

Builder's



FREE TO ALL BUILDERS

MATE

May 2006

Issue 17



Straight up: concrete walls without leans or bulges



Through- and holding-down bolts in place.

Is building a large in-situ concrete wall the same as doing a small one ... only more so? The answer is definitely no. A small footing or retaining wall requires little engineering input, but it is a different story when the wall goes over a metre in height. Wet concrete produces immense forces against formwork and the consequences of failure are potentially very dangerous.

The formwork needs to be competently and specifically designed. This is the sort of thing that we have structural engineers for. This type of design work is one of the staples of their profession. Alternatively, you may be able to

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Industry News

The NOW Home

A Waitakere house built last year to a highly energy-efficient design is using about 30% less energy and 25% less water than similar-sized homes in the area.

BRANZ Ltd estimates that if all kiwi homes were as efficient as the NOW Home, the savings would be \$510 million each year.

The design aims for comfortable indoor temperatures on all but 10 days of the year, without extra heating or cooling. A polished concrete floor traps the sun's heat during the day and slowly releases it at night. High levels of insulation and double glazing minimise heat loss.

Passive ventilation circulates fresh air without the need to open windows. This, together with the insulation and glazing, means that the home is very quiet.

A solar panel provides most of the home's hot water needs. Rainwater, collected from the roof, supplies non-drinking water and supplements council water supply.

Further information : www.nowhome.co.nz



Inside: Win! a builder's Pentax auto level worth over \$500!



work your way through the Cement and Concrete Association of New Zealand's publication IB29 (www.cca.org.nz) which details formwork design. Your formwork must be strong enough to resist not only the huge spreading forces of the wet concrete and the additional stresses imposed by vibrating the concrete, but must also be strongly anchored to resist lift. You can't just go off and build a big wall. It will need a Building Consent if it is over 1 m high and both the wall and the formwork will need to have been engineered for the intended usage.

One of the first things your designer needs to know, is what is the wall going to be used for? This might influence the decision on what type of ties will be used for holding the walls of the formwork together. For instance, if the wall was to hold water you might not want conduits penetrating through

the wall to take through-bolts. This is because even after grouting there is the strong possibility of water tracking along the path of the penetration. Yet if the wall was to be used as a retaining wall it is ideal to leave the conduits in as weep holes.

There are specialist suppliers of heavyweight formwork systems who can help with the design and erection. The residential builder might be daunted a little by their commercial cousin's use of slims, divvies and she-bolts as everyday terms for formwork components. It might be an unfamiliar world of strong-shors, soldiers, Dywidags, snap-ties, Acros, pans, push-pulls and strong-backs but like most things in building, if the right processes are followed the right results will follow. Go and see the experts, listen to them and most of all follow their advice.



Concrete spacers are ideal for in-situ concrete walls.



After stripping there may be holes to grout. Note the high quality concrete finish.

Need a hand? If you've got a building problem that needs fixing, get on the blower to Eddie Bruce at BRANZ advisory helpline!

Builders call **0800 80 80 85**. Home owners call **0900 5 90 90**

(0900 calls cost \$1.99 per minute, plus GST)

Next issue: Tidy sites: an indicator of quality?
Builder's Mate 18 out 3 July 2006. Don't miss it!

Giving your hand saw real teeth

A sharp cross-cut hand saw correctly set can often have the job done in less time than it takes to get the transformer, run out the extension lead and plug in the skilly. Note the key words: sharp and correctly set.

There are four steps in tuning your saw for maximum performance: topping (sometimes known as jointing), shaping, setting and sharpening. We'll cover the first two in this issue and follow up next issue with the setting and sharpening.



Sight down your saw or put it against a straight edge to look for high and low spots and to make sure the saw isn't concave.



Make a holder for your flat file so it will be held at right angles to the saw.



File the top of the saw's teeth until the lowest have just the faintest flat spot and the overall shape of the saw is just a little convex. A slight bow of about 1 mm will give a good performance.



Using a triangular taper file of the right size (flat face should be twice the depth of the 'gullet'), file straight across the front of the teeth so that the flat spots disappear. File from one side, doing every second tooth before turning the saw around and repeating the process. This may leave some teeth as little chisels ... the subsequent sharpening will turn them into points.

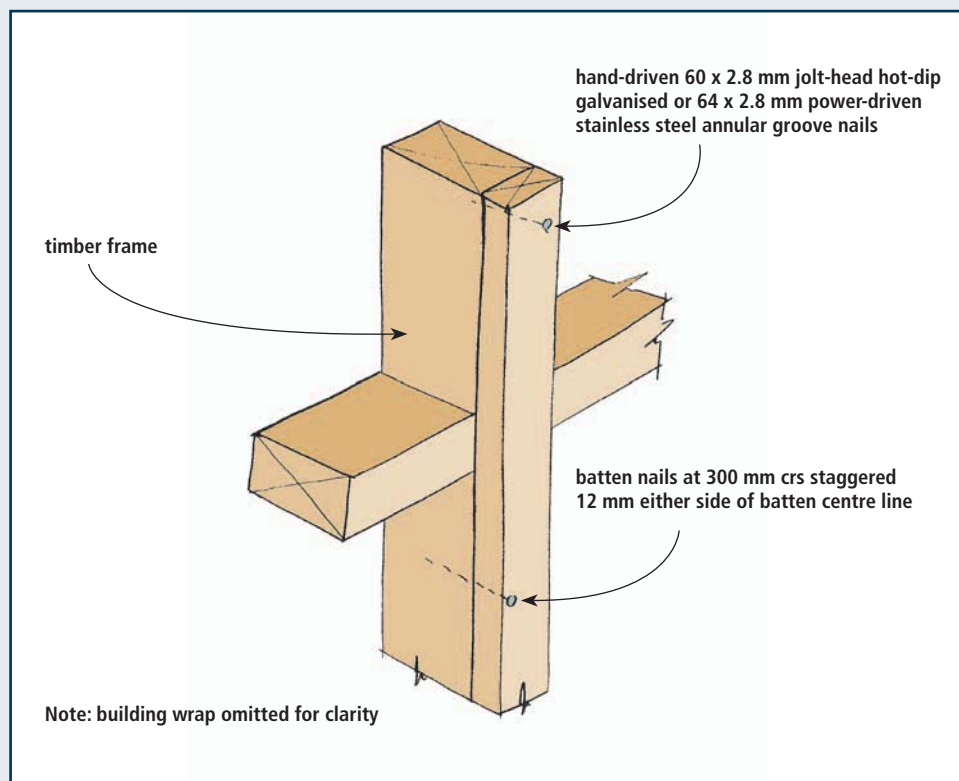
Timber weatherboards – some new solutions

There are no special problems in creating cavities behind most cladding types. However with weatherboard claddings, where the battens are non-structural, you need to make the nails 20 mm longer so they keep their holding power in the structural frame. This means a 90 mm nail is required for painted bevel-back weatherboards to give 35 mm penetration. An 85 mm nail for stained or bare finished bevel-back boards will give 30 mm penetration. Full fixing requirements are in Table 24 of E2/AS1 – the compliance document for weathertightness. Since the longer nails are also thicker, this means you have a bigger chance of splitting the weatherboard or batten. This problem is even more serious where cover boards are fitted. BRANZ figured that the risk of not obtaining a secure fixing between frame/ batten/ board/ cover board needed a better solution.

We carried out tests to work out what nails are required to provide a structural fixing for the battens

themselves to the timber frame (BRANZ Test Report ST0 589). This would enable the normal 60 or 75 mm nails for weatherboards to be fixed directly into the batten and doesn't need the longer lengths for penetration into the timber frame beneath.

The fixings required are shown on the figure below. Hand-driven 60 x 2.8 mm jolt-head hot-dip galvanised or power-driven 64 x 2.8 mm stainless steel annular groove nails will provide sufficient fixing to the battens to allow claddings to be fixed directly to the battens. This allows identical fixings to be used, whether the cladding is fixed over a cavity or directly to the structural framing. This is applicable for all weatherboards. A few things to note: the battens must not exceed 20 mm, they must be No 1 framing grade, and there must still be 15 mm penetration of the nail into the framing after it has passed through the batten.



Dribblings from the old geezer

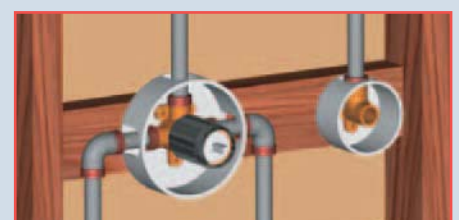
Work plans, quality plans ... call them what you like. Do they work? I used to think at times that more time was spent working out the work plan than would be spent doing the work. Sometimes, however, it is very beneficial to do a formal work plan. You've got something tricky to do ... write down the steps, work out who will do what and when. What are the critical bits ... the bits you must get right? Which should be done first? Often there is a point where you need to stop and take stock of how it is going. Maybe there is a point where someone needs to inspect the work and verify something. Writing up a work plan makes you build the task in your head. This often throws up the problems early as you can't just fudge it and think "Oh yeah, we'll work something out on site when we get to it." You'll be more accurate as assigned duties will be known and thought about by the individuals. It can be inclusive, involving the site team. I am not saying do work plans for everything, but it is worth thinking about as part of your drive for quality and consistency.

Des Molloy, BRANZ Ltd Presenter

Product Information

AQUATITE™ Wellwall Caddy™

The AQUATITE™ Wetwall Caddy™ is a moulded plastic device which holds the water control valves behind a shower. Any future leaks would no longer run inside the wall cavity, but would be discharged through a flange and down the front of the wall lining. It is available from Plumbing World.



Want to know more? Get BUILD magazine.

Published every two months, BUILD is THE industry magazine for building-related issues. Subscriptions cost \$54.

FREE to building company owners and sole building traders.

visit www.branz.co.nz to find out more.

win!

A builder's Pentax auto level worth over \$500!

Pentax is a world famous brand with high quality optics. Having an extremely short focusing distance of 0.4 m, a magnetic dampened compensator, and a 1000 m double run accuracy of +/- 2.5 mm, the AP-120 gives quick and accurate results, saving time and money. The full metal case is weather and dust resistant.

The prize is provided courtesy of The Tool Shed.

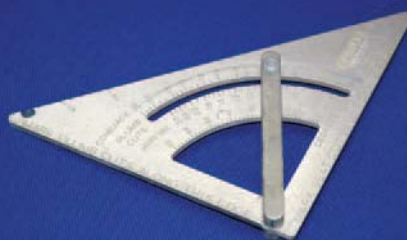
All you need to win is tell us the name of the mystery tool and what it's used for.



Send us your answer (one entry per entrant please) plus your name and address on the back of an envelope and post it (you don't need a stamp) to: Builder's Mate 17, Mystery Tool Competition, FREEPOST BRANZ, Private Bag 50908, Porirua City.

Don't forget to tell us where you picked up your copy of **Builder's Mate!** The winner will be the first correct entry drawn at 9 am on Friday 9 June 2006. Details will be posted on the BRANZ Ltd website (www.branz.co.nz) and in the next edition of **Builder's Mate**, due out on 3 July 2006.

What is the name of this pictured tool and what is it used for?



Terms and conditions: Entry is open to all New Zealand residents except employees and immediate families of BRANZ Ltd, BRANZ Inc, BRANZ Pty and The Tool Shed shops. The competition will close on Friday 9 June 2006. The prize is not transferable for cash. The judge's decision is final. No correspondence will be entered into. BRANZ Ltd may, from time to time, send you information about our products. You can contact us at any time if you do not wish to receive this information.

Builder's Mate winner!

The winner of the BM 16 competition is Neil Cameron of Thames, who correctly identified the tool as a joiner's dog, used to hold two boards together while gluing. Neil wins a Bosch GSB18VE2 cordless drill.



Want to hang up the tool belt but haven't studied for years?

CITE Study Skills



CITE

CITE Study Skills course will help you move your career up a notch.

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Standards referred to can be purchased from Standards New Zealand.
Tel: 04 498 5991 or www.standards.co.nz.

On the job

We can hardly call this issue's site guys 'Blokes on the job' can we? The Bay of Plenty Polytechnic's draughting students recently visited BRANZ. Three of them share their favourite tools and tips.



Mel Quin

Favourite tool: Digital camera for creating library of ideas and also her paper scissors and glue because she's that kind of girl.

Favourite tip: Listen and be a sponge.



Katie Skudder

Favourite tool: Stabilo blue metal draughting pencil.

Favourite tip: Accumulation of knowledge will always be one of your most powerful assets.



Veronica Gardiner

Favourite tool: Her ladder ... she just loves it and loves going up it.

Favourite tip: Get someone other than your 4 year old to hold the ladder.

Know someone on the job? Send us details of his or her favourite tip and tool and you could win \$50-worth of BRANZ books.