

Renovating a Home

Final Script

Introduction

Renovating a home is a unique and complex design challenge.

Darryl: “Renovations, you’re working with old work, so you’ve just got to adjust things and work out the problems that come along.”

The owners of this house started with the existing structure, and then completely changed both the interior and exterior. The aim was to create a modern home, which would be functional and easy to live in.

Debbie and Mark were looking for an existing home that Mark could renovate. They looked at an old house that had been on the market for a long time, that no one seemed interested in buying. What it did have was a fantastic location.

Mark: “I’ve always wanted a house with a view, and we were always looking at a view from further back. And it’s panoramic views here rather than views through trees, and we’ll never be built out. I think that’s the big benefit of this house, and its location you’ll never lose the view.”

The full brick house was built in the late 1940s. It was art deco in style, with a fireplace, wrought iron railings and ceiling cornices typical of the era. In its day, it was quite a prestigious property, but had been left to deteriorate. Debbie and Mark made minor alterations to the interior when they first moved in. Then, after six months, they decided on a complete renovation.

Mark: “What we are trying to do is rejuvenate the whole house. We’re only leaving the bare structural components here. What we are doing will give the house another thirty year life span.”

Design

Debbie and Mark saw great potential in the house, and came up with a simple and effective design concept for the renovation.

“I drew up all the proposed extensions, then, gave all the proposed drawings to an architect. The architect then came to the house, had a look at the drawings, had a look around the house. Couldn’t find many changes he would recommend to the drawings. So, we ended up going to DA with the set of drawings that I had given him to draft up.

Subtitle: Exterior Design

The first major design consideration is to address the problem of poor access to the house, and the lack of parking.

Mark: *“The existing driveway up to the garage is very steep, and Debbie my wife is too scared to drive up the drive.”*

Mark: *“There is very restricted parking here around the area its all one hour parking across the road. There’s no parking in the street on weekends.”*

To solve that problem, the front has to be excavated and a new double garage recessed in from the road, with off-street parking for up to four vehicles.

Mark: *“This will allow us access to the house under cover.”*

The old brick exterior will have a sleek new surface after it is bagged with cement and then painted. Old porous roof tiles are being replaced with a metal roof. The terraced backyard is also being excavated, creating a wider more practical courtyard and barbeque area.

The original house had no front balcony. One is being constructed to take advantage of the view. New large windows will open up the lounge, kitchen and living room areas to the available light.

Subtitle: Interior Design

The pine floor is replaced with a hardwood timber floor.

A new kitchen will be installed with a modern design of polyurethane doors, stone tops and high-quality appliances.

Every timber window is relaced with commercial-quality aluminium ones, giving the house a brand new look.

All the bathrooms are being renovated. The main bedroom en suite is very small, and will be enlarged to twice its existing size.

With the plans approved by the council, it’s time to start construction.

THE GARAGE – Functional Design

The new garage and entrance will be the most functional feature of the entire project, but the most demanding. As the builder, Darryl has to manage every phase of the construction. His knowledge and experience will enable him to co-ordinate every sub-contractor involved.

As a rough guide, Darryl paints the perimeter of the whole excavation. It would be impractical to use a string line in this situation. Excavation for the garage proceeds at a great pace, while working through soft soil. But, once ironstone is encountered, the rock has be painstakingly broken up.

At the same time, the old garage floor is removed, with this area later converted into a spare room. The concrete is cut with an angle grinder allowing for easier removal with a bobcat. This is far better than the vibration and dust created using a jackhammer.

Darryl: “A far more efficient way of getting the pieces out quickly. Not vibrating the house causing cracks everywhere. Just cut them into manageable squares for the excavator to get rid of, it’s a better way to do the job”.

Later, a new floor will be laid on this level.

The wall in this area has to be strengthened with concrete.

Matt: “Dig a hole so we can keep this wall up. We’re going to underpin it. Get down to rock and then brick it up”.

By doing this, concrete reinforcing sits on the rock shelf below, forming a stable foundation. The excavation takes longer than expected. Not surprising when they have to cut through tonnes of solid rock.

Mark Flew: “Are, there’s probably about 700, which includes the rock factor and bulking factor”.

In fact, over 1200 tonnes of rock and soil were removed from the site.

While the builder tries to get every facet of construction to run smoothly, there are some things over which there is no control. For three weeks storms and heavy rain lash the Sydney area, turning the excavation into a mud pit, and construction grinds to a halt.

Darryl: “We’ve had three years of drought and now it’s rained for three weeks solid. Trying to keep the dirt off the road. The council is on to you all the time about keeping the streets clean. So you’ve just got to keep ahead of that, and it slows you down.”

The rain finally clears, timber formwork is in place, and steel reinforcing is laid in preparation for concreting.

Darryl: “It’s just put the job back a couple of weeks. Hopefully we can get the concrete in, get the block work up and start getting on with it.”

The steel creates a flexible, but strong bond with the concrete. The steel mesh has to end at least 50 mm from the formwork. These small chairs lift the steel 50 mm from the surface of the concrete. By creating these gaps, concrete cancer does not form in the slab.

The concreters move in, and this very experienced crew lays the new garage floor. Concrete is a mixture of cement, water, sand and aggregate, or blue metal. Using a laser level ensures accuracy and makes the process more efficient. The vibrator packs the concrete tightly around the steel, eliminating air pockets, which would weaken the slab. The top of the slab has to be at least 50 mm above the steel mesh. Concrete takes about one week to cure.

Hollow concrete blocks are laid over the steel form bars, which extend up from the slab. Steel is placed vertically and horizontally every second course of blocks for maximum strength. The walls have to support an incredible weight of soil and backfill. The bottom course of blocks has a gap so that excess cement can be removed. This ensures that, when concrete is poured, it completely fills the wall.

Additional steel bars are cut with an angle grinder and dropped into the blocks for extra strength. On the outside of the block wall, a geotech mesh will separate soil from the blue metal backfill next to the wall. Blue metal allows water to easily run out through the agricultural line on the outside of the wall. If soil was next to the wall, sediment would clog the agricultural line, causing minor flooding in the garage.

On the garage roof, form bars extend through the slab, where blocks will be laid on top of them. The turnovers tie to the steel mesh, locking the slab of the garage roof to the concrete wall.

The steel mesh and bars are tied in readiness for concreting. The stairs and roof of the garage are poured.

The job is completed when blocks are laid for the garden beds. Grass will be planted on top of the garage.

INTERIOR PREPARATION

While work on the garage is continuing, the kitchen and lounge room area is demolished. Stud walls are knocked down, and the old ceiling is removed leaving the front of the house completely bare. The original kitchen window is bricked up for privacy.

Bedrooms and bathrooms are also stripped out in preparation for the plumbing and electrical work.

New interior walls are brick rather than timber stud. This will prevent problems where cement rendered and plasterboard surfaces join.

Darryl: "If you've got render coming to a gyprock wall, there could be a crack down the joint."

Downstairs in the old garage, battens are attached to the walls. New stud walls separate the wine cellar from the TV room. Once erected, the plasterboard is fixed to the studs and is ready for painting.

The use of a diamond-tipped, water-cooled masonry saw makes cutting out for windows an efficient and dust free job. Working first from the outside, then inside, this precision cutting is a good example of using the correct technique and equipment for the work required. The new windows will provide far more natural light into what was once a dark part of the house.

EXTERIOR RENOVATION

Mark: "We're replacing the old terracotta roof tiles which are now porous. We're putting a new metal deck roof on there."

The metal roof is an integral part of the exterior design of the house.

Mark: "We want a bit more room out the back, so we're excavating the back yard. And we're pushing the retaining walls back by about two and a half metres. And we're converting three terraces to two terraces so that you'll have a nice grassed area, which can be used for barbeques or something out the back."

The backyard is excavated and prepared for the cement slab to be poured. Once that is completed, the block retaining wall is erected. A pipe is laid prior to the final pour, to allow rainwater to drain away from the courtyard.

Again, steel reinforcing is dropped into the cavity. The concreters return, and the pumper uses air pressure to push the concrete one hundred meters uphill to the back yard. It is a relatively quick job and once the blocks are full, it will have a masonry cap placed on top.

Mark: "We're bagging the outside of the house, and painting the outside of the house so that it gives it a completely new look."

The traditional form of bagging uses a Hessian bag, which is filled with cement and rubbed onto the bricks, leaving a rough, textured finished, which is less expensive than render.

On this house, a smooth, rendered surface was required. A thicker cement mix was used, and applied with a trowel and a float. A binding agent is added to the mix, keeping it moist which helps with surface adhesion. The mix needs to be a runny paste consistency. Too dry and it won't flow, too wet and it will dribble down the wall.

The most dynamic change to the house will be the front veranda.

Mark: *“The veranda’s going to be about three meters wide, off the upper level of the house, the first floor.”*

The concrete is laid in preparation for placement of the support beams. Weighing 500 kilos each, installation of the beams was a difficult process. They are supported by two poles, spaced ten meters apart, which are bolted into the concrete. One beam spans and supports the space for the sliding doors.

Mark: *“We are extending the roof over the veranda so that it is completely covered area. So it will give us all weather use of that deck, and also it will stop a lot of the sun coming in the morning, in through the triple sliding doors”.*

The timber framework for the veranda roof is bolted to the support beam. And the beam is also bolted to the rafters, which are spaced 600 mm apart.

With the job progressing steadily, electricians wire up the external lighting.

Fibro has to be fixed under the eaves. It is measured, marked, scored, and broken off, ready to be fixed to the timberwork. For efficiency, self-tapping, countersunk plasterboard screws are used.

INTERIOR RENOVATION

The sliding doors at the front of the house are installed. Electricians have wired the indoor power and lighting. Plasterboard is fixed to the walls and ceiling. The inside is taking shape. Plasterers have sanded and prepared both the plasterboard and the cement rendered walls, in readiness for painting.

Darryl: *“Pretty much gone as per the plan, we haven’t really changed anything. There might be little things you might have change because of the existing house, you have to work to that. But ah, the plan is pretty much as per the plan.”*

But there are always going to be problems to overcome.

Darryl: *“No, no, no, we haven’t got a problem with the tiles have we Deb. We haven’t got a problem. When they delivered them they dropped them and broke a heap of them, so, there’s a dispute over that.”*

The tilers had begun their work when it was discovered that one third of the tiles had been broken on delivery. So Darryl and Debbie needed to sort out the useable ones in order for the work to continue.

Darryl: *“Are no that’s broken there. Any that’s broken right in the middle, and you can get 200 and 200 just put them to one side.”*

They had enough for the tilers to complete one of the bathrooms, all the toilets and the laundry area. Replacement tiles were quickly ordered and delivered

In another bathroom, the old terracotta piping was left in place when the new concrete floor was laid. However, these pipes were found to be incompatible with modern plastic piping.

Darryl: "Just have to take out the old plumbing 'cause they are different settings to the new ones. So we've got to rip it all out, put the plastic ones in and re-concrete it all again. Back to square one. Another minor problem conquered."

The concrete floor had to be dug out and re-laid, so the tilers could complete their work. Floor tiles are laid first. The wall tiles sit on top of them, creating a much better seal on the internal joint. This overlapping prevents cracking, and the possibility of water seeping through a join on the floor.

In building, preparation for each stage is crucial to ensure a successful outcome.

The old floor has to be perfectly level for the new hardwood top.

Darryl: "There's a bit of a hump from the existing building, so we're going to take a planner and take the top off it so its level for the floor boards. Nail just over the top of these. Use a gun with special nail, and it nails into the tongue and you don't see the fixings."

Flexible polyurethane adhesive is applied to the old surface. It dries with a silicon-type consistency, is extremely flexible and does not crack. The boards are end matched, laid and hammered, and locked together. This technique allows shorter ends to be used near walls with no visible joins, eliminating wastage. When the boards are joined lengthways, the ends are cut on an angle. Staples are hammered through the profile, creating a finish with the nails concealed.

When completed, the Blackbutt flooring gives the house a warm feel.

FINISHING OFF

The work is nearly complete for Darryl. The main bedroom has a solid core door. A chisel placed under the door sets the height. The positions for the three hinges are marked on the jamb. The hinges are then marked on the door. A marking tool sets the depth for the hinge. The door is chiselled out. The doorjamb is also chiselled out. This work can also be done using a router. The hinges are secured in place with countersunk screws. Pilot holes are drilled. Finally, the door is attached to the doorjamb.

All the doors are hung, bathrooms and built in wardrobes are fitted out, and the exterior painting is under way.

After the interior walls have been undercoated and sanded down, they can be painted with the final colour. The paint is sprayed on. This method allows for more paint to be absorbed. Using this technique, two coats are equivalent to three coats of paint applied with a roller. After spraying, a roller is then used to ensure that the surface has a smooth finish.

When painting is completed, architraves and skirting boards are added to the windows, doorways and walls, using off cuts, since they will eventually be painted. The kitchen can now be installed.

The kitchen carcasses have been measured and cut at the factory, ready for the installers. However, with every installation, minor adjustments have to be made. Edges are trimmed, and a jigsaw makes a cut for the plumbing, which will supply water for the icemaker in the refrigerator. This cupboard is levelled and measured for the correct height above the bench top. A prop holds it in place while it is secured to the walls. Countersunk screws and wall plugs are used for fastening.

The sliders for the draws run on ball bearings, and have a spring loaded, self-closing mechanism, designed to close and stay closed. They can support a weight of 41 kilograms, fully extended. The kitchen is completed with the installation of the Caesarstone bench top. The area has been transformed into a clean, modern, and functional space.

Mark: *"It works well, got really no complaints about the design. Only if it was a brand new house would I change a few things. But, converting an existing house you've got to accept some of the existing design."*

The design concept for their renovation has achieved everything Debbie and Mark wanted. The new garage provides off-street parking for four cars, and covered access to the house. The exterior has been modernised with a steel roof and rendered, painted walls. New windows allow natural light to reflect off the interior walls. Bathrooms are completely new, while the bedrooms are larger, with built-in wardrobes. Finally, the veranda opens up the living space to the magnificent view.

END CREDITS