

Moyle Construction gets 'in the zone'

Climate change is a hot topic around the world at the moment, with one of the effects of climate change being the erosion of our coastline.

Current laws state that if you want to build a new home on a coastal property in the "Coastal Hazard Zone", your house must be movable (this does not apply to alterations on existing homes within the "zone").

Naturally, the law is there to protect home owners in the future but, unfortunately, it doesn't extend to advising engineers, architects and builders just how to create a movable house.

However, a long-standing RMBF member, Shannon Moyle and his team from Moyle Construction in Mt Maunganui, is in the midst of discovering just how it can be done.

This 880 sq m home has three levels, a seven-car garage, an internal elevator and, just to make it interesting, a swimming pool on the top floor.

The ground floor is constructed of pre-stressed concrete, and the first and second floors are steel and timber. The steel structure wouldn't look out of place in a commercial building, but the trick is to ensure that the finished building is light enough to actually move if required.

So how does it move? The entire home is built on top



of teflon skids. Made from concrete with Teflon liners, four of these 800mm wide skids run from the front to the rear of the property.

Underneath each of these skids are approximately 130 timber piles at 1200mm centres, driven between 3.6m and 6m deep.

Should the house need to be moved, four two tonne

jacks would be placed between buttresses at the seaward end of the property and the whole operation would take 14 working days to complete. This includes removal of the entry ramp and a section of the garage.

Local engineers MCH Ltd are the brains behind the design which includes full methodology to dismantle and move in the required council time frame (14 days). This has been very well thought out by all involved.

One of the major challenges in the design and construction of this home is to ensure the services, including plumbing, electricity, gas, sewerage, drainage and the elevator pit, are all in a perfectly straight line in preparation for the house being moved. Therefore, the entire area beneath the ground floor is accessible.

Also, because the pool is on the top floor, the residual movement of 30 tonnes of water in relation to any seismic activity magnifies the stress on the two floors below. To combat this, the house has a 20mm control joint running right through it from one side to the other.

The innovation of engineering on this project has meant an extremely close working relationship between the council, the architect, engineer and builders to ensure acceptable solutions, a lot of which they've never seen before.

This type of project is a first for Shannon and his team at Moyle Construction. There will, no doubt, be a lot of registered master builders looking forward to seeing the end result!

