

# Moreton Mill's Maroochy River Depot

## Part I

by Lynn Zelmer

*Moreton Mill's closeness to Brisbane meant that its tramway was the best known of the Queensland sugar cane mills, and its Maroochy River lift bridge is one of the tramway's best known locations. The lift bridge has been modelled on a number of occasions (see NGDU issues 17 and 33). This article is the first of a short series focussing on the nearby lunch room and sand drying facility variously known as River Store and River Depot.*

This relatively modern iron sheathed structure served for 'smoko' breaks and locomotive sand drying until the mill closed more than a decade ago. The building was originally equipped with a table and benches, but it was vandalised and navvies took their smoko outside around an open fire on the river side of the front of the building. Sand was dried with a wood fire, then carried in a bucket to the locos.

*TITLE PHOTO: Moreton Mill's River Store and the newer Maroochy River lift bridge. This photograph was taken in 2002, likely prior to the vandalism that burned part of the main building. The bridge span is up and the men walking away suggest that Bill-Bill has just crossed the river and is heading back to the mill. Brad Peardon photographer.*

### Brief History

A bridge over the Maroochy River was approved in 1920 to assist the expansion of cane growing areas following World War I. This bridge, like an earlier one over Petrie Creek, was constructed with a lift section to allow barges and punts to continue using the river while not requiring the tramline to be elevated. It was completed in 1921 and "lifts



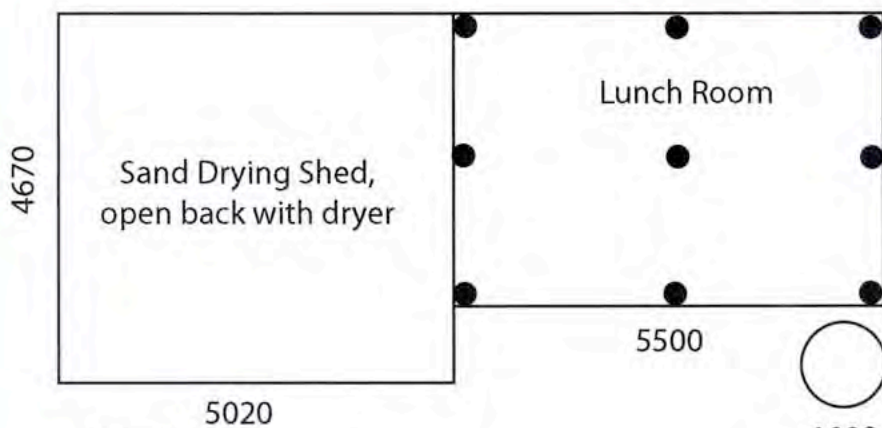
*RIGHT: The original River Store at the Lift Span River Bridge, Maroochy River, date unknown, courtesy of Laury Francis from the Durundur Railway Bulletin, 264 (Aug-Sep 2002, p 1). Note the small dock and shed, as well as the two-part building complex.*

to a height of 26 feet (7.92 metres) providing a space 17 feet six inches (5.33 metres) above the high water mark for boats to pass through" (EPA). The bridge provided access to cane areas on the north side of the river and avoided the need for punts or barges to move the cane across the river.

An early post-1921 photo shows what appears to be a general store with a small river landing west of the bridge on the south shore. This would have been a reasonable location for loco fuelling and watering facilities during the steam era but the mill history isn't clear about its use. The store buildings disappeared at some point and a 1996 Maroochy Libraries photo appears to show an out-depot under construction with a fuel bowser, sand drying facilities and a lunch room. The buildings were demolished by 2004 following the mill closure.

## The Structures

The dimensioned sketch resulted from combining Brad Peardon's field dimensions with my analysis of photographs taken in 2003. Unfortunately, as often happens with field dimensions, combining measurements (eg window widths and spacing) doesn't always agree with overall dimensions, and it wasn't clear whether vertical dimensions were taken from the base of the building or ground level. Since the building has been demolished it isn't possible to verify dimensions, so use your own judgement and refer to the photographs to resolve conflicts.

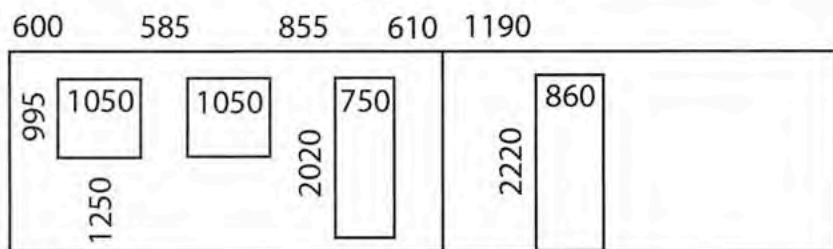
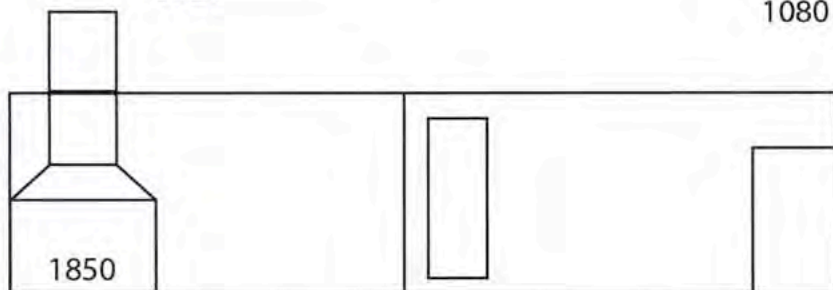


### Moreton Mill's River Store

Field dimensions c2003  
Brad Peardon.

Drawing not necessarily to scale; some dimensions were estimated when field dimensions did not agree.

Water tank ~1830 high and on concrete blocks.



Front (rail) side

Note that the building was likely constructed using Imperial measure while field dimensions are metric.

Drawing 2008, Lynn Zelmer

*RIGHT: River Store bridge, sand shed and lunch room on the south side of the Maroochy River, 1996. The lunch room and sand drying shed shown here appear to have replaced earlier mill buildings at the same location. The fuel tank and other details suggests at least some regular loco out-depot services. Photographer unknown, picture sourced from Maroochy Libraries/Picture Australia.*

The lunch room is a simple corrugated iron and timber building with the sheets laid horizontally, rather than vertically. The triangular section of wall under the end wall eaves (165 mm eave) is timber siding. The window coverings are hinged at the top to open, the floor is rough planking on a basic joist and stump framework and the roof supports are framed timber, not trusses. The site is reasonably level but the metal-capped stumps range from 150-390 mm. This would be enough to keep the floor timbers dry, but likely left the building vulnerable when the river flooded.

The timber uprights visible in the interior photographs suggest that the building originally had a built-in lunch table. The lunch room has guttering on both front and back with a simple downspout into a ~450 mm access hole in the water tank. While the water tank is raised on hollow-core cinder blocks, some have sunk into the ground, resulting in a definite tilt to the tank and the downpipes missing the access hole. This water may have been intended for drinking and washing purposes, but the open top and the lack of filtering would have been a potential health hazard. Modelling the lunch room on a contemporary railway would require modern tank fittings.

The sand dryer is a large metal box with a chimney set on the open side of the timber post and iron shed, with the lunch room forming one side. Sand appears to have been dried using a wood fire and carried in buckets to fill the loco sand boxes. All traces of a fuel bowser, if that was what was there in 1996, had disappeared by 2002-3.

It appears from one of the photographs that the dryer shed had a flat roof with a 440 mm eave surrounding the chimney. Other eave overhangs were narrower and conform to standard construction practice. If in doubt about dimensions, remember that the building was likely constructed by local workmen trained in the Imperial era and use standard construction practices for farm buildings.

*RIGHT, ABOVE: Front view of the River Depot showing the general layout with the track leading to the lift bridge (river to the right of the photo). The water tank is just visible behind the building on the left, and one of the two men on the right is from Bil-Bil's train crew enjoying his 'smoko' with a very small fire located between the large timbers and the sand drying shed.*

*MIDDLE: This end of the building has some damage from vandalism but clearly shows the timber stumps, iron sheeting, metal corner caps, timber siding under the eave overhang and the drain pipes from the roof guttering. The timber siding and roof framing on the other end has been burned out. The sand dryer chimney can be seen beyond the water tank and provides an indication of how far the shed roof extends beyond the main building. The windows have been covered with metal sheeting on a top-hinged frame.*

*RIGHT: Three-quarter view of the River Store with the short stumps under the building. This shot was taken after the vandalism and the far end of the building, originally much the same as this end, has all of the timber components burned out.*





LEFT: Interior showing floor construction, from the back door. There appear to be three timber beams set on the stumps and running the length of the building, with a conventional floor joist and header construction under the floor boards. Note that the header and joists are notched and interlock to prevent twisting.

BELOW LEFT: Interior looking from the door end. Note that the roof has been framed, not constructed from pre-built roof trusses.

BELOW: Inside view of the back and end wall showing the framing. The upright timber on the left, and its companion at the other end of the building, is likely all that remains of what was likely a built-in lunch table and benches.



BELOW: Interior view towards the back door showing some of the vandalism. Note the very simple framing for both wall and door.

BELOW: Inside view of the end and front wall showing the framing and the window cover, hinged at the top for opening. The front wall and other end do not have the cyclone cross-bracing.





ABOVE: Back side of the sand drying shed showing the dryer, dryer chimney, shed roof framing and interior construction. Note the construction-style adjustable steel post holding up the roof joist.

RIGHT: Front view of the sand dryer and drying tray. Note the adjustable steel post set on the angle iron along the dryer side and the loops for lifting with a crane.



ABOVE: Sand dryer without its chimney top in 2004, following the demolition of the River Store. Murray Inglis photographer.



## Modelling the River Depot Structures

I wanted a modest sized out depot for one end of my On30 mini display layout, the Capricorn Sugar Rail Museum (NGDU 42-44). River Depot appeared to be ideal as long as I included a fuel tank and bowser, typical out-depot maintenance details such as a work bench and tools, crew lockers, etc., and the dunny which hadn't survived into the new century when we visited the site a decade ago for a railfan BBQ.

By 2008 I had made reasonable progress on both the lunch room and the sand dryer using traditional scale dimension timber and styrene techniques. While I was quite pleased with the sand dryer, for a variety of reasons I wasn't happy with lunch room and my exhibition layout took a different form. The next articles in this series will look at my modelling using both traditional and photorealistic card modelling techniques.

## Acknowledgments and References

Alcorn, Berenis and Dunn, Robin (1997). *Moreton Sugar Mill: Sweet heart of Nambour*, Nambour: authors.

Environmental Protection Agency/Queensland Parks and Wildlife Service (2006). "Tramway Lift Bridge over Maroochy River", Cultural Heritage Report, <http://www.epa.qld.gov.au/projects/heritage/index.cgi?place=602527&back=1>, downloaded 27 Dec 2007.

Maroochy Libraries (1996). 'River store bridge, sand shed and lunch room on the south side of the Maroochy River, 1996' (picture). Reference Number: M754156, downloaded from Picture Australia, 7 Mar 2008.

Unless otherwise credited, photographs were taken by Lynn Zelmer on the occasion of a LocoShed excursion, 26 September 2003. Additional photos and other resources can be found on the CaneSIG web site ([www.zelmeroz.com/canesig/](http://www.zelmeroz.com/canesig/)). Ultimately a card model kit will also be available there for the two main structures and sand dryer.

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# Moreton Mill's Maroochy River Depot

## Part 2

by Lynn Zelmer

*River Depot near the Maroochy River lift bridge is one of Moreton Mill's best known locations. The depot's background was the focus last issue, this article begins documenting my modelling attempts.*

### Disappointment: The Timber and Styrene Model

Last issue I indicated that I wasn't happy with my first lunch room model, built using traditional scale dimension timber and styrene techniques. The prototype structure followed local practice for erecting farm buildings and garages. It had a timber framework with corrugated iron sheathing on the sides and roof, and a small section of timber siding under the peak on each end.

While my model didn't exactly follow the prototype, it was built using standard construction techniques as a guide. The dimensional lumber was stained in advance, a jig was used to prepare the roof trusses and the model used individual board construction for both framing and flooring. The roof was removable for ease of interior detailing, and the sheathing was cut from commercial corrugated iron sheet styrene pre-painted by hand before assembly.

I was never really satisfied with the model as it was developing, but by the time detailing was required I had become quite unhappy. The first problem was that the model's visual proportions didn't match the original. While the model had three longitudinal beams under the floor framing, I now suspect the original's floor framing simply rested on stumps. I could likely have rescued the model at this point by sanding off the underfloor beams but....

The second problem resulted from my staining and corrugated iron painting techniques. The original timber framing was painted white weathering to gray, while the model's timber components all resembled newly cut hardwood. The roof's painting and weathering was acceptable (individual sections of commercial styrene corrugated iron hand painted with acrylics), but the hand painted exterior corrugated iron sheathing was not acceptable. I could probably have rescued the model with a very careful repaint and weathering, but....

*TITLE PHOTO: This image appeared with prototype information on Moreton Mill's River Store in the April 2014 edition of NGDU. The building has an interesting variety of materials, from timber stumps, iron sheeting, metal corner caps, timber siding under the eave overhang and iron drain pipes from the roof gutting. The sand dryer chimney can be seen beyond the water tank and provides an indication of how far the shed roof extends beyond the main building. The windows have been covered with metal sheeting on a top-hinged frame.*

The observant reader will also note that the model lunch room is also four feet shorter than the prototype, a decision that I had made deliberately to selectively reduce the space requirements for the total structure. Adding everything together I abandoned further construction at this time.

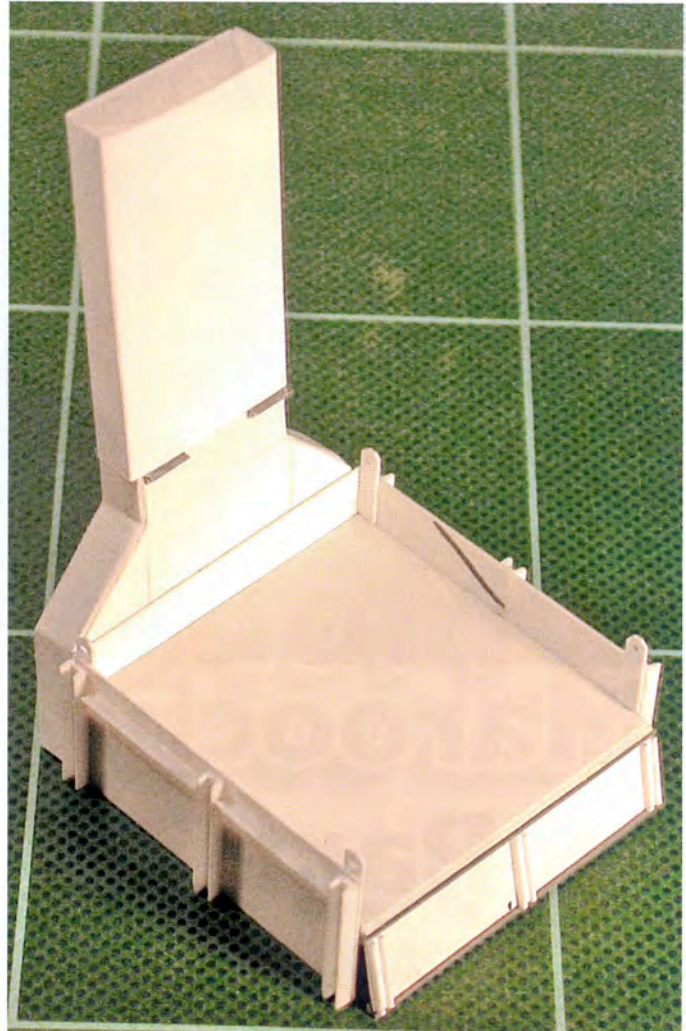
I was happier with the sand dryer. The prototype was built from heavy iron with a galvanised iron chimney extension, and was located in a traditional timber post and corrugated iron shed. The model dryer and chimney could have been constructed from a variety of materials, however styrene shapes and sheet material produced a quite acceptable result once painted and weathered. At this point (2008) I was intending to build the drying shed from timber posts with more of the plastic corrugated iron sheathing, but I couldn't go ahead with the dryer shed until I had an acceptable main structure to form one wall.

While I had intended to incorporate the depot into the Capricorn Sugar Rail Museum mini-layout, construction on which had started late 2008, I was unhappy enough with the lunch room to set both it and the dryer aside, and instead build several other conventional and photorealistic card models for the layout. As many readers will be aware, the resulting CSRM layout and models have also appeared in Narrow Gauge Downunder articles.



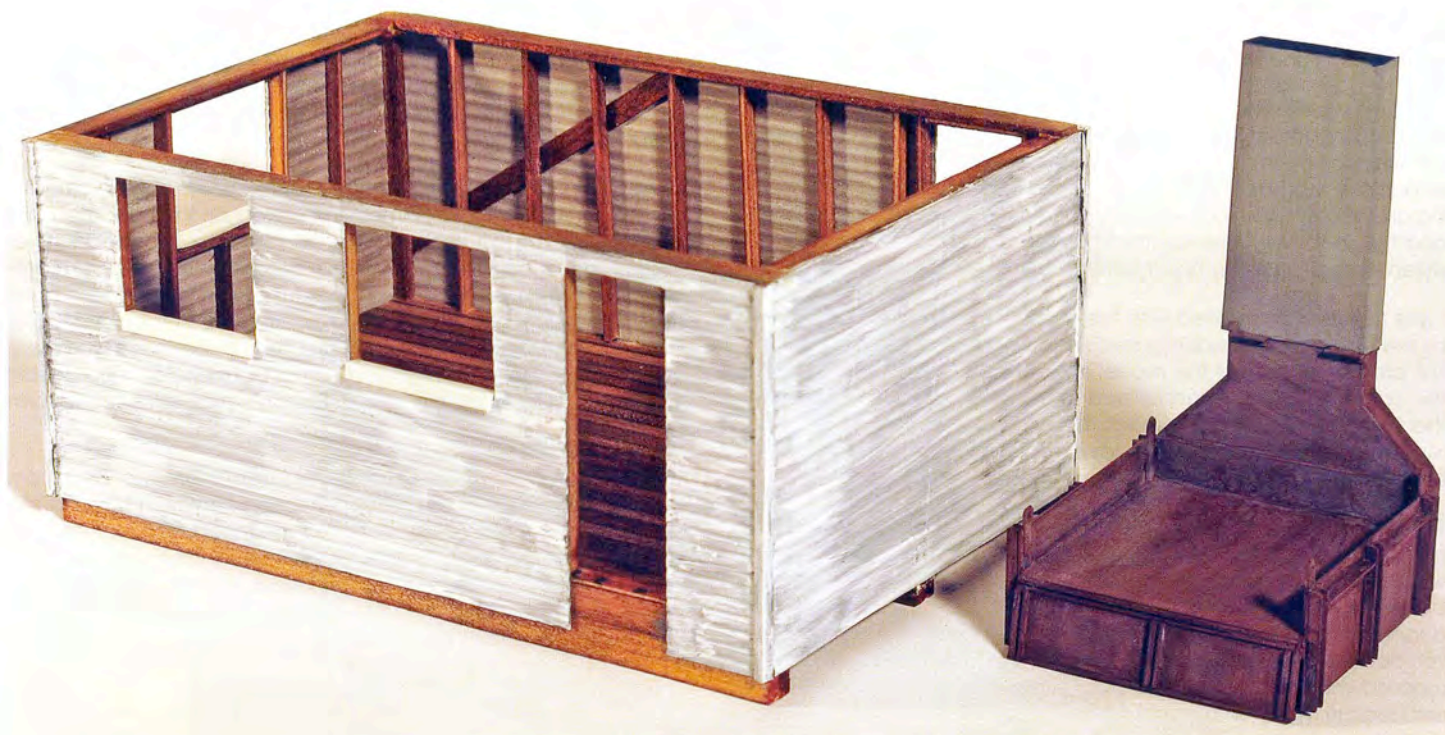
ABOVE: The first chimney was laid out on styrene sheet, cut and assembled with interior square strips reinforcing the corners. Adjacent (joining) angles were adjusted by sanding during assembly, with the near side of the upper portion of the chimney ready for gluing in this view.

RIGHT: Base and chimney assembled, construction materials included styrene sheet and shapes.



ABOVE: The removable roof module for the timber and styrene model. Trusses were built on a simple jig and held with Blu-tack for gluing. The lighter coloured timber component on each end is cut from commercial clapboard siding. Rigid styrene CI sheathing meant that a limited (and unprototypical) number of purlins were required, even for individual scale sized corrugated iron sheets.

BELOW: The dimension timber and styrene version of the lunch room showing the individual board framing for the interior and the styrene sand dryer. The large CI gap below the door opening would be concealed with a timber step. Undoubtedly spray painting would have provided a better CI finish, but the horizontal placement of the sheathing looked 'wrong', regardless of its prototypical correctness.



## Another Approach: The Photorealistic Card Kit

The abortive depot project continued to haunt me, perhaps because the unfinished model had been 'temporarily', but prominently, located at eye level on one end of my small (and still unfinished) home layout. As a result, I opened/modified the computer files containing the building's plans from time to time and eventually started developing the model as a photorealistic kit.

I had been happy enough with the sand dryer itself as a styrene model, but the sand dryer would be an important component of a resulting kit. And its construction posed some new challenges. Could I, for example, successfully model small angle iron and channel components for the sand dryer in card, and with scale dimensions?

The proof of concept model dryer took over a year of occasional focus to develop, and I was only successful once I started using Epson's photo quality inkjet paper for the surface skin instead of card. And even then I haven't been able to model angle/channel details smaller than about two scale inches. On the other hand, the resulting model has enough relief that the implied detail is more than acceptable.

My original timber and styrene lunch room model was intended to have interior detailing and I couldn't see why the card model's interior shouldn't likewise be detailed. I therefore designed the card kit from the inside out, with full interior framing. The removable roof required a roof truss that would be strong enough to hold its shape with the corrugated iron roof sheathing in place and flexible enough for easy removal and replacement. The kit will also have the option of horizontal or vertical corrugated iron sheets for exterior cladding, timber siding under the eave at the ends, and stumps to raise the building off the ground.

The O scale photorealistic lunch room model in the photos is my 'first build' and has vertical corrugated iron sheathing, more common than horizontal sheathing on older buildings such as might be relocated to a museum. The innermost texture layers (interior and exterior) were printed as one unit on an A3 printer so that they could be folded along the bottom edge of the wall and glued back-to-back as the base for the four walls. While texture layers on the building's interior had to be cut short at the corners for folding into a box, there is only one corner where an actual join (and corner reinforcing) was required.

The prototype structure had no doors, however I wanted a lockable structure and added doors to my model. This will allow me to eventually add a workbench, shelving for supplies and tools, lockers and bunks for overnight accommodation, and food preparation facilities. There are a variety of prototypical ways of attaching the shutters so that they open at the bottom. I've chosen to use hinges at the top, regardless of the fact that the hinge placement would defeat the desire for a secure building. Perhaps they've been attached with those special screws/bolts that cannot be removed with ordinary tools.

## Personal Challenges

As regular readers will be aware, my current interest (obsession?) with photorealistic card modelling started about five years ago. The relative lack of Queensland specific O scale models, and my concerns over the realism of some of the models that did exist, led me to experiment using computer skills as much as modelling skills. Photo-based textures have generally answered the realism question for me, and each subsequent model provided modelling challenges to keep up my interest and extend my skills. For example:

- Modelling normal clapboard siding, windows and doors, etc., in card is relatively straightforward. Start by applying individual boards at the bottom of the wall, and slightly overlap each subsequent board similar to the prototype. This only needs a sharp knife (scalpel), steel straight edge, and care to avoid errors resulting from boredom.

An outline of the wall and door/window openings is all that's required as a base for a model, although I tend to use a base sheet printed with the coloured texture to guide the board



ABOVE: The now demolished Boldeman Soaps' warehouse in Rockhampton which provided the photorealistic corrugated iron texture for the lunch room wall sheathing.

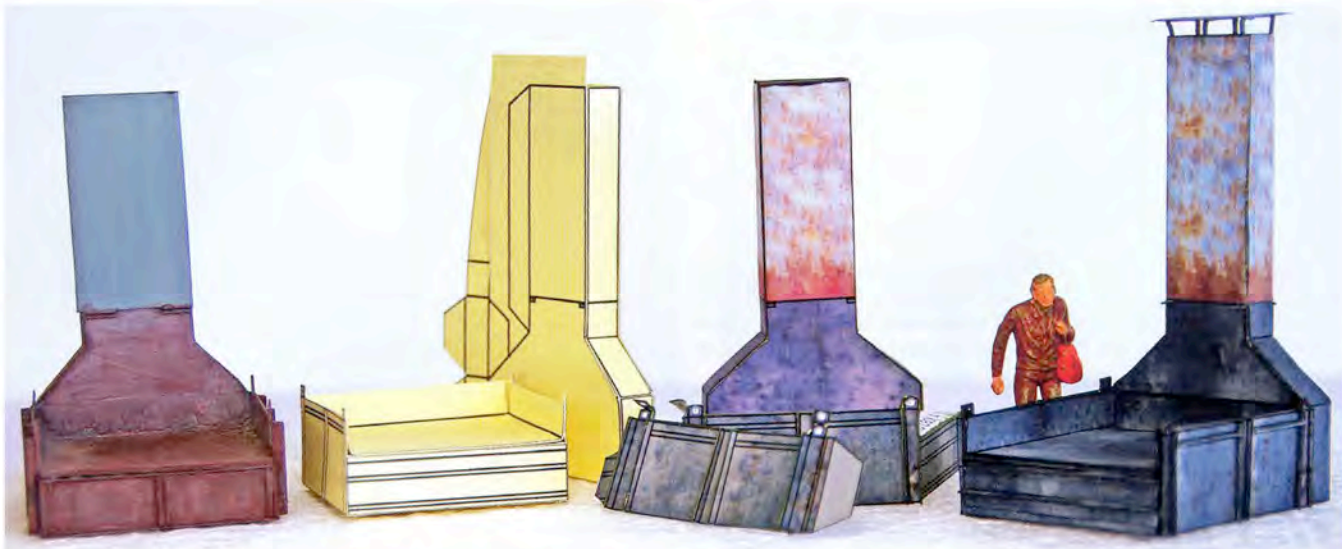


ABOVE: Lunch room walls assembled with floor in place and 't-bar' fitted to keep the side walls from bowing in. Roof construction begun with one truss fitted at the close end and two at the other. The ridge board and three purlins currently hold the trusses in place, an additional seven purlins, as well as wind blocks, will complete the framework for the removable roof. The card spacer strips visible at the far end ensure that the roof module is removable



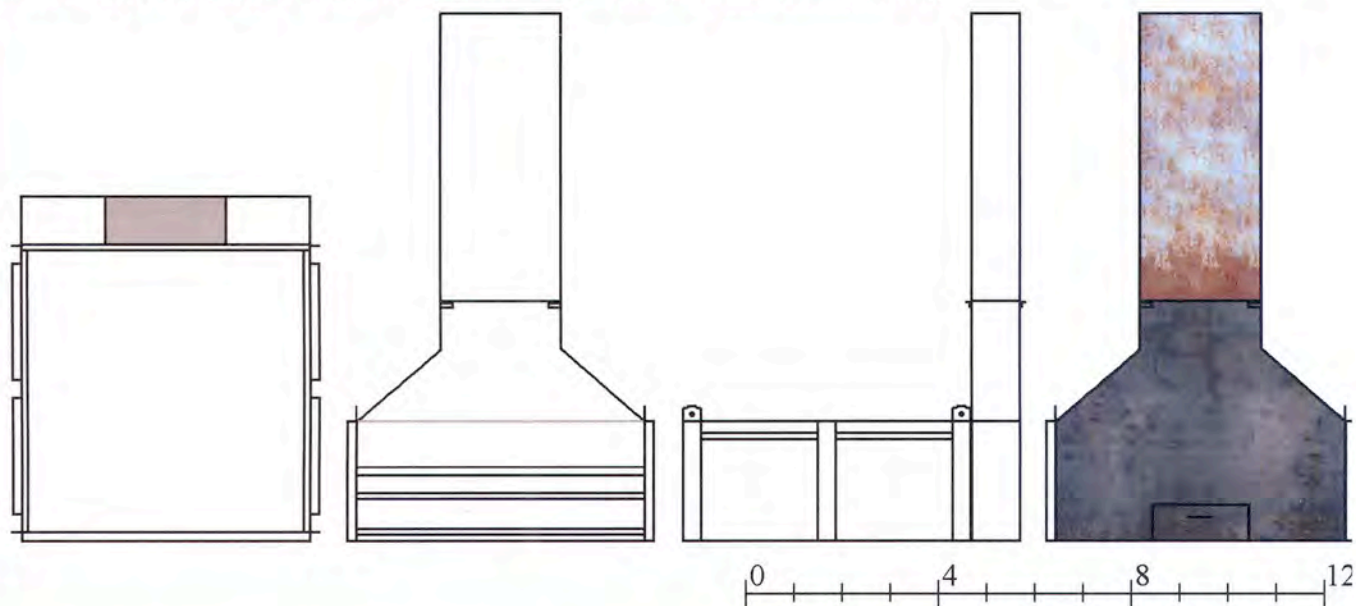
ABOVE: Roof module removed to show construction. The end trusses fit closely inside the end walls, and the ridge board fits into a slot at the top of the end wall to hold the alignment.

While barely visible, short segments of wind board have been fitted between each truss aligned along the top of the wall. This strengthens the roof truss assembly, fills in the spaces between the trusses, and avoids the necessity to cut truss slots along the top of the wall sheathing. Fitting the sheathing all the way to the roof, with trusses needing to be aligned with six slots on each side, simply did not seem feasible with a removable roof.



ABOVE: Evolution of the card model: Although the channel and angle irons are somewhat out of scale, the hand-painted styrene fabricated model (left) would have been acceptable once weathered with sand in the pan. The first version of the card dryer (centre left), printed without a texture layer, indicated that the card dimensions were acceptable — especially important for the angled section of the chimney. The corners were too obvious on the first textured version of the chimney (background centre right), thus the wrap-around galvanised section on the final version (right). The second and third iterations of the base (foreground centre right) experimented with the vertical bracing, a task ultimately made possible using a surface layer printed on photo quality inkjet paper, rather than card.

BELOW: Sand Dryer plan (O scale 1:48). Adapted textures © Clever Models llc ([www.clevermodels.net/](http://www.clevermodels.net/))



application. Needless to say, wider boards are easier than narrow boards to apply and keep straight, and larger structures need a lot of individual boards. The Queensland cottage in NGDU 40 and 41 detailed this development.

- Ridged Colorbond roofing, or the pressed steel sides of a shipping container (NGDU 47), required a similar technique, except that the ridges are spaced and don't overlap. The trick is simply to apply the raised components to a properly printed wall or side to serve as the recessed texture. Again, large surfaces need a lot of raised strips, and poorly spaced or out-of-square strips show up very easily.
- Successfully modelling chamfer board, however, was a different matter. It wasn't so much a matter of adding relief, but taking away from the relief. This proved almost impossible with card alone, but a card underlay with gaps where the chamfer depression belonged allowed a texture board printed on paper to be pressed into the required shape for a realistic QR camp wagon (NGDU 49).

The brake mechanism and other small components for the camp wagon model created their own challenges. I had read that using superglue, rather than white glue, resulted in a rigid

component that might even be sanded or filed, and superglue 'gel' certainly helped create a more sturdy brake lever assembly. Small nails or pins combined with a roll or disc of printed texture resulted in realistic queen posts and buffers, but couplings were fabricated from wire when cutting paper to a realistic shape proved problematic.

True to form, this structure presented some new challenges!

Angle iron and similar metal components large enough for a metal bridge are fairly easy to fabricate using card textures. However the bracing on the sides and end of the sand dryer were too small for my normal card/paper bending techniques. After discovering that card couldn't be folded fine enough, I switched to folding channels from textures printed on Epson's photo quality ink jet paper and gluing them to a base layer.

It proved too difficult to pleat the paper texture tightly enough to fabricate the three channels for a full side in one section, so individual channels were fabricated and trimmed to fit. On both sides of the dryer this resulted in the middle vertical brace (channel) being slightly off centre, but isn't noticeable in normal viewing.



*Texture for front and one end. Cut slit between front and end (red arrow) before folding along ground line to allow wall module to bend during assembly. The exterior wall is continuous but the break in the interior wall permits a square corner without crimping.*

*At right is an alternative texture, more akin to the original structure. While I haven't yet test built this version, its assembly would be identical to the vertical sheathed model.*

## Printing & Finishing

Printing the models on card has never been a major concern for me, since Office Works' 210 gsm A4 card is readily available in several colours and works well in my printer.

A local commercial printer also stocks a 250 gsm card with a slightly smoother surface. This also works in the printer and is available as an A3 sheet. The larger sheet gives me the option of placing walls for a smaller structure end-to-end, so that they fold around the corners rather than having to be joined. In the case of the lunch room, I was also able to print the interior and exterior textures so that they fold along the bottom edge to make an open box with only a single join. To enable the box to fold neatly, I trimmed a small slice from the interior textures at each end, creating small gaps at the interior corners.

A removable roof for the lunch room was the next challenge. The multi-layer interior bracing was installed with a bead of superglue 'gel' along the top edge to help minimise the potential for the walls to warp. A similar bead of superglue helped strengthen the top of the roof trusses.

Some warping of the long walls was inevitable, so a single 'T' shaped brace was added across the middle of the structure. This is not at all prototypical, but does keep the walls straight and shouldn't distract from the interior view when the roof is removed.

The dimensional timber and styrene model had solid ends because of the triangle of timber siding at each end. However the corrugated iron sheathing extends right up to the eaves on my photorealistic model, resulting in a potentially more fragile roof module. The roof trusses were carefully assembled on top of the walls with each new truss, purlin and wind stop increasing the module's strength. Time will tell whether the glue joints between the trusses and purlins are strong enough to hold the roof sheathing in place. If not, it cannot be much worse than the loose corrugated iron roof sheathing on a more conventional model. The double-sided roof texture was carefully glued to the purlins so that the finished roof can be lifted straight up for viewing the interior. Hopefully there is enough overhang of the walls that any warping and resulting gaps will not be noticeable.

# Gluing Tips for Card Models

- Press-on (pre-glued/self-stick) components and spray can glue have limited application in the hot/humid tropics. Both come unstuck after just a few weeks or months — a disaster if, for example, you've used either for assembling a laser cut model, attaching shingles or door/window framing.
- Good quality white wood glues works for most purposes with card and paper. They are safe, with no harmful fumes, and produce a strong bond with wood, paper, card, leather, etc. Avoid glues formulated for school use — my art class colleagues tell me they result in a very weak bond that sometimes won't last 24 hours.
- Colour the edges of each part prior to gluing to avoid the 'white edge' syndrome.
- Generally, strive to apply the glue to the destination, not the part being attached. Spread the glue evenly — I use the end of a flexible metal rule for large areas — but avoid getting it outside the area that will be covered by the part being attached.
- Use your fingers to ensure the parts are securely fixed in their intended location, clean up any unwanted glue, then use weights, clamps or other devices to hold the components until the glue is dry.
- Superglue should be used sparingly and only in a well ventilated area. However properly applied it results in components that are much stiffer than with white glue. The brake mechanism for the camp wagon in NGDU 49 is a typical use and it appears to have worked well to stiffen the roof trusses, etc., in this model.
- Two part epoxy also has some use in card modelling, especially where metal components under stress must be attached to card, as with the normally hidden truss rod ends on the camp wagon.
- Plan ahead! I often find myself waiting for parts that must be glued back-to-back before trimming to size, or for parts printed on paper that require card backing before use.
- Avoid cutting newly glued components until the glue is fully dry. Damp card tears, rather than cutting evenly. 12 to 24 hours under weights seems best in my climate.
- Keep fingers, tools and workspace clean to minimise unwanted glue spots or parts accidentally glued to the work bench, etc.

Finally, the rain gutters and downpipes were fabricated from paper printed textures and glued in place after the roof was assembled. My Queensland cottage model had guttering on one side only as the card I was using proved quite difficult to bend to an appropriate size. Photo grade inkjet paper, however, can be bent much more easily and holds its shape when dry. I used an A4 sheet of galvanised metal texture and bent/glued one end around a 1 mm thick steel rule, cutting it free only after the glue had dried. The result is a 'U' shaped trough with texture both within and without.

Downpipes are short lengths of the galvanised texture rolled around a thin brass wire and pulled free for installation. A tiny brass (sequin and bead) pin with a painted head was inserted in the gutter trough and bent as required to direct the downpipe. The downpipe paper segment was then pushed onto the pin and glued in place. With the glue dry and a spray coat of sealer applied the assembly is fairly robust.

The rain gutters and downpipes are fixed to the removable roof, so some form of connection is needed to the sloping pipe from the front to the rear of the building. In the short term for this model I'm going to simply attach the long pipe to the end of the building as if the connection between the two has come apart. A water tank is still required but I should be able to locate it so the rear downpipe spills into the tank.

## Success! And what comes next?

A decade on from photographing the depot, and after eight years of stop and start modelling, my lunchroom model is almost complete. While 'prototype modellers' might not be happy with the changes I've made, to me it seems to capture the 'spirit' of the now-demolished depot.

Yes, I've still got to construct the adjoining sand drying shed and add details such as fuel and water facilities, interior fittings and electrical power connections, etc. My next Narrow Gauge Down Under article will complete the sand drying facility and add some of the details, as well as introducing an On30 cane railway modular standard that several of us have been working on for the last few months.

In the meantime I've put enough effort into the project that the free downloadable lunchroom and sand dryer kits, once packaged and uploaded to the web site, should produce high quality models. I would be interested in seeing what you do with them and their companion photorealistic card kits.

## Acknowledgments and References

Timber and metal photorealistic textures have been adapted from © Clever Models llc ([www.clevermodels.net/](http://www.clevermodels.net/)), CG Textures ([www.cgtextures.com/](http://www.cgtextures.com/)) and the author.

Unless otherwise credited, photographs were taken by Lynn Zelmer. Additional photos and other resources, including a free downloadable O scale kit for these models, can be found on the CaneSIG ([www.zelmeroz.com/canesig/](http://www.zelmeroz.com/canesig/)) and Modelling the Railways of Queensland Convention ([QldRailHeritage.com/mrqc](http://QldRailHeritage.com/mrqc)) web sites.



*LEFT: The lunch room at time of writing. It's still missing doors and window shutters but they are simply waiting for some of the interior detailing to be installed first as the window shutters, to be propped in an open position, could be damaged during detailing.*

*The rain guttering is in place as are the first sections of the downspouts. I'll probably fasten a section of downspout to the wall above the end window, leaving a gap between it and the section attached to the roof, as if it had become disconnected.*

# Moreton Mill's Maroochy River Depot

## Part 3

by Lynn Zelmer

*This article continues the development of my photorealistic card models inspired by Moreton Mill's River Depot near one of the Maroochy River lift bridges. It also introduces an On30 module system capable of being transported as airline checked baggage.*

My last article (Narrow Gauge Downunder issue 54) described how I built two versions of the River Depot's lunch (smoko) room. The first styrene model had some major problems in my view, so I rebuilt it as a photorealistic card model, albeit set on the ground rather than raised on stumps, and with vertical corrugated iron sheathing rather than horizontal. That article also described my work on the sand dryer in the adjoining shed. My first challenge this issue was to design and build a shed that fit with the modified lunch room.

### Sand Dryer Shed

The depot's 'timber and tin' shed for the sand dryer is essentially two walls and a roof, with the lunch room forming much of the third wall. As with many such older structures (i.e. built before the cyclone standards introduced in the 1980s), it would not meet current building codes and might not survive a strong wind.

From a modelling point-of-view, I approached the dryer shed as essentially a small timber post and iron building, albeit framed with dimension lumber. I intended displaying the depot as a small diorama, so reduced the length of the shed somewhat to reduce the overall size of the complex. The lack of detailed dimensions and photographs of the shed, as well as the height limitation resulting from the lunch room not being on stumps, required creative imagination, but I think the result is typical of Queensland cane railway practice.

I considered using real timber for the posts but decided that my normal matchstick posts would be oversize and stuck with posts fabricated from multilayer card. I also decided against trying to model the screw jack holding up the centre of the roof due to the reduced the span of the open side. I also considered building the structure with individual CI sheets fixed to a post and board assembly but decided that structural integrity was more important.

Normally I go through several iterations of a model to ensure that it can be built from the resulting kit, but in this case I (perhaps foolishly) worked on a single build in order to meet the NGDU schedule.

*BELOW: Rear view of drying shed and lunch room. While too dark for details within the shed, this recently received view provided information for including the short wall near the lunchroom door and deciding on framing for the flat roof. Carl Millington photographer.*



The shed is 'scratchbuilt' entirely with photorealistic texture components from my computer-based parts box. Some of the textures came from my own photos, other were likely adapted from Clever Models llc or CG Textures, but almost nothing was created specifically for this model.

Working to a single build didn't mean that changes weren't made as the model progressed. I was especially thankful that I had a good stock of my dimension lumber to apply to the partially finished model when I needed to reduce the height of the wall and relocate the timber framing required (on a real structure) for attaching the CI sheets. I also had to add the short wall extension near the lunch room's back door when a late arriving photograph gave me a better idea of the shed's rear side. The kit files were modified prior to packaging for downloading to reflect changes made during construction.

Once the main shed walls were essentially complete as an 'L' shaped assembly I needed a base for final assembly. While I might sometimes wish my modelling had gone in a different direction, the reality is that my home layout remains largely uncompleted. Instead I have a variety of dioramas and mini-modules (and have disposed of even more) for displaying my models at home, clinics, conventions and exhibitions. Thus it's no surprise that I decided on a transportable base (see following section), rather than a layout location.

BELOW: There weren't any photos of Moreton Mill's River Depot from this end but some scrawled graffiti would have been a logical result of the frequent vandalism of the facility. The seemingly skewed end wall and apparent sloping roof is a partly a result of poor modeling and partly of camera angle.



ABOVE: The completed texture for the shed walls, laid out to fold the interior and exterior together along the ground line to ensure front-to-back alignment when gluing. A small gap must be cut between the interior double posts (two views of the corner post, will be hidden by the 3D post when folded) before gluing for a 90° corner. The outside texture must be trimmed after gluing to make a neatly finished top.

BELOW: Under roof framing: the horizontal 'rafters' support the CI roofing material, the non-prototypical crossbeams have been added to minimise warping, and the short vertical lengths of 'timber' help hold the roof in place (cannot be seen under normal circumstances but provide a gentle 'force fit' inside the side walls).



RIGHT: Front view of the complex inspired by Moreton Mill's River Depot. Both roofs are removable, the flat roof over the drying shed being held in a gentle 'force fit' by the four 'timber' studs visible in the under roof view. A small amount of green ground cover and 'grass' tufts have been added to help blend the printed grass texture into the scenery.



BELOW: The rear of the complex shows the prominent sand dryer. The 'eskie' is a PrintMini card model, the petrol tank comes from a Clever Models kit.



## Developing a [semi-disposable] On30 modular system

One of my ongoing challenges is the need to transport the models, dioramas, modules or layouts being used for clinics or exhibition. I live in a regional city more than 600km from the closest convention or exhibition venue. I dislike traveling long distances by road or driving in and around large cities. As a result I normally travel by air or rail, with their limitations on in-cabin/carriage and checked luggage.

Rail travel in Queensland used to be much more accommodating than by air, but both now have very similar luggage restrictions. Anything fragile should be hand carried, perhaps in transparent packaging for easier security checks. Extra checked luggage may be possible, but is usually very expensive.

I've used a 'pack and send' agency to ship models to and from several events, but the local franchise went out of business, and capital city franchise outlets have limited hours of access and require local transport to event/hotel and back. That wasn't too bad with a maxi-taxi with a CBD venue but meant expensive transfers to far suburbs and generally required staying an extra day on each side of the event for collection and return shipping. Couriers are another possibility but are also expensive, usually require someone to take delivery on arrival at the venue and, in my experience, don't like holding shipments for specific delivery times.

I'm not the only modeler with a similar problem and recently three of us have been discussing standards for small single track On30 dioramas capable of being carried by public transport. Taking inspiration from the common module groups, we hoped to develop a modular standard that would allow our dioramas to create a functional tabletop exhibition layout.

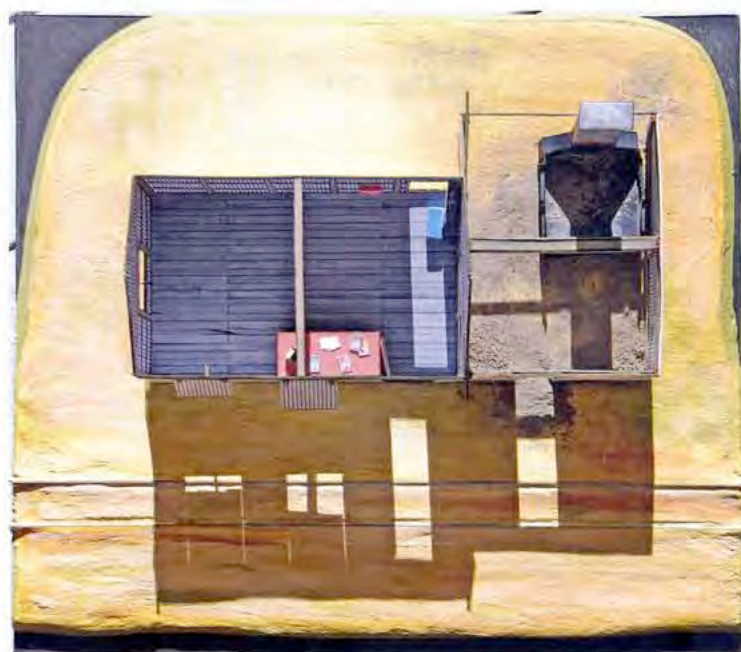
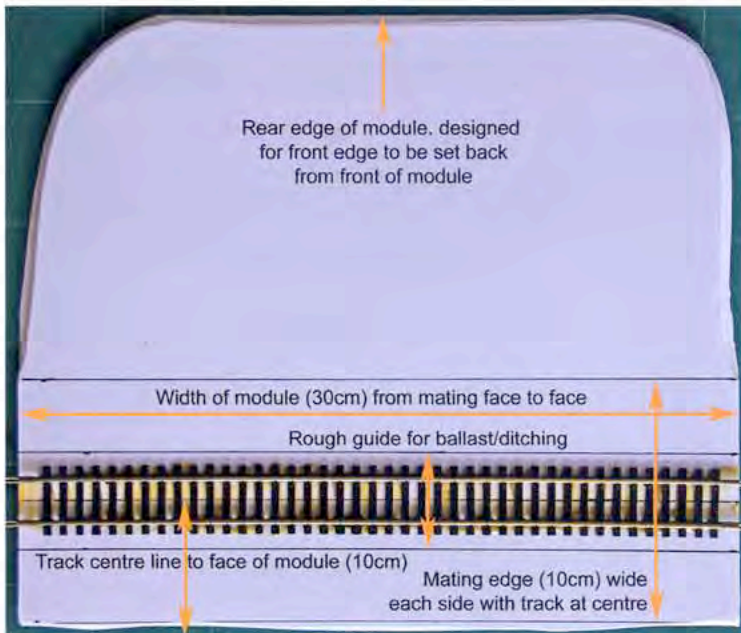
Simple construction would mean that even a novice modeller could build a compatible diorama to explore On30 and participate at an exhibition without the expense of acquiring a locomotive, etc. A small construction cost (both effort and financial) should also encourage disposal of the module as skills improve or interests change.

We threw around many ideas, ranging from A4/A3 to the familiar 4' length, but somewhat grudgingly compromised on a length of 60cm, with the agreement that modules could be 15, 30 or 45cm (or even longer), provided that combined they made a multiple of 60cm. In its most basic form the track centre line should be 10cm from the face of a module (back or front). A minimum of four 75 x 75cm corner modules would be required for a minimalist round and round layout using 24" radius to take any cane loco or wagon (one of my colleagues is thinking modern diesels).

*TOP: This white foamcore scenery layer will be flush with the 30 x 30cm module back, creating a sculpted setback from the module front. The 10cm mating face has been left square on both sides. The tapered foamcore edges have been sealed with white glue in preparation for adding the scenery and the track has been glued in place with contact cement. All four track ends currently have rail joiners, essential for post-scenery cleanup as the HO sleepers will be covered to represent semi-buried track.*

*MIDDLE: Plaster work and painting completed, scenery/track base attached to the 30cm square module base, and unfinished River Depot structure components loosely set to indicate approximate location. A start has been made on the lunch room's interior fittings (desk, clock, 'eskie', etc.) but much more is required, the plaster will need under-floor leveling before permanently installing the structures, and the scenery obviously needs detailing. An interpretive note will be added on the 'stage' at the front of the module.*

*RIGHT: Scenery stage 3: both structures and sand dryer installed. The dark gray is a mocha coloured fine grout which proved to be too dark for use here and will mostly be covered with a 'sandalwood' grout. The wall extension has been added along with (non-prototypical) cross bracing to minimise wall warping. Unfortunately an angled wall (I wasn't watching closely enough when gluing the wall in place) and the resulting poorly set post at the top right corner means that wall end is skewed.*



These modules don't include scaffolding or legs as it's anticipated they will be displayed on standard height tables supplied by the exhibition organisers. However some form of leveling is required due to module and table variations.

At time of writing I've built two trial modules using foamcore board to test the general design. Two thicknesses of 5mm foamcore, glued together with white carpenter's glue, appear to be rigid enough over the 30cm width. I've added lengths of 12 x 40mm fingerjoint pine along the 'long' dimension edges of the module to lift the foamcore off the table, give additional rigidity along the length of the module, and create a conduit underneath the module for wiring, etc. I've used 6 x 16 x 1.0 nut and bolt sets at each corner, with the nut force fit into a 3/8" hole to be flush with the bottom of the module, to serve as leveling feet.

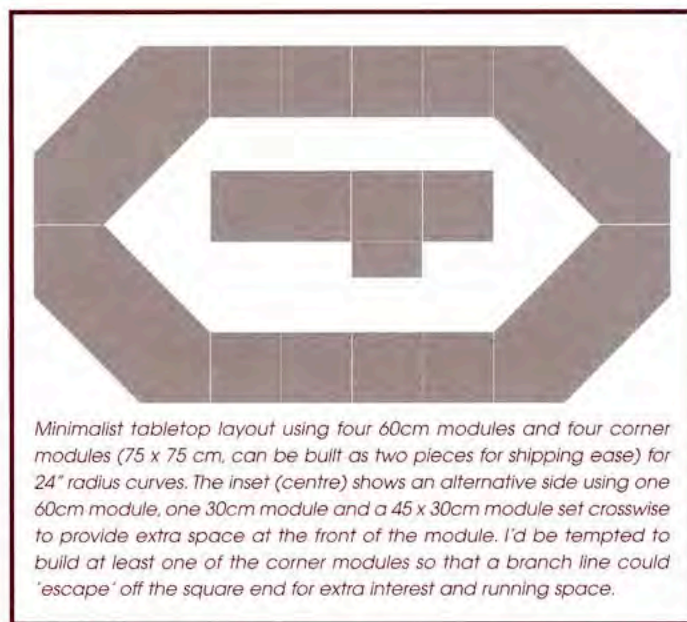
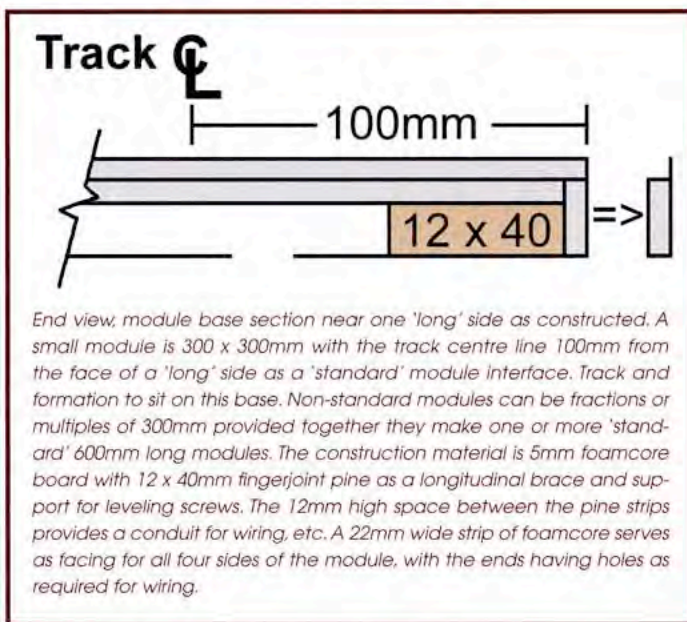
My colleagues argued for the use of one or another of the newer interlocking track systems (Kato Unitrack or Bachmann E-Z track), using at least a short length at each interface to align and hold the modules together similar to T-Trak practice. We've talked DC versus DCC but have somewhat agreed that battery-powered radio control might be preferable, especially as it would eliminate the 'test and tag' requirement for electrical components at exhibition venues.

I haven't gone that far with the first module, partly for expediency (I didn't really want to order just one or two lengths of track, cut them into shorter lengths for module joiners, and then figure out how to interface them with more 'normal' track), and partly because the track needed to sit at ground level for the outstation depot I'm modeling. Instead I've sited my track and models on another layer of foamcore and will rely on elastic bands or twist ties around adjacent leveling bolts to hold the modules together.

I've used black facing to surround the base of the module bases with the intention of setting some of them up as mini-scenes that just happen to have a railway track running through them. The black base is similar to the dark surrounds in a theatre and will allow me to highlight some of my card structures with freeform scenery and other theatrical techniques to imply a setting, rather than full scenery. Black sections between individual scenes might also remove the need for matching scenery or potentially space-wasting scenic transitions.

While the use of foamcore facing to surround the base seemed like a good idea, the implementation was more problematic. Trimming the foamcore back to fit the top sheet (essentially a rabbet joint) was fiddly/time consuming and a smooth join at all intersections depended upon gluing card to foam or foam to foam. The finished base was then sealed with a clear spray to reduce the risk of damage from humidity and to assist with future cleaning.

For future projects I'll likely omit the rabbet joints, making the underframe layer(s) the same size as the top sheet and face the edges with a strip of smooth matte card glued in place. There would still be some card to foam joins but overall the finish should be quicker and easier. As described below the scenery and track formation have been combined into a single layer for this module. Other terrains might require a separate track layer, raising the track 5mm or so higher, with a related need for greater adjustment on the corner leveling screws. A wider facing strip could also be used to cover the edge of the such scenery and track layers as appropriate.



BELOW: Underside of module at interface end, showing fingerjoint pine braces, leveling screws and wrap around facing.



## Card Modelling Challenges!

Constructing last issue's lunch room required exploring new ways (for me) of roof construction to create a removable roof using two-sided truss assemblies with a ridge board. I discovered that one side almost always looked better than the other due to misalignment, resulting from folding the printed card over for gluing into a two-sided assembly. Some of the misalignment can be minimised. For example, the full set of trusses for the lunch room roof were aligned in the resulting kit for a single fold, rather than folding each individually, and the interior and exterior walls fold together along the base, rather than end to end. However that didn't solve the problem of the long lengths of timber needed to support the roof on this model.

One of the constraints of card modelling is that it's difficult to get a straight board by pre-cutting the two sides of an individual board, folding them over and gluing. Almost invariably the result will be badly warped. It's not even possible to reliably fold a board width texture along its length as uneven scoring at the fold line often results in a variable width and/or warped board.

My solution was to work with a larger sheet of printed texture, with half the sheet containing timber texture and cut lines, and the other half a modified texture with cut lines removed (see timber image below). Once folded over and glued back-to-back, the exposed edge can be coloured, a board cut free and its other edge coloured. Continuing the process results in a stock of dimension boards for the modelling task. Avoid cutting too many boards in advance, however, as they will still warp over time.



Obviously the card's weight determines the actual thickness of the assembly but I've used two layers of 210-250gsm card to represent both 1" and 2" thick double-sided boards. For heavier (thicker) boards I might fold the texture sheet around a half sheet of card to create a sandwich of the required thickness.

Scale thickness is a problem in many applications — the need to balance strength and appearance. I normally use two thicknesses of the same 210-250gsm card, or one thickness sandwiched between sheets of photo grade inkjet paper, to represent corrugated iron (CI) sheeting. I've experimented with two thicknesses of photo grade inkjet paper and even a single thickness of card printed on both sides to represent individual CI sheets where the extra thickness would be too obvious AND strength was not critical. A two-layer inkjet paper assembly works better than a single thickness of card, but a sandwich of photo grade textures and a core of card is often more practical.

This model has given me several new card modeling techniques but its greatest lessons were a reminder of the basics of any scratchbuilding:

- You can never have enough photos, dimensions and related information;
- Don't rely on a single build to get an acceptable finished model — mockups and trial builds help iron out the construction bugs;
- A well-stocked parts box, whether containing a conventional selection of scale timber, styrene shapes and commercial windows and doors, or computer files with a selection of textures and/or components developed for other card kits, makes building unique models much simpler. As a related aside, Clever Models has indicated that where possible its future card kits will likely be designed so that commercial windows and doors (Tichy and Grandt Line) can be substituted for (the more realistic) card components.

## Scenery and Setting the Structures in Place

Because the first module is the setting for my River Depot structures I decided to bury regular HO track in the scenery, saving myself the task of hand laying sleepers and rail, before burying them to create a similar out-depot scene. In other words, no ballast or ditching, etc., just semi-buried track that tractors and other agricultural equipment can run over without damage to the track or equipment.

However, since I'll likely be joining the module to other modules with defined formations I used a third layer of foamcore as my scenery base. The preferred track centre is 10cm from the front face of the module but nothing says that the scenery needs to also go to the front edge. I've maintained a 10cm wide face on each end for the track interface but have cut back the front quite severely and rounded off the sides and back to help the scenery 'float' on the black base.

Except at the interface the scenery layer edges have been cut more or less at a taper, with the exposed foam surface sealed with white glue in preparation for painting. The track was glued in place with a water clean-up contact cement compatible with the foam. I didn't have any plaster impregnated cloth available so I glued down a layer of disposable cloth wipes, using contact cement along the track and white glue elsewhere. This was followed by a dusting of Plaster of Paris dampened with a spray of water and left overnight to dry.

The next, thicker, layer of plaster, was painted with artist's water colours (mostly Moss Green and Yellow Ochre) to finish the minimal scenery base. Hopefully the glue, open weave cloth, and plaster combination will keep the scenery securely attached to the foamcore base. Once the scenery layer had dried it was glued to the 30cm module and left to dry under weights.

Structures, trees and other detail elements have been removable on my previous dioramas and layout modules, although building stumps, etc., were fixed as necessary. For this module I decided to permanently install the Depot structures. I'd given up on my home layout as the ultimately location of such structures and, even more important, the drying shed required permanent installation to minimise warping of the walls.

My initial plan was for the shed roof to be fixed to the walls, thus its assembly required the lunch room and shed walls to be fixed to the scenery base and interior detailing completed. Knowing that other modellers might make different decisions, or use the shed components for a different purpose, I developed the CI roof textures to cover the full roof. This required some care locating a hole for the dryer chimney but provides maximum modeling flexibility.

My sand dryer was built as a finished model and had a rain cap slightly larger than the chimney, so the hole had to be large enough for it to slide into place. However once its location was fixed I could locate the roof timbers. Turned over, the underside roof texture print provided a platform for attaching the 'rafter' timbers, while their supporting 'beams' were attached to the posts and the lunch room.

The lunch room was fitted first, then the two walls of the drying shed. About this time I discovered the need for the wall extension mentioned above and installed it using photo grade textures around a card core (I had extra photo grade components and didn't want to print another full card). Non-

prototypical cross bracing was then installed at the top of the posts to ensure the walls remained upright, although one post wasn't absolutely vertical so one wall already has a significant lean.

The sand dryer was then installed, followed by another coat of transparent matte sealer and scattered sand in the shed. Finally a small amount of ground cover was applied, a combination of coloured grout (partly to mute the yellow ochre colour) and more conventional scenery materials. Additional ground cover will be added when other exterior details, including a water tank, have been completed.

Both roofs are still removable so detailing can continue inside as and when I complete the furnishings. Although the complex was never wired for electricity, I could also add lighting to the lunch room at some time in the future if desired by running fine wires through a pre-drilled hole behind the back door.

The structure is not Moreton Mill's River Depot, however I think that it has the essence of that complex and is typical of cane railway practice.

## Future Developments

I've currently got the 30cm River Depot module complete enough for local exhibition as part of my 'Getting Started in On30' presentations, and a 45cm base is ready for track formation and scenery. I have plans for a 15cm module consisting of a simple bridge and stream bed, and will build another 30cm module to make two 60 mm lengths. Given where I live it's unlikely local modelers will build any compatible modules so I'll eventually build end modules to form a continuous running loop. However, I may opt for a much smaller turning radius, similar to the 8.5" radius used on my previous Capricorn Sugar Rail Museum layout, even though it will restrict me to small locomotives.

As well, I need to build carrying cases for the modules, perhaps also using foamcore board. The 30cm module will fit carry-on requirements, larger modules will have to go as checked luggage, therefore requiring a more substantial carry case.

## Acknowledgments and References

Timber and metal photorealistic textures have been adapted from © Clever Models llc ([www.clevermodels.net/](http://www.clevermodels.net/)), CG Textures ([www.cgtextures.com/](http://www.cgtextures.com/)) and the author's photos. Small Stuff's PrintMini models such as the 'eskie' are available from [www.printmini.com](http://www.printmini.com).

T-Trak Australia Guidelines: <http://t-trak.nscale.org.au/guidelines/>; T-Trak USA Standards: <http://www.t-trak.org/T-TRAKdata,1.9.pdf/>.

Queensland Government, Department of Environment and Heritage Protection: Tramway Lift Bridge over Maroochy River: <https://heritage-register.ehp.qld.gov.au/placeDetail.html?siteid=19650>.

Unless otherwise credited, photographs were taken by Lynn Zelmer. Additional photos and other resources, including free downloadable O scale kits for these models, can be found on the CaneSIG ([www.zelmeroz.com/canesig/](http://www.zelmeroz.com/canesig/)) and Modelling the Railways of Queensland Convention (QldRailHeritage.com/mrqc) web sites.

## Postscript: Historical Notes

Nambour area historian Clive Plater has provided the following information on the original River Depot.

"Just picked up the April edition of *Narrow Gauge Down Under* as I noticed the bit about Moreton Mill. From reading the story I wasn't sure if you knew that the River Depot was on the northern side of the river up until 1975. It was a 'real depot' consisting of substantial two story barracks (moved to Eumundi Historical Society 1979) with attached dining room/kitchen, sand drying shed and coal stage. It also had a 'Y' which was effectively the only facility on the mill's tramline system where a loco could be turned. Steam loco 'Valdora' and various oil locos operated from here prior to World War II, then the Malcolm Moores and finally the two 8 ton Baldwins.

"On the southern bank there was a rough 'slip way' where punts could be winched out of the water for repairs and painting, from memory, on the downstream side of the bridge. One punt was maintained and kept here in case it was needed for bridge work. Not sure when the punt was finally scrapped but I would guess around the mid-1970s. Bridge girders and piles were often stored and prepared on the southern bank about where the buildings depicted in your story were erected."

Moreton Mill closed in late 2003 and most traces of the River Depot structures have now been removed. The lift bridge still stands, and has received State Heritage listing, but is in very poor physical shape due to lack of maintenance.

*BELOW: The completed 30 x 30cm On30 module with the River Depot-inspired lunch room cum out-depot office, sand drying shed and sand dryer. The 4wDM loco is scratchbuilt on a Boulder Valley chassis with a Bachmann mechanism, the pewter 4t Moreton Mill style cane bin is a RJ Models (now JG Models) kit.*

