e.g. at the side of a river). However, if you put the word out, it is surprising how many materials will come to you. People love an interesting project and love to be involved.



Pub with New Slates



Pub Slates Going on Mud and Wood House



Salvaged Radiator

Half of our roof slates came from our plumber's cousin's friend who was stripping a pub roof in a village about 24km away. Our friend's dad gave us a great tip-off on a skip outside a luxury home in Dublin. Our friend got some windows. We got a bath, a basin, two sets of very fancy taps, half of our radiators and a Belfast sink.



Bath from Skip



Bath installed in Mud and Wood House



Keep an eye out for friends, colleagues or acquaintances who are doing some home improvements. Even if the project seems very small, there will probably be some tiles left over, or some stone flags, or seven floorboards. If you collect enough of these bits and pieces, you may be able to do something interesting with them. Our friends put a new flagstone floor down in their kitchen. They had about four or five flags left at the end. We needed stone to line our cold larder (we don't have a fridge). The flagstones do the job perfectly.

Contact all your local contractors and builders' providers. Let them know what you are up to. There will be surplus materials, returned and damaged goods, and who knows what other opportunities.

Find out if there are any buildings up for demolition in your area. There may be a planning permission to knock part or all of an old building in order to build a new one. These are a treasure trove. The contractor needs to separate out all the different materials in order to bring them to the dump. You will essentially do this service for him by stripping out the building, which saves him a lot of time and effort. We found that contractors were delighted for us to sort and take the "rubbish" away for free.

We hit the jackpot when a local 1960s school was demolished just as we were about to start building. We got timber for our roof and floor joists, floorboards, render carrier-boards and roof tiles. Not everything was used in the way it was intended (more about that later), but everything *was used*.

You cannot afford to be shy if you are serious about salvaging. You also need to act immediately on any opportunity that presents itself. We lost a few gems because we decided we would call into the farm or house the next day or at the end of the week. Good salvage can disappear quickly, and it often does.

During the stockpiling phase of a project take everything that is offered to you, unless you are *absolutely* sure that you will not use it. People like to contribute. Often you will find that you have recruited another pair of eyes and ears who are more than willing to be on the lookout for more materials for you. Word of mouth can be the best aid for finding those last few tricky odds and ends.

Storage Space

If you are going to stockpile materials, you need to have somewhere to put them. Ideally they should be on your own land, preferably right beside the site of the project. It will save on double-handling.

Not everyone will have enough space. So look around your immediate neighbourhood. Perhaps you have a farmer living nearby who may have some space in an old barn? Perhaps there is an underused or disused warehouse or garage? Or an abandoned house with a reasonable-sized garden? Approach the owners. More often than not, you will find that they are willing to help out, and often for little or no cost.

Try to store your materials in some kind of logical order. Think about when you might need to access them during the build. Know where everything is. You do not want to stumble across “the perfect thing for the job” three weeks after you installed the expensive shop-bought version just because you could not find “the perfect thing” at the time, or you forgot you even had it.



If you only have a small amount of covered space, use it wisely. Stones, slates or concrete roof tiles do not need protection from the rain. Even timber, if stacked correctly with an ad-hoc roof, will fare perfectly well out in the elements. Some materials will be fine stored under a tarpaulin.

Know when it is time to let go. This may be at the end of project, when it is really clear that you no longer need the materials stored on your site. This may be during your project, when you are running out of space and need to be practical about what you will actually use.

Gathering salvaged materials can become quite addictive, but the same neighbours who were so supportive of your project at the start may not be so thrilled if your home still looks like a construction site three years after you have moved in. You may find that your partner feels the same. Ideally, try to find someone who is about to embark on the same journey that you have just finished, and pay it forward. Or else open up a salvage business.

Lateral Thinking

What has lateral thinking got to do with salvaging and re-using building materials? Quite a lot, actually.

On your salvaging adventure, you will turn up tonnes (literally) of useful materials. However, not all of them are going to be exactly right for their intended purpose, or you may not be able to find the precise component for a particular detail. This is where lateral thinking comes in. We have a lot of examples of it in our Mud and Wood House.



Timber Frame Wall Made from Small Timber Sections



470mm Deep Timber Studs

We built our timber frame walls with free timber which came out of a number of different local recycling yards. Because we insulated our walls with straw bales, our timber “studs” are 470mm deep (as deep as a bale of straw) and 1m apart (as wide as a bale of straw). However, not one piece of timber was the perfect size. No problem, we bolted lots of pieces together and built an amazingly sturdy and absolutely free wall.



Salvaged Roof Timbers



Mud and Wood House Roof

We got structural joists and rafters from the demolition of a local school. They were not deep enough for the spans in our house. No problem, we doubled them up and, hey presto, structural timbers that work!

One day Colin was walking by a woodland river and stumbled upon a dismantled freezer-storage unit; a big one; the type that might contain thousands of frozen chickens or some such thing. It was about to be illegally buried in the banks of the river. Colin offered to take it away. Everyone was happy. Being a freezer unit, it was made up of incredibly dense, high-spec insulated panels. Bingo!

However, in spite of its excellent thermal credentials, the insulation was not entirely suitable for use in our roof. This type of insulation does not “breathe”, i.e. moisture vapour cannot pass through it. Timber rafters *do* absorb moisture vapour. In our homes we cook, we shower, we wash dishes, we tumble-dry clothes, we breathe out. We create a lot of water vapour and this needs to get out into the atmosphere somehow. If all of the vapour passing into the roof space is forced into the rafters, they will rot.

This excellent rigid insulation cannot expand or contract. Yet timber rafters do expand and contract. This means that on cold days millimetre gaps would materialise alongside every single rafter in the roof. This is not a good insulation detail.



Freezer-Unit Insulation Ready to be Installed



40mm Wood-Fibre Insulation Lining Rafters and Joists with Salvaged Insulation Sandwiched in Between

Did we abandon the insulation as incompatible and unworkable? We did not. We made it work. We lined each rafter with 40mm of expensive, top-quality wood-fibre insulation on either side. This gives an alternative route for any vapour to escape and it also compresses and expands as required. The detail was a bit tricky to install, but we now have a super-insulated roof for a fraction of the cost and the minimum of new materials (the wood-fibre insulation is natural and made from the waste product of the timber industry).

The bath we got from the posh Dublin skip had one small hole in it. We fixed it with fibre-glass. The tap is missing the enamel disc. It's okay. We know which side is hot and which side is cold.



Salvaged Bath Taps

We acquired a large quantity of mystery boards from the school demolition, about 600mm high and 1200mm long. It took us a while to figure out what they were and to ensure they did not contain asbestos. They didn't. They were wood-fibre boards coated in cement which were used as sarking in the roofs.



Salvaged Wood-Fibre and Cement Boards



Hemp-Lime Render Applied to Boards

We needed boards to apply hemp-lime render to our timber-frame walls. We left a few of the boards out in the rain for months. There was no change. So we used them and they have worked a treat.

We got concrete tiles from the school too. I knew they would not be used on the building, but Colin insisted on keeping them. He was right. We needed hardcore for our rainwater soakaways and the smashed-up tiles fit the bill perfectly.

Sometimes you need to think quite far ahead if you intend to salvage. We knew we wanted to use salvaged slates for our roof. We had no idea when the slates would turn up, or if we would even get enough in one batch to finish the roof. So we designed our roof with a whole extra layer. We applied a high-quality bituminous felt which bought us about three years of weather-proofing. If it came to it, we could have added another layer and increased our slate-free status to ten years.



Applying Bituminous Felt to Roof



Felt Roof Covering Bought Plenty of Time to Find Good Quality Slates

As it turned out, two separate batches of slate “found” us, just when we moved into the house. That detail, however, bought us huge peace of mind. It also meant we were not under pressure to buy the first slates that came along. We could pick and choose the best.

We used free plywood sheets on our timber frame walls. We needed it to be highly breathable, so we drilled hundreds of tiny holes in them.



Salvaged Plywood – Note Hundreds of Tiny Holes Drilled in Plywood Sheet on Right-Hand-Side



Random Pattern of Salvaged Floorboards

We used the school floorboards for our first floor. The random pattern of the varnished versus the well-trodden boards was so beautiful that we never sanded them back.

There were other components as well; the guttering dumped at the football pitch, the rocks gathered from a local farmer’s collapsed boundary wall, the boulders from the blasting-out of a housing scheme site. The only limit is your ingenuity.

Just think, if something is about to be sent to landfill and you find that you can use it in your building project, exactly as it is, with no processing – isn’t that a wonderful thing. It’s a win-win situation, except perhaps for the tax man. As I said, win-win.

I’ll leave the final words of wisdom to the original, inspirational masters of salvaging, those Wombles of Wimbledon –

“Pick up the pieces and turn them into something new, is what we do.”

Féile Butler is an architect, natural builder and teacher. She lives with her husband, Colin Ritchie (carpenter, natural builder, teacher and salvaging addict), their two children and two dogs in the Mud and Wood House in the northwest of Ireland.