

Ideas for Beach House Improvements with Cost Estimates

Prepared by Rick (& Ann) Coxhill August 2015.

All construction work done by the Coxhill boys so no labour costs. Others may be able to assist with labour as needed. Ann's brother is a retired boilermaker and can construct and repair metal things (he helped install the new front gate and repair some fencing).

Sharing the costs between the 4 owners will considerably reduce individual costs. All costing is approximate from visits to various suppliers and the internet.

Some improvements suggested below technically below require a permit. From what I could ascertain from Landata reports, the Wellington Shire Council currently knows very little about the building because no one has ever visited it and there has never been recordings of any approved works. Past improvements such as the tanks under the house, room under the house and veranda probably all should have had permits. The issue is whether it matters and what would Council do about it. I am aware that some Councils use aerial surveillance using products such as Nearmap (does not cover Golden Beach yet) and other products to monitor building changes. The tanks and room under the house have both been done to a high standard and the Council would not be able to see these so not worried. The verandah was very cheap to install so not worried if it ever needed to be removed. Also, there was originally a verandah there, so we just replaced the old one (which is probably not a valid reason).

I have downloaded various Wellington Shire Planning Scheme documents and perused the relevant sections and maps pertaining to the Beach House location. The overlay provisions in the Beach House area are restrictive and complicated.

The Wellington Shire has a "Ninety Mile Beach Plan" for lots on "Beach Dune Land" (which the Beach House is on). Development is not permitted in these areas because of the fragile coastal dune system. Whether "Development" also means modifications is not clear so a permit to do anything may not even be allowed. There has also been "buy back" schemes in the past and there may be others in the future. From all the planning documents I have perused, I believe the long term agenda for the council is to have no houses and no development in certain areas which includes the Beach House area.

The house is in a designated "Bushfire Prone Area" and any proposed building alterations that require a permit are subject to a construction method determined by the Bushfire Attack Level (BAL) rating for the area. The BAL rating for the proposed construction is determined by an expert assessor and the construction method is then determined. There are rough calculators to determine the BAL rating that are available on the internet and I used one to determine that the Beach House rating is at the high end of the scale. When a building permit is issued for an alteration or addition, the building surveyor has the discretion on whether full or partial compliance is needed. For example, if we applied for a permit to add doors or a deck, and even if the construction method for those items complied with BAL requirements, the building inspector could say that unless the whole house is modified to meet BAL requirements, the permit is refused.

Examples of construction requirements for high BAL rated areas are sealed steel doors & frames with outside steel shutters, non flammable deck materials and windows with toughened glass and outside steel shutters.

What we do about permits and the ideas below is open to discussion and approval from all owners and their siblings who use the house.

1. Install double security doors and screen wire doors in place of one of the windows facing the beach.

- a) Because the house is in a Bushfire Prone Area, a permit would be required and the construction method would need to adhere to the applicable BAL rating.
- b) The construction method described below does not adhere to the BAL rating.
- c) Remove the LH window (from inside facing ocean) & cut-out area below window (no cost).
- d) Insert good quality wooden double door frame (\$100).
- e) Insert 2 doors opening inwards. It is convention and practical that all doors to outside open inwards.
 - So doors can open up against the walls out of the way (like the window shutters currently do), would need to remove the wooden table beside the window.
 - Need solid, good quality, wooden doors (\$200 each).
 - The new opening would not be double standard door width (about 10cm smaller each door) so will need to cut purchased doors to size.
 - Cut-out sections in each door so that the top and bottom line-up with current window openings.
 - Insert standard glass in each opening. Shatter-proof or plate glass is too expensive and can still be broken or pushed out (\$50 for standard glass).
 - Construct 2 wire grills (similar to current window grills) that are recessed on the inside of the doors behind the glass (possibly no cost if can get Ann's brother to do this).
 - Construct metal frame to fit on outside around glass insert so glass cannot be prised out from outside (possibly no cost if can get Ann's brother to do this).
 - Build and add strong shutters behind wire for each door.
 - May be feasible to construct a metal insert with glass, grill and shutters for each door (will ask Ann's brother about this).
 - For security, doors can only be opened from the inside. No handles to open doors from the outside (in any case, doors will be locked by latches from inside).
 - Place large latches (similar to ones on window shutters) top and bottom on each door to secure the doors from the inside (\$100). May also put latch(s) across middle between each door.
- d) Insert 2 reasonable quality screen wire doors opening outside. Must open outside if wooden doors open inwards (\$150 each).
 - Will need to adjust door sizes to fit (possibly no cost to adjust if can get Ann's brother to do this).
 - Not worthwhile to use high quality screen wire doors that MAY be secure. They cost up to \$500 each.
- e) Total \$1,000.
- f) **For:**
 - Not difficult to do.
 - Access to outside from upper level is essential for fire safety which we currently don't have.
 - Needed if we build an outside viewing area.
- g) **Against:**
 - More expensive than expected but needs to be secure.
 - Construction method detailed above does not adhere to BAL requirements.

2. Build an outside viewing area on the ocean side of house accessible from doors described above.

a) There are three options for an outside viewing area:

- A raised wooden deck.
- A raised paved area
- A ground level paved area.
- Reasons why an outside viewing area is desirable:
 - i) Summer evenings sitting outside and watching the ocean and listening to the waves crashing is enjoyable.
 - ii) Some summer evenings have a cool ocean breeze.
 - iii) The ocean side of the house is shaded from late afternoon in summer and is a good place to sit and soak up the atmosphere.
 - iv) May encourage more use of the house.

b) Raised Wooden Deck

- Because the house is in a Bushfire Prone Area, a permit would be required and the construction method would need to adhere to the applicable BAL rating.
- The construction method described below does not adhere to the BAL rating.
- House is 8.1m wide. Distance from house to fence is 6m.
- Deck needs to be at least 3m wide and full house width (8m) or half house width (4m).
- Place railing on sides only because railing across the front would affect view from inside house and look ugly (a permit would most likely require railing all around).
- Should consider some type of matting under deck to stop grass growing (not costed).
- Roof over deck not recommended because house gets extreme wind and roof would need to be security fastened and very strong (expensive). Also, would need structural diagrams with the planning permit.
- Galvanised steel support posts:
 - i) Round with 100mm square top fastening that allows bearer to be bolted on.
 - ii) Approx 0.5m into sand.
 - iii) Mounted on sole plate & concreted around sole plate & post.
 - iv) 1m spacing on 3m width & 0.5 spacing on 4m or 8m length.
- Bearers:
 - i) 100mm x 100mm x 3m treated pine bolted to posts (no joists to reduce height and thus less sand to remove).
 - ii) Run at right angles to house.
 - iii) On house side, attach bearers to house if possible to reduce number of posts. Am relatively sure we can do this but have costed for the worst case in case we cannot.
 - iv) If cannot attach to house, post holes cannot be too close to house because of sand subsidence caused when we dug out and installed the new under-house tanks 10 years ago.
- Decking:
 - i) Merbau 145mm x 19mm
 - ii) 4.0m lengths to reduce wastage and no joints over bearers (for 4m width).
 - iii) 3mm gap.
 - iv) Fastened onto bearers with stainless steel screws.

- Costing for 3m wide x 4.0m long deck:
 - i. Galvanised steel posts. 27 @ \$10 each = \$270. Less if can attach bearers to house.
 - ii. Sole-plates for posts. 27 @ \$5 each = \$130. Less if can attach bearers to house.
 - iii. Concrete for steel posts. 1 bag/post required @ \$8 each = \$220. Less if can attach bearers to house.
 - iv. Bearers. 9 @ \$20 each = \$180.
 - v. Merbau decking. 82 lineal metres @ \$11.00/metre = \$900.
 - vi. 400 stainless steel screws. \$200.
 - vii. Bolts various. \$100.
 - viii. Handrails not costed but relatively cheap.
 - ix. Total at least \$2,000 for half house width.
- **For wooden deck outside viewing area:**
 - i) Looks good.
 - ii) No steps.
- **Against wooden deck outside viewing area:**
 - i) Expensive (\$2,000 for half house width).
 - ii) Will need to dig out some sand to allow free area under deck.
 - iii) Labour intensive digging holes, mixing cement and constructing deck.
 - iv) Construction method does not adhere to BAL requirements.
 - v) Because deck is in a harsh environment, would need to apply decking oil every year to protect the wood.
 - vi) Need to stop weeds growing under deck.

c) **Raised Paved Area**

- No permit required because classed as landscaping.
- Use steel uprights that hold treated pine sleepers to create an enclosed area. Fill with sand and pave.
- Highest point would be no more than 0.5m off the lowest current sand level.
- Paving does not need to be concreted if sand is compacted properly. Also, easy to repair if there is sand subsidence.
- Costing for 3m wide x **FULL HOUSE** width:
 - i) Steel corner supports. 1.1m x 2 @ \$55 each = \$110
 - ii) Steel end supports. 1.1m x 2 @ \$22 each = \$44
 - iii) Steel joiner supports 1.1m x 2 @ \$21 each = \$41
 - iv) Treated pine sleepers. 15 3m x 50mm x 200mm @ \$15 each = \$225
 - v) Large pavers. 600mm x 300mm. 135 @ ~\$10 each = \$1,350.
 - vi) Compactor day hire. Est \$150.
 - vii) Total cost \$2,000
- **For Raised Paved Area:**
 - i) Cheaper than deck and thus cost effective to make full width of house.
 - ii) No steps.
 - iii) No permit required.
 - iv) Not difficult to do.
 - v) Can easily add hand railing.
 - vi) No ongoing maintenance (unless there is sand subsidence).
- **Against Raised Paved Area:**
 - i) Does not look that exciting.
 - ii) Labour intensive carting sand and compacting to fill enclosed area.
 - iii) Need to use large pavers to minimise subsidence.
 - iv) Would need to hire compactor whilst filling with sand which would need to be all done in one day..

d) Ground Level Paved Area

▪ **For Ground Level Paved Area:**

- i) No permit required.
- ii) Simple to construct.
- iii) Easy and cheap to make full width of house.

▪ **Against Ground Level Paved Area:**

- i) Sand will blow over pavers and need to be continually swept off.
- ii) Need steps down to paving.
- iii) Need to use large pavers to minimise subsidence.

3. Purchase a 20 foot steel shipping container for secure access of items.

- a) Cannot determine if we would require any type of permit to do this. Decide if we have a need for it before following this up.
- b) A 20 foot container is approximately the length of the garage, same width as the garage opening and about 0.5m higher than the garage opening.
- c) Locate beside garage on house side.
- d) Would need to dig out some sand to fit container but it would act as a retaining wall for raised area of sand around fire.
- e) 6, 8 & 10 foot containers are available but too small and nearly as expensive as 20 foot container.
- f) Estimated cost \$2500 including delivery (from internet). There are lots of these for sale on the internet and we should be able to obtain one considerably cheaper. Our son currently works and has contacts in the shipping industry.

g) For:

- We need somewhere to securely store large items on a shared basis.
- Is waterproof.
- Not having to cart items to/from home to/from the house would be good. In particular, bulky items such as bikes, fold up chairs, bedding etc. (we already have 3 adult size bikes we could leave at the house).
- If placed on the house side of the garage would serve as wall for the sand and would be mostly hidden from view.

h) Against:

- Expensive.
- Container is too big to fit in garage.
- Labour intensive to relocate sand where container would sit.
- A container (if people can see it) may act as a magnet to break into because it is obvious it is being used to store things. However, is not easy to break into and will be mostly covered with sand.
- Would need to trim branches on one of the front pine trees to bring truck and container onto property (not costed).

4. Make the wood fire heater currently at the house operational.

- a) Technically require a permit for this and because there are fire safety issues associated it must be done to the required standard. I believe the method detailed below would meet any required standards so the cost is reasonably accurate.
- b) Construct a brick base and brick wall behind heater (cost of a few second hand bricks).
- c) Install a commercially available safety rail around the brick base (\$270).
- d) Install flue. Need approx 5m of triple skinned stainless steel flue 0.9mm thick. One 45 deg bend through back wall near the ceiling. Another 45 deg bend to direct pipe around window of second bedroom. Need various mounting attachments up the wall and on the roof (\$1000).
- e) Total \$1300.

f) For:

- The house is not used enough in winter because it can get very cold and damp.
- The house is not insulated, very draughty, the current gas heater cannot adequately heat the house, is expensive to run (and will get more expensive as gas prices go up) and must be turned off at night. Also, condensation on the walls and ceiling is a problem in winter, partly due to the unflued gas heater creating water vapour. A wood fire heater would overcome these issues.
- There is plenty of wood available locally that can be stored in the garage.
- We already have the wood heater.
- There is a perfect location for heater on LH side of door (as you walk in).
- Locating heater near the lower door is desirable for loading wood and would heat both levels.
- A better heater may encourage more people to use the house in the cooler months.

g) Against:

- Expensive.
- Will need to install flue through the house eave.
- Fiddly specialised labour to install the flue.

5. Add 2 more bunks in second bedroom.

- a) No permit required.
- b) Above bed closest to door.
- c) Cost \$200 excluding mattresses (which can often be purchased cheap at local markets).

d) For:

- Cheap and simple to do.
- Most of the construction can be done off site.

6. New plastic tank (approx 1500 litres) beside shed where old steel tank was located.

- a) Don't believe we need a permit for this. Even if we did, I would not bother. There was a steel tank there before, so we are just replacing the old one.
- b) There is already a concrete slab to place the tank on.
- c) Place a tap accessible from beside shed door.
- d) Cost \$500.

e) For:

- Collecting water from the veranda is desirable because we need all the water that can be collected.
- Pipe already installed from veranda gutter to where tank would sit.
- Having an outside tap is useful.

f) Against:

- Need to secure tank to concrete slab so cannot be stolen.

7. Install solar panel on roof with batteries and charging system.

- a) No permit required.
- b) Would only be for 12v lights and 12v pump. No inverter system for 240v as this would require more panels and batteries and becomes expensive and large. In any case, do we really need 240v?
- c) Solar panel would be mounted flat on the roof so it cannot be easily seen. This is not an ideal angle but needed so less chance of being stolen. Also, wind can be very strong at times so mounted flat is better.
- d) Charging system & batteries would be securely located in bathroom.
- e) Batteries would be sealed gel type so no fumes and safe.
- f) System would have built in USB charging points.

- g) Would still be able to unplug lights & plug in pump or temporarily use a different battery.
- h) May be possible to have pump fixed to floor or behind bathroom wall, permanently connected, and with water level sensing switches in header tank that automatically turn pump on/off as required.
- i) **For:**
 - Currently, users bring their own portable battery, (charging system) and pump. We cannot currently leave them at the house because of security issues. Having these items secured permanently at the house would be highly desirable.
 - Not expensive as already have all the items and installation is not difficult.
 - Security not an issue if items can be well secured.
- j) **Against:**
 - Batteries may not last a long period of overcast days but a spare battery could be taken to house during winter and other high use periods.
 - In off peak periods, batteries may not be cycled enough and thus reduce their life.