# March 2007

Concrete. Lots of concrete !

Thursday 1st March

Found out today that the concrete suppliers have let us down for a second time, and can't deliver tomorrow. When they couldn't guarantee Monday either, our builder told them where to go, and booked a more reputable supplier - we know they WILL arrive at the promised 7:30 on Tuesday morning and we have them booked all day, as quite a few loads will be required. So no work on site tomorrow or Monday. It just goes to show that you get what you pay for. Full credit to our builder, he'd chosen the supplier because they gave us the best price - but their failings have held us up for 3 or 4 days, and left our builders with no work (and therefore pay) for 2 days. Tuesday 6th March

Concrete day !

An early start as the concrete lorry arrived at 7:15am, shortly followed by our builders. The first challenge was to get the truck down the drive, reversing down the drive was abandoned when the driver could not manouevre round the plot to get the chute where it was needed. Going forwards was pretty tight, but possible - just.

The concrete lorry is a clever piece of kit - it arrives loaded with all the raw materials, mixes them to the required mix and consistency, then pumps concrete out down a chute.

Within minutes we had concrete running into the trenches. Although it flows fairly well, it only flows so far - requiring plenty of hard work with rakes to pull it round the trenches to the right level. Before long the truck was empty, and headed off for a refill.

By 4:30pm, and on the 6th truck load, the trenches were filled. All in all - 51.2m3 of concrete, the most the operator had ever poured in one day. Presumably our cheque for over £4000 was the highest he'd received in a day too !

So - a bit of a landmark day, all parties concerened were happy to see it completed. Full marks to the operator who was very friendly and helpful, and skillful at manouevring the truck exactly where it was needed - many drivers wouldn't have tried. No doubt the free bag of chips for lunch and hot drinks in our site "canteen" helped matters!

But that's not the end of the concrete...still to come are 2 or 3 more trenches under the internal walls, and then of course the concrete slab needs laying. So there's still a few cubic metres to go yet !

Word on the grapevine suggests the decision to ditch the original supplier was a huge blessing in disguise. I'm told the concrete they supplied to 2 other jobs at the end of last week didn't set - resulting in some very unfortunate people having to dig their entire foundations out and start again. If that had happened to us, it would have meant not only digging out the concrete, but carting it away and then re-shuttering the whole site, which would have taken the best part of 2 weeks to rectify. A lucky escape indeed. Wednesday 7th March

The remaining trenches under the internal walls were dug today, and all but one were filled with another load of concrete.

Unfortunately it also became apparent that the plywood shuttering could not be salvaged; we'd been hoping some sheets might be tempted out with the aid of a digger and sling/chain, but no joy. A shame, as there were about 60 sheets in total, and at roughly £11 a sheet we'd hoped they could be re-used as temporary flooring when building work takes place on first and second floors. Thursday 8th March

Today saw some careful marking out of where the footing courses would be laid.

In the afternoon, our beast of a diesel mixer is fired up for the first time to mix mortar for the first few courses of footing blocks. These get laid at an impressive rate, and finally we start to see the outlines of a house emerging from the ground. Friday 9th March

The final internal trench was filled with concrete today, the trenches have taken approximately 60 m3 of concrete. I'm sure a nuclear bunker would require less!

The laying of footing blockwork courses continues at an impressive rate.

We also get given the option of "homework". The cavities between the footing blockwork courses need filling with concrete... Sunday 11th March

Good weather today so we decide to spend the day attempting our homework. I give the builder a quick ring to confirm

what sort of mix we need - I'm told it needs to be a fairly weak mix - 1 bag of cement to 30 shovels of aggregate, and it should be fairly dry.

I'd thought through the task ahead, and realised it would be quite time consuming to accurately drop concrete from a shovel down a narrow cavity. So with a few offcuts of timber and plywood I made a "funnel" that would sit in the top of the cavity, and allow the concrete to be chucked in with much more speed.

Next task was to figure out how to start the mixer. Armed with starter handle, we try and read the faded instruction panel, and give it a go. Away it went, and it chugged contentedly all day long.

In went 30 shovels of aggregate. Next task was to try and empty in a bag of cement. After dropping the bag in completely and fishing it out of the rotating drum, I refine my technique sufficiently and it all goes in. Then we gingerly added water, not being sure what "fairly dry" should actually look like. We measured the amount by tipping it from a bucket, so on subsequent loads we could just chuck the right amount straight in.

Once it had mixed for a while, we got the wheelbarrow in place and I use the giant "ships steering wheel" to tip the drum and empty the contents, re-positioning the barrow on several occasions as it all fell over the edge.

Then it was time to get the wheelbarrow to the rear wall, going round several internal walls and negotiating an obstacle course of earth piles, plywood ramps, blocks, stone and bricks. Hard work with a barrow loaded with heavy concrete.

My wooden funnel worked a treat. I chucked shovels of concrete in, and Emma tamped it down firm with a length of timber, finishing it off with a flush surface.

Each mixer load provided two large barrow loads, and in total we managed nine mixer loads before exhaustion set in. That was enough to do two of the three walls, leaving one for the builders to do - the easiest one to get to !

Time to clean the mixer out, what a messy job - running it with a load of water and stones in, which of course splashes everywhere. By the end of the day I'm covered in so many splashes of concrete I worry my clothes will set.

A physically exhausting day, but very satisfying - it saves a few hours labour cost, we get to have a hand in building our own house, and judging by the way my back and arms feel now I might even develop some muscles... Sunday 18th March

This week has seen the builders lay a maze of pipework under the floor - foul drains, radon sumps and vents, and air supplies for the 2 fireplaces.

I'd told the architect that I wanted to supply through-floor air supplies right next to the 2 fireplaces - the theory being that fires would draw their air from these, rather than across the rooms leading to draughts. My initial thought was that a simple 4" pipe through the floor and up through a vent would be enough. But after a bit of research online, I found this Fireplace Design Guide (http://www.solidfuel.co.uk/pdfs/design_guide.pdf) from the Solid Fuel Association. Packed with lots of useful info about fireplace, chimney and flue design, it had some information on how to design fireplace air supplies.
Instead of a simple pipe through the floor, it suggests that two vents should be provided from two different walls, which then meet in a mixing chamber before rising through the floor to a vent.
So the builder created a couple of mixing chambers from bricks, topped off with some reclaimed paving slabs. 4" holes were cut through the tops with a core drill, and a 4" pipe dropped into the chamber. The vents were runs through the walls below floor height, again with the aid of a 4" core drill and 4" pipe.

Although the ventilated radon sumps were not specified by the architect or building control, our builder suggested building them under the floors - as they are very quick and easy to make and as we are in one of the main radon areas of the country, it certainly wouldn't do any harm. As with the fireplace vent chambers, the sumps were made from bricks with slabs on top, although the bricks are loosely spaced to allow gas penetration. Lengths of 4" pipe were then run from the inside of each sump through the outside walls.  There is one sump per "main" room downstairs.Sunday 25th March

This week started with some pretty poor weather; the builders spent Monday and Tuesday on another job (which they did tell us about last week).

The rest of the week saw the underfloor pipework carefully bedded in pea gravel, and then the area below the floor slab filled with progressive layers of crushed hardcore, each layer compacted with the whacker. Finally this was finished with a 2" layer of blinding sand,  finished 6"  below finished floor level. At the rear of the house, the floor slab is double the thickness to take the additional loading of the rear retaining wall and it's embedded steel reinforcing bars.Monday 26th

March

The final task before the concrete slab was laid, was to cut all the reiniforcing mesh to size, and suspend approximately 60 equally-spaced steel rods that the rear retaining wall will locate onto.

This looked like a very fiddly task for the builders, I'd been wondering how they would do this for some time !Tuesday 27th March

The last of the steel rods were put in place, and the damp-proof membrane was laid on top of the blinding sand. This is a thicker than normal membrane, as it also acts as a radon barrier.

Before the concrete slab could be poured, both the building inspector and our warranty inspector have to inspect the damp proof course.

Once both inspectors were happy, the waiting concrete lorry started pouring the floor slab. In total, another 21 cubic metres were poured, requiring 3 trips by the concrete wagon.

By the end of the day, we had our floor - albeit not solid yet - but a big milestone nonetheless. We are now officially "out of the ground".