



LET'S TALK ABOUT

WATERPROOFING

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PRESIDENT'S ADDRESS



Hello to all AIW Members.

Well there's one way to kick off the year! Not what we bargained for, but it's very important to keep the right attitude.

The AIW will try to keep you up to speed with ongoing updates concerning the Covid-19 implications.

THE HOTLINE NUMBER is:
1800-675-398

There are plenty of emails floating around about the COVID-19. The AIW just wanted to reach out to all members to say, if we all work together (but 1.5m apart) and take the necessary precautions we will get through this.

If you feel sick then don't just shrug it off - get it checked out.

As I get around sites (as least as possible), I am seeing many workers NOT doing the right thing by getting too close and sitting together in site sheds etc. and not using sanitizer!

We must follow the guidelines at a minimum and do a bit more where you can, if you don't the industry will be shut down altogether.

These are simple things to do to prevent spread of this bug. Please, please take precautions. You owe it to yourself and your families.

See what you can do for others in need during this crazy time. Make those calls and video meetings and check up on people.

A good friend of mine said - one of the difficulties will be the dark times ahead when others will need psychological help as well.

Talk is cheap and easy. Call a friend, mate, family member a couple of times a week if you can.

Some help for sole traders without employees you may be eligible for:

The ATO is relieving some of its tax obligations for affected businesses.

For ATO Business Emergency Support Infoline call: **1800-806-218**

PRESIDENT'S ADDRESS

Communities and affected regions and some industries are being offered government assistance of an initial \$1 billion support fund.

Accelerated depreciation deduction arrangements to help business investment (where possible) until June 30 2021 for businesses with a turnover under \$500 million and shall be able to deduct 50% off the cost of an asset (conditions apply).

Instant asset write-off is being lifted from a \$30K threshold to \$150K for assets installed by 30 June 2020.

Expanding income support payments and a time limited Corvid-19 supplement of \$550 per fortnight for existing and new eligible persons.

More on this by visiting the myGov website: <https://my.gov.au/>

Take Care.

Paul Evans
AIW PRESIDENT

Vertical Up - Stands around Decks/Balconies

The height required to prevent water breaching over the termination of the waterproofing around the edge of decks or balconies is often not high enough to stop water entry from wind driven rainwater.

Australian Standard AS4654 – 2012 'Waterproofing membranes systems for exterior use - Above ground level Part 2: Design and installation' has in Table A1 of Appendix A a guide for the height required to prevent breaching with heights of 40 to 180 mm depending on the exposure to wind speeds.

The reason for its inclusion in an Appendix is that it is a guide only rather than a mandatory requirement. The height required really depends on an assessment of the exposure to wind driven rain at a local level.

The exposure to wind could be affected by other buildings around the deck as well as the general wind conditions in the area. There is generally reluctance to have steps at the door threshold onto the deck.

The damage to the carpet behind the doorway onto a deck that was in a high wind exposure location is shown in Figure 1 with the lack of required up-stand below the doorway sill shown in Figure 2.



Figure 1 – Carpet damage behind doorway



Figure 2 – Windowsill located directly onto level of deck

This deck was located the other side of a roadway fronting onto a sea front with the deck facing to the south-west, so it was exposed to major wind driven rain from the west to the south.

The Table in AS 4654 part 2 would require a minimum upstand of 100 mm and not with the sill of the door frame sitting flush with the deck surface.

With this installation there is also an issue with the door frame having the drainage hole in the frame flush with the sill.

Wind would most likely push water flowing down the fixed windowpane back into this drainage hole.

Australian Standard AS2047 – 1999 'Windows in buildings – Selection and installation' gives guidance for the design of windows for various exposure conditions.

With the lack of up-stand for the drainage onto the sill it is highly unlikely that the window installed in this location would pass the design requirement of the Standard.

There is more than just the design of the waterproofing system that has to be considered in preventing water leakage into buildings in a vulnerable exposure condition.

Figure 3 shows another example where the up-stand under the windowsill is less than the 40 mm minimum given in AS 4654.2.



Figure 3 – Low up-stands under window

These up-stands are only about 15 mm in height and even though this deck was in a sheltered position water still entered the dwelling behind the window doorway.

If there is a need to achieve a level floor between the deck and the inside of the building this could be achieved by installing a grate drain across the doorway as shown in Figure 4.

These drains are expensive to install and can be difficult to install on cantilever decks as they require to be recessed into the top of the cantilever at the maximum stress zone of the cantilever.

In these situations it may be worthwhile looking at having a syphon drainage system made to move the water away from these grate drains as these syphon systems suck the water out below atmospheric pressure which results in much lower water levels in the drainage trough so the drainage grate does not need to be as deep.

These drains are expensive to install and can be difficult to install on cantilever decks as they require to be recessed into the top of the cantilever at the maximum stress zone of the cantilever.



Figure 4 – Grate drain installed across a doorway

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With all decks and balconies, it is important that consideration is given to the exposure to wind driven rain is made so an appropriate up-stand can be designed to prevent water entry into the building behind the deck.

AS 4654.2 Table A1 in the appendix of the Standard is a useful guide in determining the required amount of up-stand.

Barry Schafer

Discussion Paper on New Victorian Registration and Licensing of Tradespeople

There is much confusion about the mechanism and requirements of the Victorian Government changes to Register and Licence Trades, including Waterproofing. In Queensland and New South Wales the State Governments have already gone down the path of registering Trades.

The problem of building defects and consumer confidence in the industry still remains. In Victoria the single highest claim payout figure relates to water issues.

The test case for Registration and Licensing of Tradespeople will be the final legislation relating to Carpentry, Stage 2 will involve Waterproofing.

The principles of Registration of subcontractors and Licencing of employees will be worked out in the proposed changes in September 2020

The following are extracts from the DELWP - Consultation Options Paper:

Why is there a new trades registration and licensing scheme?

Current scheme The Victorian Building Authority (the VBA) currently administers a registration regime for building practitioners, including builders, operating in the Victorian building industry.

This registration regime allows the VBA to collect information about registered builders, which, in turn, enables the VBA to monitor and enforce compliance with the Building Act 1993 ('the Building Act') and the Building Regulations 2018 (the building regulations).

Not all builders and tradespeople involved in a project require registration to perform building work – only the head contractor needs to be registered, and only in certain circumstances.

Why the change? Change was considered an important step to reduce non-compliant building work, enhance industry accountability and encourage skills formation and availability:

- Non-compliant work: Consumer problems in the Victorian building industry are high relative to other sectors, and the most common consumer complaint in the domestic building industry is poor quality workmanship. There is a significant financial burden on consumers to rectify poor quality and non-compliant work.
- Accountability: While head contractors engage directly with consumers, an estimated 80 to 85 percent of building work is completed by subcontractors and employees. Without registration and licensing requirements, the VBA is unable to initiate disciplinary action against these unregulated trades when they breach standards.
- Skills formation: The lack of any registration and licensing requirements for subcontractors and employees reduces the incentive for these groups to obtain the minimum recognised level of competency required to safely, competently and proficiently perform building work.

This is reflected in low apprenticeship completion rates. Of the trade apprentices commencing training in 2014, only 54.5% completed their training. This not only presents a risk to the quality of work undertaken in the industry, but it could also be a factor in the ongoing skills shortage in the sector.

What is the change? The new scheme will introduce new obligations for employees and subcontractors working in the building industry.

Employees will be required to obtain a licence, and subcontractors to obtain a registration, to perform certain (or 'prescribed') building work.

The new scheme will be implemented for carpentry work first, with other building work to be considered for inclusion in the scheme over a five-year period.

The new scheme will not alter existing regulation in relation to domestic and commercial builder registrations (head contractor registrations).

When will the change begin? The general framework for the new registration and licensing schemes will commence in the Building Act from 1 September 2020.

However, the new framework will not have effect until building regulations are made to prescribe the detail of the scheme.

While the new building regulations will likely be in place by 1 September 2020, to give industry a chance to plan and prepare for change, the operative date for the regulations could be delayed – for example into 2021.

How will the new scheme work? The general framework for the new registration and licensing scheme will be provided in the Building Act.

However, the Act does not provide the detail of the scheme. For example, the Act does not prescribe building work, and provides no detail on how the scheme will operate.

To give effect to the new scheme, the Victorian Government is considering options for new regulations.

The objectives of the new scheme are to ensure:

1. The incidence of non-compliant building work is reduced;
2. There is greater accountability for non[1]compliant work;
3. Incentives for skills formation in the building industry are improved (including completion of apprenticeships);
4. There is confidence that people who carry out or perform prescribed work have suitable qualifications, skills and experience to do so;
5. There is relative consistency between the approach taken to trade subcontractors and trade employees so as not to create incentives for the replacement of employees by subcontractors.

A registration/licence will provide a mechanism to:

- set a minimum standard of competency to be expected of people who perform prescribed work;
- ensure that only qualified, competent and suitable trades are authorised to operate;
- subject subcontractors and employees to regulatory oversight. This means trades providing poor workmanship will bear the cost of rectifying that work.

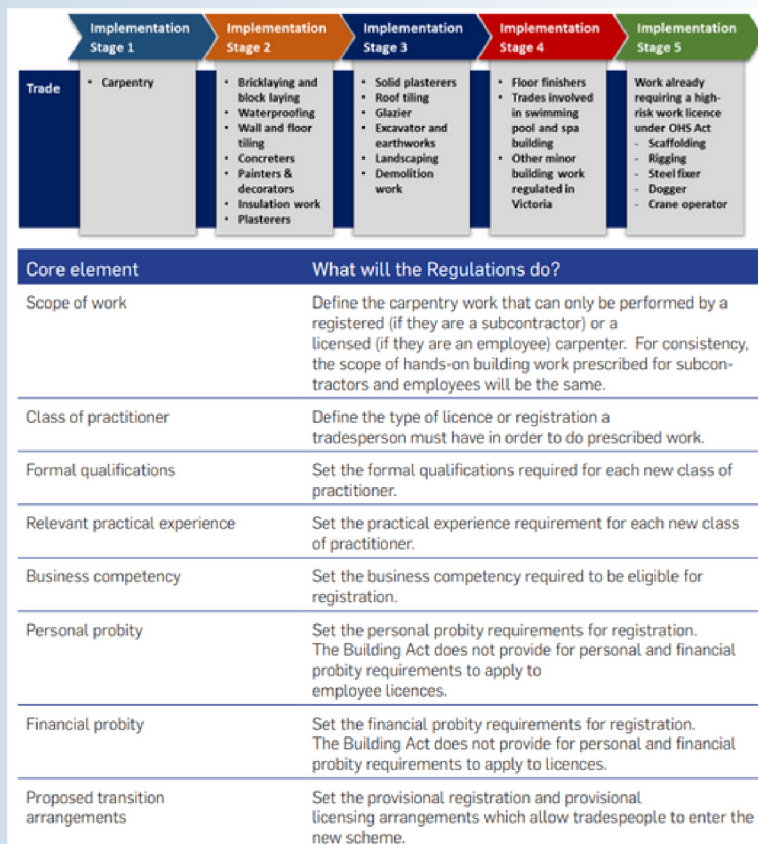
This will be achieved through a disciplinary system, which will provide an incentive for trades to do compliant and quality work the first time;

- recognise registered and licensed trades on a public register. This will also make it easier for consumers and builders alike to identify competent and qualified trades who are accountable for their work.

The new registration and licensing framework will operate by:

- making it an offence for any builder or tradesperson to undertake prescribed building work without the appropriate registration (for contractors) or licence (for employees);

and making it an offence for others to engage an unregistered subcontractor or to direct an unregistered or unlicensed person to carry out prescribed building work.



Registration Options

- In Registration Options Package 1 all trade contractors are registered as domestic or commercial builders in relevant existing classes of builder registration and this registration entitles them to not only carry out prescribed building work, but also to contract for it (whether head contract or subcontract).

Package 1 is an extension of the existing registration obligation for head contractors to subcontractors seeking to perform prescribed building work.

Essentially this option requires subcontractors to meet the current requirements as they exist in the current system for head contractors.

- Registration Options Package 2 creates new classes of trade subcontractor which correspond to the work prescribed for existing classes of domestic and commercial builder.

However, the new subcontractor classes would enable less onerous registration requirements to be set than in Registration Options Package 1.

This is because the new subcontractor class would not be authorised to enter a head contract (i.e. they would only be authorised to subcontract).

Registration Options Package 2 is similar to Registration Options Package 1 in that both packages retain and rely on existing classes of domestic and commercial builder.

Unlike Options Package 1 however, Options Package 2 does not require trades to be registered as domestic and/or commercial builders and does not require subcontractors to meet requirements as they exist in the current system for head contractors.

Under this package, any new prescribed subcontractor class could be prescribed less onerous registration requirements than the corresponding head contractor class.

This reflects the different levels of responsibility each class assumes in relation to prescribed work.

- Registration Options Package 3 would introduce one (or more) new classes of registration enabling subcontractors to perform a broad range of prescribed carpentry work.

This package is different to Registration Options Packages 1 & 2 as it The new registration and licensing framework will operate by:

- making it an offence for any builder or tradesperson to undertake prescribed building work without the appropriate registration (for contractors) or licence (for employees);

and making it an offence for others to engage an unregistered subcontractor or to direct an unregistered or unlicensed person to carry out prescribed building work.

T. 1300 249 466 E. info@waterproof.org.au www.waterproof.org.au

5 Issue 12 March 2020 departs from the way in which the classes of registration are currently prescribed for domestic and commercial builders.

In other words, in Registration Options Package 3 there is no distinction between domestic and non-domestic building work.

The advantage of introducing broader classes of registration for subcontractors is that it prevents fragmentation of carpentry and promotes labour mobility across the domestic and non-domestic sectors.

- Registration Options Package 4 would prescribe only carpentry work that is considered to be high-risk carpentry work.

In this option, single or multiple classes of registration can be created.

Registration Package 4 differs from the other three packages in that it is the only package that prescribes only some carpentry work, whereas all the other packages prescribe all carpentry work.

In this package, prescribed carpentry work is narrowly defined thereby limiting the scope of the scheme. Licensing packages Options A description of each package for the new licensing scheme follows.

- In Licensing Options Package 1 all employees are licensed, and new classes of licence align with existing classes of domestic and commercial builder (per Registration Options Package 1 and 2).

Criteria for registration and licensing which set the minimum standard necessary to physically perform each class of prescribed work is the same for head contractors, subcontractors and employee licences (qualifications and experience).

Business competency and personal and financial probity requirements are not required for licensing.

- Licensing Options Package 2 would introduce one (or more) new classes of licence enabling employees to perform a broad range of prescribed carpentry work (i.e. broader than work prescribed for current classes of builder).

Under this package, employees are licensed, and classes of licence correspond to carpentry work prescribed for Registration Options Package 3.

Licensing Options Package 2 and Registration Options Package 3 are different to Registration and Licensing Packages 1 as they depart from the way in which the classes of registration are currently prescribed for domestic and commercial builders.

In other words, this package does not retain a distinction between domestic and non-domestic building work.

- Licensing Options Package 3 would prescribe carpentry work narrowly thereby limiting the effect of the scheme. It prescribes only carpentry work that is considered to be high-risk carpentry work.

In this option, single or multiple new classes of licence can be created. Under Licence Package 3 employees are licensed and classes of licence correspond to carpentry work prescribed for Registration Options Package 4.

Licensing Package 3 differs from the other two packages in that it is the only package that prescribes only some carpentry work. The other packages prescribe all carpentry work.

Discussions so far with DEWP and MBA favour: Registration Option 3

Licensing Option 2

MEMBER ENGAGEMENT WORKSHOP

OPTION 3

Creates one (or more) new classes of registration enabling subcontractors to perform a broad range of prescribed carpentry work.

In Options 3 there is no distinction between domestic and commercial building work.

The advantage of introducing broader classes of registration for subcontractors is that it prevents fragmentation of carpentry and promotes labour mobility across the domestic and commercial sectors.

DOMESTIC

DB-U

DB-L

COMMERCIAL

CB-U

CB-L

Trade Registered Carpentry
(can work across the industry)

Licensed Carpentry Employee
(can work across the industry)

MEMBER ENGAGEMENT WORKSHOP

OPTION 3

SCOPE	WHO CAN PERFORM WORK					
	Domestic Builder Unlimited	Domestic Builder Limited Carpentry	Commercial Builder Unlimited	Commercial Builder Limited	Trade Carpentry	Licensed Carpentry
Work on Domestic Projects	✓	✓	x	x	✓	✓
Work on Commercial Projects	x	x	✓	✓	✓	✓
Work on Domestic Projects and Commercial Projects	x	x	x	x	✓	✓
Hands-on work	✓	✓	✓	✓	✓	✓
Subcontract to builder	✓	✓	✓	✓	✓	x
Contract to client	✓	✓	✓	✓	x	x
Take out building permit	✓	✓	✓	✓	x	x
Take out DBI	✓	✓	NA	NA	x	x

Registration and licensing exemptions Broadly speaking, employees or contractors that would like to perform prescribed carpentry work will need to obtain a registration or licence.

Registration and licensing exemptions however define circumstances in which prescribed work can be done by an unregistered subcontractor or a non-licensed employee or even another registered practitioner whose registration does not authorise the carrying out of a particular class of prescribed work.

Options proposed by stakeholders for exemptions from registration and licensing include:

- Allow an un-registered subcontractor to contract for any prescribed carpentry work that is under the value of \$10,000.
- Allow any carpentry work over the value of \$10,000 which is exempt from compliance with the building regulations and/or from the requirement for a building permit to be carried out by un-registered and non-licensed trades.
- Supervised work - This would allow an unregistered subcontractor or a non-licensed employee to work under the supervision of an appropriately registered building practitioner.

This supervised work exemption could apply to facilitate workers who are not undertaking an apprenticeship and who are not eligible to obtain a provisional registration or licence to gain the experience necessary to become registered or licensed under the new scheme.

- Low risk work - If a broad definition of prescribed work is used, it may be necessary to identify specific aspects of work that should be exempt and can be carried out by anyone.

We hope this information provides some insight to the process and stimulates discussion.

David Hepworth

Waterproofing Basements

Basements are used for a number of different purposes with the most common types as follows:

- Car parks
- Car parks with storage units
- Plant rooms
- Habitable room spaces

Depending on the basement usage there is a different demand on the waterproofing. The different requirements for the four types are discussed below.

1. Carparks

Cars bring water into the basement when it is raining and drop much of their surface water onto the floor of the basement.

This can be observed in shopping center carparks where water is carried often hundreds of meters into the carpark as vehicles enter.

With these type of basements it is important that there is a waterproof seal at the wall-floor junction otherwise water can pool on the floor of the carpark, as shown in Figure 1, which makes the basement unserviceable in the flooded area.

If there are many cars using the basement then it is important that the floor is sloped to a drainage system so excessive water does not build up on the floor of the carpark.

Calcification on the wall of the carpark as shown in Figure 1 does not make the carpark unserviceable but is an acetic issue.

If however the carpark is built under an external exposed deck the area of the deck needs to be considered.

If the deck has lengths in excess of 4 metres then there is the possibility of the deck cracking causing leakage into the concrete deck roof.

This can result in water leaks into the roof of the car park with damage to the paint work of the vehicles that continually park in the same spot under the drip. Dripping from the roof of a carpark with this type of cracking in a deck roof is shown in Figure 2.



Figure 1 - Flooding of the floor of a car park basement by leaking at the floor-wall junction

With metal decking supporting the concrete roof it is very difficult to trace the source of the surface leak as the water flows along the metal deck surface before it shows up on the under surface. In the event of such a leak occurring it is often easier to install a channel drain under the leak which will prevent dripping onto vehicles parked below.

2. Carparks with storage units

Often basement carparks associated with units have storage cages. These are usually located in front of the carpark space and can have a spoon drain running along the wall-floor junction which makes the storage cage serviceability questionable as shown in Figure 3.

3. Plant rooms

These usually have a floor sloped to a floor drain to cater for a plumbing leak that can occur as these rooms are usually only visited for maintenance.

Calcification and slight water leakage with this type of basement is only an acetic issue as the drainage to the floor waste will handle any slight leakage into the basement through its structure. Waterproofing is not as critical for this type of usage.

4. Habitable room spaces

These are becoming more frequent with the use of below ground theatre rooms to restrict noise pollution. They require a much greater detail into the waterproofing especially if they are a single skin wall construction.

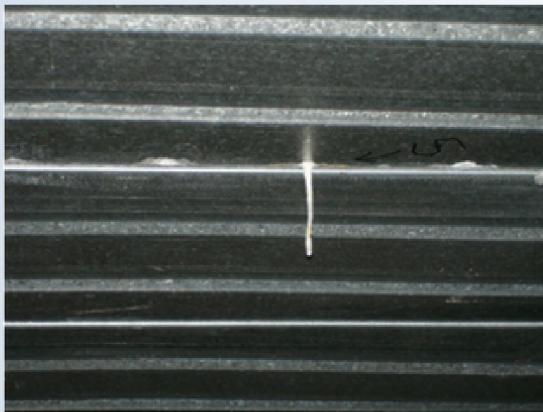


Figure 2 - Calcification drip from roof of a car park

Also the floor requires complete waterproofing usually with two layers so a waterproofing membrane can be installed between the two layers along with a water vapour barrier.

The waterproofing of the walls needs to have a lower water vapour transmission than the internal wall finish otherwise the vapour will end up trapped behind the internal finish and can condense.

Once vapour condenses it can pick up salts from the wall resulting in flacking of the internal finish as shown in Figure 4.



Figure 3 – Storage cage with water flowing in the drain at the wall-floor junction



Figure 4 – Blistering of paint finish by water vapour

These habitable rooms built below ground level will have remain to serviceable for the life of the building.

With single skin walls this means the waterproofing usually will need to remain serviceable for the life of the building also, as often there is limited or no access to the external walls below ground level to replace any failing waterproofing.

In some habitable room basements where the waterproofing has failed where access to the external wall was not possible the problem has been solved by installing a drainage system and a vented cavity by placing battens supporting a plasterboard wall lining away from the structural wall.

Figure 5 shows the wall situation before the plasterboard wall was installed.

In the design of a waterproofing system for basements the major factor that must be considered is the use of the basement as different uses require different performance requirement for the waterproofing system.



Figure 5 – Basement before installation of the plasterboard wall supported on metal battens

Published Articles by Paul Evans - Remedial Waterproofing Consultant

Finding and Fixing What Lies Beneath in Waterproofing

February 29th, 2024

Drenched to the Core: Major Waterproofing Problems Plaguing Residential Homes

October 12th, 2023

(Sponsored Content) Raising Standards and Awareness in Waterproofing

February 9th, 2023

Multi-Storey Basements Must be Kept Dry

May 26th, 2022

Why Tiling and Waterproofing are Intrinsically Linked

January 17th, 2022

Waterproofing Design In Construction

July 30th, 2021

Leaking Concrete Rooftops – Why Waterproofing Should Not Be Ignored or Delayed

April 28th, 2021

Solving Water Leaks Is Not Always About Waterproofing

February 4th, 2021

Australia's Awareness of Waterproofing is Growing

May 21st, 2020

Why Balconies Leak

February 24th, 2020

BuildIT – Featured Article 2019

“Committed to Raising Waterproofing Standards and Training Across Australia”

Paul Evans, President of Australian Institute of Waterproofing

<https://buildit.partica.online/buildit/buildit-2018/flipbook/66/>

Sourceable – Construction

Interviewed by Andrew Heaton on October 5th, 2017

<https://sourceable.net/australia-must-improve-waterproofing-standards-practices/>

Waterproofing President to Speak at International Conference

Australian Institute of Waterproofing (AIW) News - October 2017

Solving Roof & Balcony Leaks

Facility Perspectives - The Leading Resource for Facility Management in Australasia. VOL 11 NO 1. March-May 2017

Notes from a Balcony Inspection

Australian Institute of Waterproofing (AIW) News - November 2016

Australian Institute of Waterproofing – Online News

Notes from a Balcony Inspection – Nov 2016

<https://www.waterproof.org.au/notes-from-a-balcony-inspection/>

Getting It Right in the First Place – October 2016

<https://www.waterproof.org.au/getting-right-first-place/>

Waterproofing - Getting it Right the First Time

Australian Institute of Waterproofing (AIW) News - October 2016

Waterproofing - Common Failures

LinkedIn Article - Feb 2015

Associations

Australian Institute of Waterproofing (AIW)

Australian Society of Building Consultants (ASBC)

Building Dispute Practitioner Society (BDPS)

Concrete Institute of Australia (CIA)

Australian Concrete Repair & Remedial Building Association (ACRA)

Master Builders Association Victoria-Specialist Contractor (MBAV)

Owners Corporation Network of Australia Ltd (OCN)

VBA Registered Building Practitioner - Domestic Builder Unlimited DB-U 7983

VBA Registered Building Practitioner - Commercial Builder Unlimited CB-U 4077