

# ELECTRONIC BLUEPRINT UPDATE

**Architects, Engineers, Builders, Suppliers, Specifiers, Certifiers**

Dear Building Professional

Thank you for receiving this quarterly technical update, intended to inform building professionals of changes to building regulations, provide comprehensive specifications and drawings, and circulate a range of building product details that meet particular requirements. Detailed editable specifications are provided free-of-charge from our website, [www.electronicblueprint.com.au](http://www.electronicblueprint.com.au). Building product suppliers can also enter their own product details and contact information, for display free-of-charge via our "wiki" facility.

Sincerely,  
Rod Johnston – Principal Author  
March 2010

We are conscious that professionals receive large quantities of technical information, and we appreciate your receiving these technical updates (four per year). To cease receiving these technical updates please email [rod@electronicblueprint.com.au](mailto:rod@electronicblueprint.com.au). Email addresses are never sold or used other than circulating these updates.

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# Building Product Manufacturers, Suppliers, Architects & Specifiers BCA 2010

Editorial by Rod Johnston

The 2010 version of the Building Code of Australia is now available and incorporates many significant changes, including an increase in the stringency of the energy efficiency measures. One consequence is that it is increasingly difficult design economic energy-efficient buildings using the DTS (deemed-to-satisfy) details provided within the BCA itself; and designers will find it more expedient to use computer simulation methods (e.g. AccuRATE and the like). This is not necessarily a bad thing – Computer simulation provides the designer with far greater opportunity to balance and optimise building orientation, thermal resistance, thermal mass, solar absorptance and ventilation. For full details of the changes, and to purchase copies of the BCA, refer to the Australian Building Codes Board website [www.abcb.gov.au](http://www.abcb.gov.au).

Rod Johnston (B Tech, M Eng Sc, MICD, CP Eng, NPER, MIE Aust, RPEQ) is a professional engineer providing technical support for building products; and is director of Quasar Management Services Pty Ltd, Electronic Blueprint and Building Product Certification Pty Ltd.

## Why Do Building Product Suppliers Need CodeMark?

1. All building products must comply with the BCA (Building Code of Australia).
2. The first path to BCA compliance is via a relevant “deemed-to-satisfy” Acceptable Construction Practice or Acceptable Construction Manual, typically an Australian Standard.
3. If a DTS solution is not available, a second path to BCA compliance is via an “alternative solution”. This may be an “engineer designed” solution for each project, or may be via CodeMark.
4. Each state has regulations, ensuring that a CodeMark building solution cannot be rejected. For their own protection, local authorities are now insisting on either strict compliance with a relevant Australian Standard, or on CodeMark Certification.
5. The two principal requirements of CodeMark third-party certification are:
  - The manufacturer must have a properly functioning Management System (similar to ISO 9001), capable of delivering consistent product to predetermined specifications.
  - The nominated products must satisfy the nominated BCA clauses.

## Why Must Ecolabels Be Benchmarked?

“.....there is a real danger that ecolabels may fail to provide enough precise data on the in-service performance for each product, under a range of applications and climates..... this could lead to poor decision-making and the selection of products, which appear to be environmentally friendly, but are, in fact, inappropriate for the actual application. ....“

“Benchmarking and Specification of Sustainable Building Products”,  
Johnston, R, Gogstad, P, & Woolcock, J, UAE, 2009

1. Environmental benchmarking is done by predicting the life-cycle environmental impact of a benchmark form of construction, predicting the life-cycle environmental impact of the proposed alternative, and comparing the two. A suitable benchmark is “..... the most-common form of construction satisfying the building regulations”.
2. Environmental benchmarking enables designers and specifiers to determine, at the pre-design stage, the scale of the environmental effects of substituting one product for another.
3. Environmental benchmarking utilises full Life Cycle Analysis, including both embodied impacts (raw material, transport, manufacture, construction etc.) and in-service impacts.

# Engineers & Architects – Design Considerations

## Fibre to the Node

### Some Implications for the Residential Construction Industry

Editorial by Peter Hitchiner

The Australian Government has announced the implementation of a program to deliver fibre to the premises for broadband telecommunications services to 90% of Australians over the next 8 years. The program will deliver at least 100 million bits per second to every premise where required. In addition 10% of Australians will be serviced by wireless or satellite where fibre cannot be provided cost effectively: those premises will be delivered 12 million bits per second. This is a major nation building project and cost \$43 Billion by the government's estimate.

Existing premises are expected to be connected by a replacement to existing copper cables. The overall plan and extent of the rollout of replacement hinges to a considerable extent on the outcome of current negotiations between Telstra and the government. Implementation and utilisation will also depend on the costs and how they will be met including user charges. Some users may prefer to use mobile/wireless connections and not used fixed connections if the charges are not considered reasonable.

Premises in new estate developments (greenfield estates) meeting conditions (yet to be finalised) will be required to install fibre optic cable (fibre to the premises, FTTP) for all developments from 1 July 2010. This requirement will be enshrined in legislation. The construction industry will need to develop adequate pools of skills and practices in order to address this change. Many new residential developments are already including fibre, and typically with copper as well. Apart from the skills required there is likely to be a small premium, typically met by developers. This should not be a barrier: according to the Fibre to the Home Council, developers have estimated that the added value to a property with broadband fibre connected is as much as \$US5,000. Even if this figure is inflated, the value would cover incremental costs of providing fibre and appropriate in premises cabling even if only \$2,000 value is added. Provision for connection to carrier core networks at a carrier point of interconnection (PoI) by shared backhaul systems is included in the cost to be recovered. Other initiatives may need to be considered if access to backhaul is not readily available. In many ways the provision of broadband fibre is much the same as provision of electricity, water or gas services and by sharing of trenches incremental cost can be minimised.

Developers should consider engaging a carrier or service provider to work with them in developing fibre infrastructure with a view to ensuring that the ongoing responsibility for maintenance and operation of the fibre infrastructure is determined at the outset. Care needs to be taken to manage risks associated with on-going viability of such providers and to clearly define ownership of the infrastructure.

The NBN initiative is in the early stages of development and questions remain particularly in relation to existing premises and installation of fibre. Construction of fibre networks to existing premises will deliver substantial opportunities for the construction industry but they may take a while to be fully realised. Meanwhile the opportunity to develop installation skills in greenfield estates is an opportunity to be seized.

Peter Hitchiner (BSc, FIEAust, CPEng) is an independent telecommunications consultant, and immediate past president of the Sydney Division of Engineers Australia.  
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## Specifiers, Builders, Architects & Engineers – Specifications

### Structural Steelwork

The following template specification is reproduced from the Electronic Blueprint website, and is available to building professionals to be downloaded, edited and used for contract documentation, free-of-charge. It is important that the designer edit this template (and others on the website) to suit the requirements of the particular application. [www.electronicblueprint.com.au](http://www.electronicblueprint.com.au)

#### Structural Steelwork

##### Scope

This section covers structural steelwork and cold-rolled steel purlins and girts. For light gauge steel framing for domestic houses, refer to Specification for Wall, Roof & Floor Framing.

##### Building Regulations and Standards

All materials and construction shall comply with the most recent version of:

- the relevant parts of the Building Regulations;
- the Standards referred to therein;
- other Standards nominated in this specification; and
- other relevant Regulations.

##### Relevant Standards

AS 4100 Steel structures

AS/NZS 4600 Cold-formed steel structures

AS 2327.1 Composite structures – Simply supported beams

AS 1163 Structural steel hollow sections

AS/NZS 1594 Hot-rolled steel flat products

AS/NZS 3678 Structural steel - Hot-rolled plates, floorplates and slabs

AS/NZS 3679.1 Structural steel Part 1: Hot-rolled bars and sections

AS/NZS 3679.2 Structural steel Part 2: Welded I sections

AS 1110 ISO metric hexagon precision bolts and screws

AS 1111 ISO metric hexagon commercial bolts and screws

AS 1112 ISO metric hexagon nuts, including thin nuts and washers for structural engineering

AS/NZS 1252 High strength steel bolts with associated nuts and washers for structural engineering

AS/NZS 1559 Hot-dip galvanised steel bolts with associated nuts and washers for tower construction

AS/NZS 1554 Structural steel welding

AS 1275 Metric screw threads for fasteners

AS 1237.1 Plain washers for metric bolts, screws and nuts for general purposes

AS/NZS 4291.1 Mechanical properties of fasteners, made of carbon steel and alloy steel, Part 1: bolts, screws, studs

AS/NZS 4291.2 Mechanical properties of fasteners, Part 2: Nuts with specified proof load values –coarse thread

AS 1397 Steel sheet and strip

AS 1627 Metal finishing - preparation and pre-treatment of surfaces

AS/NZS 4680 Hot-dip galvanised (zinc) coatings on fabricated ferrous articles

AS/NZS 2312 Guide to the protection of structural steel against exterior atmospheric corrosion by use of protective coatings

AS 1627.4 Metal finishing - Abrasive blast cleaning

AS 1627.5 Metal finishing - Pickling, descaling and oxide removal

AS/NZS 3750.1 Paints for steel structures - Part 1 Epoxy mastic (two-pack)

AS/NZS 3750.13 Paints for steel structures - Part 13 Epoxy primer (two-pack)

AS/NZS 3750.14 Paints for steel structures - Part 14 High-build epoxy (two-pack)

AS/NZS 3750.15 Paints for steel structures - Part 15 Inorganic zinc silicate paint

## Fabrication and Erection

- All fabrication and erection of structural steelwork shall comply with AS 4100 and the standards referred to therein.
- Welding shall be SP and comply with AS/NZS 1554. All welds shall be 6 mm continuous fillet unless noted otherwise. Full penetration butt welds are required on all plates over 12 mm in thickness.
- All bolts and nuts, except high strength friction grip bolts, shall be snug tightened as per AS/NZS 1252.
- High strength friction grip bolts shall be tensioned to the recommended values as per AS/NZS 1252.
- All seal plates on hollow sections shall be provided with a breather hole to permit hot dip galvanising.
- All purlins, girts, fascias, associated bridging and accessories shall be installed in accordance with the manufacturer's recommendations.

## Mortar Packs

Mortar packs under base plates shall be 1 part portland cement to 2 parts sand.

## Surface Preparation and Treatment

On completion of all fabrication, all dags and weld spatter shall be removed from the surfaces exposed in the completed structure. Structural steelwork shall be prepared, painted or galvanized in accordance with the Drawings and, where appropriate, the following schedule.

Painting Systems For Steel				
Treatment	Internal		External	
Not painted after erection	MP 1-A	Table 7.4	LP 1-A	Table 7.5
Painted after erection	SP 1-A	Table 7.3	SP 1-A	Table 7.3

- Surface preparation shall comply with AS 1627.4 and AS 1627.5.
- Painting shall comply with AS/NZS 2312.
- Hot-dip galvanising shall comply with AS 4680 to not less than 300 g/m<sup>2</sup>.
- Shop painting shall comply with AS/NZS 2312 and the following table.

## Fire Resistance

When Fire Resistance Levels for fire separation or structural performance under fire load are specified, the components shall be designed, tested, constructed and protected in accordance with the appropriate parts of Building Regulations and relevant Standards (BCA Volume 1 Part C & Specification A2.4, or BCA Volume 2 Part 3.7, and AS 1530.4, AS 4100).

When materials used in the construction are required to achieve specified fire hazard properties, they shall comply with the appropriate parts of Building Regulations and relevant Standards (BCA Volume 1 Section C, or BCA Volume 2 Part 3.7, and AS/NZS 1530.3).

### Structural Steelwork

Structural steelwork shall comply with the Drawings, Building Regulations and relevant Standards (AS 4100).

### Structural Steel Plates and Sections

Structural steel plates and sections shall comply with the Drawings, Building Regulations and relevant Standards (AS/NZS 3679.1, AS/NZS 3679.2, AS 3678, AS 1163, AS139). Unless stated otherwise, minimum grade of steel shall be as follows:

Sections	Minimum Grade MPa (N/mm <sup>2</sup> )
Universal beams and columns, parallel flange channels, angles to AS/NZS 3679.1	300
Welded sections to AS/NZS 3679.2	300
Hot rolled plates, floor plates and slabs to AS/NZS 3678	250
Hollow sections to AS 1163	C350
Cold formed purlins and girts to AS1397	G450, Z350

### Cold-Rolled Purlins, Fascias, Bridging and Accessories

Cold-rolled purlins, fascias and bridging comply with the Drawings, Building Regulations and relevant Standards (AS/NZS 4600), and the following:

- Sections shall be manufactured from galvanised steel complying with AS 1397, with a zinc coating not less than 350 g/m<sup>2</sup>.
- Bridging shall consist of prefabricated components compatible with the purlin system.

### Bolts and Nuts

Bolts and nuts shall comply with the Drawings, Building Regulations and relevant Standards, and the following: Tightening to the following methods:

- 4.6/S commercial bolts, Grade 4.6 complying with AS/NZS 1111 - snug tightened
- 8.8/S high strength structural bolts, Grade 8.8 complying with AS/NZS 1252 - snug tightened
- 8.8/TB high strength structural bolts, Grade 8.8 complying with AS/NZS 1252 - bearing joint fully tensioned as per AS 4100
- 8.8/TF high strength structural bolts, Grade 8.8 complying with AS/NZS 1252 - friction joint fully tensioned as per AS 4100 (Faying surfaces shall be uncoated.)

Bolts shall be as noted on the drawings, but not less than:

- M20 8.8/S.
- Two bolts per joint
- Bolts and washers shall be treated against corrosion, not less than galvanised.
- /TB and /TF bolt categories shall be installed by the direct-tension indicator method or part-turn method

### Inspections and Tests

The following fabrication and erection inspections shall be performed.

### Structural Steelwork Fabrication

Item or Product	Inspection Required	Accept Criteria	Hold Witness
Drawings & Specifications	Inspect controlled documents	Controlled copy of latest issue on site	Hold
Steel section	Check marked length before cutting	+,- 2 mm *	Hold
Holes in steel sections	Check marking of position & diameter	+,- 2 mm * Holes to be 2 mm larger than nominal bolt size.	Hold
Plates	Check marking of dimensions	+,- 2 mm *	Hold
Holes, cut-outs in plates	Check marking of position & diameter	+,- 2 mm *	Hold
Fabricate all items	Check length, check orientation	+,- 2 mm *	Hold
Welding	Visual	Continuous or as specified	Hold
Surface treatment	Visual	As specified, no unpainted areas	Hold
Identification marks	Visual	Clear & as specified	Hold
HD Bolt kits	Visual	Bolts, nuts, washers included	Witness
Touch up painting	Visual	No chipped or damaged paint	Witness
Loading of transport for delivery to site	Count of all items	All items loaded	Hold
Delivery and unloading on site	Count of all items	All items unloaded	Hold

#### Notes

All tolerances shall be in accordance with AS 4100.

Indicates that the general tolerance is +,- 2 mm, although there are some specific tolerances including cross section, compression members, beams and tension members.

## Structural Steelwork Erection

Item or Product	Inspection Required	Accept Criteria	Hold Witness
Drawings & Specifications	Inspect controlled documents	Controlled copy of latest issue on site	Hold
Principal steel sections	Spot check	As specified	Witness
Shop surface treatment	Visual before erection	No major blemishes	Witness
Holding down bolts	Bolt grade Bolt diameter Bolt length  Bolt centres in each group  Bolt group centres of adjacent groups  Accumulated length  Bolt group centres to column centre line	As specified As specified +,- 3 mm  +,- 3 mm  +,- 6 mm  +,- 6 mm/30 m, +,- 25 mm  +,- 6 mm	Hold
Column base position	Spot check	+,- 6 mm	Witness
Column base level	Spot check	+,- 10 mm	Witness
Column base contact	Spot check	Full contact	Witness
Compression member plumb from base position (Up to 60 m high)	Spot check	Height/500, 25 mm	Witness
Compression member plumb from base position (Over 60 m high)	Spot check	25 + (H-60)/3000, 50 mm	Witness
Compression member storey deviation	Spot check	Height/500	Witness
Column splice level	Spot check	+,- 10 mm	Witness
Column splice position	Spot check	See compression member plumb	Witness
Column splice plan position	Spot check	+,- 2 mm	Witness
Beam connections	Spot check	Completed	Witness
Beam sweep	Spot check	Braced length/500	Witness
Beam position at connection	Spot check	+,- 10 mm	Witness
Beam web	Spot check	+,- 3 mm	Witness
Tension member position	Spot check	+,- 3 mm	Witness
Overall building dimensions	Spot check	AS 4100	Witness
Connections	Spot check	As specified	Witness
Touch up surface treatment	Visual	No visible defects or chipping	Witness
Grout packs at supports	Visual	In place. Material complies to AS 3600	Witness
Notes All tolerances shall be as shown, except where overridden by AS 4100.			

## Distance Learning Training Builders, Designers, Principal Certifiers, Architects, Engineers

This two-year structured distance learning program (delivered in 12 modules), has been written and compiled to ensure practical, hands-on and relevant learning outcomes with a focus on:

- Design considerations
- Relevant standards and regulations
- Problems and solutions
- Specifications
- Suitable products
- Site control checklists
- Sustainability

The package consists of comprehensive notes, specifications, details and inspection schedules with full text, voice-over and illustrations on a CD ROM. The trainee may log onto the Electronic Blueprint website for additional information during the training session if preferred. The trainee may communicate with an expert tutor for further information, and must submit an assignment by on completion. This will be assessed by the tutor.

### Summary of Structured Distance Learning Program

Module 1	Site establishment & preliminaries	Module 7	Sustainability (Water Conservation) Drainage & plumbing Roof cladding Roof plumbing
Module 2	Masonry	Module 8	Paving Public kerbs, gutters, footpaths etc
Module 3	Sustainability (Energy Efficiency) Windows, doors & glazing Insulation	Module 9	Sustainability (Air quality & toxicity) Painting & coatings Cleaning
Module 4	Earthworks & site drainage	Module 10	Concrete
Module 5	Retaining walls Fencing Landscaping	Module 11	Loading Standards Structural steelwork Wall, roof & floor framing Carpentry, Joinery, Cladding & Floor Ceiling & wall lining
Module 6	Slip Resistance Floor & wall tiling Resilient floor coverings Carpets & soft furnishings	Module 12	Electrical installation Mechanical ventilation & services Kitchen Vehicular doors Window & door shutters Metalwork & balustrades

For further information, [www.electronicblueprint.com.au](http://www.electronicblueprint.com.au) or [rod@electronicblueprint.com.au](mailto:rod@electronicblueprint.com.au)



## Featured Building Product Elmich Australia Pty Ltd - Versijack

The following technical and promotional material is available from the Electronic Blueprint website, [www.electronicblueprint.com.au](http://www.electronicblueprint.com.au), or may be obtained directly from the featured supplier.

Building Product Suppliers, whose products are included in the technical specifications of the Electronic Blueprint, are:

Elmich Australia	<a href="mailto:david.oliver@elmich.com">david.oliver@elmich.com</a>
Ford Timbers	<a href="mailto:stuartmadill@fordtimbers.com.au">stuartmadill@fordtimbers.com.au</a>
One Stop Building and Hardware	<a href="mailto:gina@osbh.com.au">gina@osbh.com.au</a>
Timbercrete	<a href="mailto:peter@timbercrete.com.au">peter@timbercrete.com.au</a>
Raven Door & Window	<a href="mailto:neil.raven@raven.com.au">neil.raven@raven.com.au</a>
Helifix (Australia)	<a href="mailto:sales@helifix.com.au">sales@helifix.com.au</a>
Origen Australia	<a href="mailto:choward@enduroshield.com">choward@enduroshield.com</a>
Brunswick Sales	<a href="mailto:robertm@brunswicksales.com.au">robertm@brunswicksales.com.au</a>
Matrix Industries Pty Ltd	<a href="mailto:graham@matrixindustries.com.au">graham@matrixindustries.com.au</a>
Smartflo	<a href="mailto:bill.sanderson@smartflo.com.au">bill.sanderson@smartflo.com.au</a>
NRG Greenboard	<a href="mailto:scott@nrggreenboard.com">scott@nrggreenboard.com</a>
Galvanisers Association	<a href="mailto:rosemary@gaa.com.au">rosemary@gaa.com.au</a>
Cultured Stone	<a href="mailto:nick@cultured-stone.com.au">nick@cultured-stone.com.au</a>
Resene	<a href="mailto:jow@resene.com.au">jow@resene.com.au</a>
Nuplex Construction	<a href="mailto:stevent@nuplex.com.au">stevent@nuplex.com.au</a>
Austech t/a Foamular	<a href="mailto:mnagle@austech.com.au">mnagle@austech.com.au</a>
Stramit Building	<a href="mailto:john.mclanders@stramit.com.au">john.mclanders@stramit.com.au</a>
Viridian	<a href="mailto:pcocker@csr.com.au">pcocker@csr.com.au</a>
Duralok	<a href="mailto:paul@duralok.com.au">paul@duralok.com.au</a>
Advanced Concrete	<a href="mailto:hep@ecobrick.com.au">hep@ecobrick.com.au</a>
Cossett Industries	<a href="mailto:Atownsend@cossett.com.au">Atownsend@cossett.com.au</a>
Glassfence.com	<a href="mailto:manfred@glassfence.com.au">manfred@glassfence.com.au</a>
Pasco	<a href="mailto:info@pasco.net.au">info@pasco.net.au</a>
Rynat Industries	<a href="mailto:leonaparamor@rynat.com">leonaparamor@rynat.com</a>
Shamrock Stone Walls	<a href="mailto:colm@shamrockstonewalls.com">colm@shamrockstonewalls.com</a>
Slop mop Recycling	<a href="mailto:spraak@ozemail.com.au">spraak@ozemail.com.au</a>
Style FLooring	<a href="mailto:ian@styleflooring.com.au">ian@styleflooring.com.au</a>
Universal Anodisers	<a href="mailto:anodise@bigpond.com">anodise@bigpond.com</a>
Skydome Skylight Systems	<a href="mailto:mbonello@skydome.com.au">mbonello@skydome.com.au</a>
Ellem Centravac	<a href="mailto:ellem@netspace.net.au">ellem@netspace.net.au</a>
Alpha Coating Solutions	<a href="mailto:Denis.A@alphacoat.com.au">Denis.A@alphacoat.com.au</a>

**Adjustable, fast-to-install and lightweight paver and decking support**

Elmich Australia Pty Ltd's VersiJack<sup>®</sup> offers cost-effective, free draining and membrane protection options for paving and decking around swimming pools and on roof gardens, balconies and more.

By eliminating the need for sand or screeds when paving and replacing brick piers for decking, VersiJack<sup>®</sup> reduces the weight and installation time for pavers and decks in all types of settings.

"VersiJack<sup>®</sup> is an adaptable product that delivers plenty of advantages," said David Oliver Elmich Managing Director. "VersiJack telescopic or stackable pedestals makes it possible to adjust for height in minute increments up to one metre. Plus its integrated slope compensator also caters for up to 5% falls in the slab."

Unlike brick or metal piers, VersiJack<sup>®</sup> contains a bearer support that allows 50-85mm bearers to be fastened to the unit. With bearers then anchored to the perimeter walls means VersiJack<sup>®</sup> can be positioned on the water proof membrane without causing damage.



VersiJack<sup>®</sup> effectively support decking at a private residence poolside area in the Blue Mountains, NSW. The Bearer Holder caters for 50 - 85mm wide timber bearers (right).



VersiJack<sup>®</sup> can be finely adjusted for both height and slope variations.



VersiJack<sup>®</sup> supports were used in an installation in a mosque in Kuala Lumpur. Each unit supports a load of up to 1.5 tonnes. It also enables easy access to services under the paving.

At a recent upgrade at the University of Adelaide, South Australia, VersiJack<sup>®</sup> was used to support pavers on extensive courtyard and walkway areas.

Any rainwater quickly disperses through the gaps between pavers and is drained away. Eliminating bedding sand substantially reduced the weight bearing load on the building structure and the air gap between the paver and the water proofed slab also helps to create a cooler building and reduces sound transmission to the level below.



VersiJack<sup>®</sup> paver supports positioned on insulation board (above) at the University of Adelaide and part of the completed job (left).



Heavy loads such as pre-cast concrete slabs can be accommodated by VersiJack<sup>®</sup>, shown here under concrete slabs at 'Waterplay' in Brisbane, above and the completed installation at right.

In Brisbane, VersiJack<sup>®</sup> was used to support 200mm concrete slabs, raised 900mm off the base structure at 'Waterplay' fun park (left & below). VersiJack<sup>®</sup> was chosen because it ensured that a perfectly level surface was achieved and it also provided ready access to services beneath.



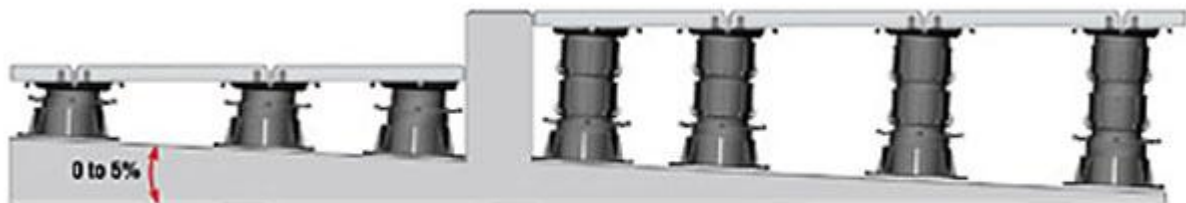


The New South Wharf / Melbourne Convention Centre Precinct (above & left) utilized VersiJack<sup>®</sup> to support large decked areas. Stuart Pope from Aspect Studios, a leading Australian landscape architectural design firm, said " We specified VersiJack<sup>®</sup> because it offered many benefits including the fact that it is manufactured from recycled plastic, thus contributing to the achievement of Green Building rating tool credits".

VersiJack<sup>®</sup> is available in two styles:

- VersiJack<sup>®</sup> LH for low height requirements adjustable in height from 22mm to 75mm using 5mm, 10mm and 20mm extenders
- VersiJack<sup>®</sup> 75 with adjustment from 75mm to 150mm and with extenders (ranging in 75mm to 112mm) may be increased in height to 1.0 metre.

Both units incorporate a slope corrector that compensates for slopes up to 5%.



**Slope Corrector and Step Effect**

**VersiJack<sup>®</sup> offers a number of important benefits:**

- Fast-to-install, cost effective and lightweight facilitating onsite handling.
- Eliminates the use of bedding sand and screeds when paving and replaces brick or metal piers in

decking applications, reducing weight bearing loads on building structures.

- Services are concealed but may be easily accessed if required.
- Water proofing membranes are not penetrated.
- Air ventilation, and heat and noise insulation is facilitated.
- Loads of up to 1.5 tonne per unit are supported.
- Unaffected by mould, algae and soil borne chemicals.
- Promotes rapid drainage, enhancing surface safety
- Can accommodate warped timber and varying paver thicknesses.

Click below to download PDF brochures



VersiJack<sup>®</sup> 75



VersiJack<sup>®</sup> LH

**About Elmich Australia Pty Ltd:** For more than a decade, Elmich has designed and created innovations in landscape engineering products. Working closely with specifiers and landscape engineering specialists, Elmich develops customised solutions for residential, commercial, infrastructural and industrial projects world-wide.

## Partner Housing Assisting Developing Communities in the Asia-Pacific Region

Electronic Blueprint is proud to support the voluntary work of Partner Housing Australasia (Building) Incorporated, a charitable organisation that provides pro-bono architectural, engineering and building services to developing communities throughout the Asia-Pacific region. Previous projects have involved design, documentation, help-desk, construction-auditing, proposal-preparation and construction for other NGOs and Governments; in Australia, India, Sri Lanka, Indonesia, Thailand, Solomon Islands, Kiribati, Timor Leste and other locations.

Client or Partner NGO	Current Projects and Activities
Emergency Architects	Water and sanitation project for Ranongga, Solomon Islands
Divya Shanthi Trust	Structural design of Baby Clinic Lingarajapuram (Bangalore, India)
Republic of Kiribati	Mentoring of Kiribati engineer.
Emergency Architects	Solomon Islands school reconstruction in Gizo - Design calculations and advice provided on roof trusses. Help desk service under way.

If you are an architect, engineer or builder, and you would like to assist our neighbours in less developed countries by providing pro-bono professional assistance; or to make a donation, please email [partnerhousing@electronicblueprint.com.au](mailto:partnerhousing@electronicblueprint.com.au) or check the website [www.phab.org.au](http://www.phab.org.au) .

