

## NCC 2022 Review

Master Builders surveyed members on the implementation of the NCC 2022 six months on from the 1 October 2023 start date. (Noting the exception for energy efficiency provisions commencing 1 May 2024.)

The feedback has been that the changes have incurred additional cost and have been technically difficult to implement.

In some cases the high cost and technical challenges bring only a limited benefit and mean that, on balance, they cannot be warranted.

There are amendments that Government can make that will address the most significant of these concerns. These include:

### Livable Housing

1. Exempt dwellings from the Livable Housing requirements where they are exempt from providing the step-free access path.
2. Increase the maximum entry threshold to 8 mm on the shower designated to be hobless and step-free where it is also an enclosed shower.
3. Where owners undertake to supply and install floor coverings after completion, compliance to the step-free threshold requirements becomes the owner's responsibility.
4. Reduce the requirement for the reinforcing behind the toilet to 900 mm wide and provide an additional option for studs at 300 mm maximum centres around the toilet and shower areas.
5. Remove the requirement that the toilet be in the centre of the circulation space.
6. Allow the swing of the door to overlap with the circulation space as is permitted under AS1428.

### Falls to Waste

7. Remove the requirement for the maximum gradient 1:50 gradient in the shower area.

### Ventilation

8. Remove the make-up air ambiguity (room volume calculation) and amend the NCC guidance to say that all doors have 20 mm minimum is required.

### Energy Efficiency

9. Require all energy assessors to be accredited and audited.
10. Provide concessions to the energy efficiency requirements for raised houses (built on stumps) so that this type of house can continue to be built.

## Survey Results

### Challenges & Costs

Respondents reported that the changes have meant that construction is costing more.

*“We have increased the base price by \$18,000 on a 320 m<sup>2</sup> home to cover the 7 star rating. This is hurting sales as other builders are not always including the price increases up front.”*

*“Affordable housing further out of reach.”*

*“Government is trying to fix the housing crisis. How about they make homes more affordable and remove all the changes that make new homes more expensive to build.”*

*“Stop making changes for the sake of change. Make changes that provide a cost benefit to the homeowner.”*

The changes have also involved extra work for their business in having to change processes, plans and standard ways of construction. It has also involved a lot of training for staff and subcontractors to the new rules.

*“As a certifier I have to do the education and it costs me significant time that I get no remuneration for. It's bullshit.”*

*“All our standard plans are now worthless. The cost of redrawing and re-estimating them all is prohibitive so we are going to have to change our entire business model. This puts the whole business at risk.”*

*“Making sure the subbies comply with the changes has been challenging.”*

Processes have needed to be changed, requiring more work up front.

*“This includes additional costs to the buyer upfront to ensure when we prepare the contract that all boxes have been ticked, this is also slowing down the whole sales to contract to build timeframe.”*

Everyone has been faced with technical problems. These technical problems were felt right across the board.

*“The changes are difficult to follow.”*

*“It's poorly drafted and hard to understand.”*

*“The NCC is very difficult to read.”*

## Livable Housing

### PROPOSED AMENDMENT #1

Exempt dwellings from the Livable Housing requirements where they are exempt from providing the step-free access path.

There is a significant cost involved in providing appropriate set downs and weatherproofing to achieve the step-free entrance and thresholds. There is also additional cost in providing the larger circulation space in the bathroom and paths of travel. Builders are regularly finding that this is coming at an additional cost in the order of \$7,000 to \$10,000. Where a person needs to climb a set of stairs to reach the dwelling the additional cost is not offset by the benefit gained.

There is a lack of understanding why there are requirements for accessible housing even after having to climb stairs – the second storey on a house or a house on a sloping block of land.

*“What is the purpose of worrying about level thresholds between rooms or showers when the person has just had to climb a set of stairs?”*

One example is the “Queenslander” style home with wide verandas. Here there are usually many entry doors leading from the verandas. If the construction has to be adjusted to suit a level entrance at the entry door, then all the doors will need to be set up the same way. This adds significant cost and increases the risk of water ingress across many doorways. At the same time providing little benefit for someone who has just climbed a set of stairs.



### PROPOSED AMENDMENT #2

Increase the maximum entry threshold to 8 mm on the shower designated to be hobless and step-free where it is also an enclosed shower.

Livable housing requires a maximum 5 mm transition into the shower. The waterproofing requirements on an enclosed shower call for a minimum 5 mm.

*“This leaves zero tolerance which is not achievable.”*

While the [QDC 4.5](#) provides details for an enclosed shower, it does not address the challenge of meeting two conflicting requirements. The QDC 4.5 alternatives to provide a linear drain at the shower screen threshold for an enclosed shower comes at a significant cost increase when the enclosed shower already contains a central shower floor drain or linear drain to the rear shower wall.

Increasing the maximum allowed under livable housing to 8 mm will be buildable and still achieve the policy intent.

### **PROPOSED AMENDMENT #3**

Where owners undertake to supply and install floor coverings after completion, compliance to the step-free threshold requirements becomes the owner's responsibility.

It is not uncommon for homeowners to take possession of a dwelling without floor coverings, either in whole or in part, to reduce the up-front cost of construction. The level threshold requirements of the LHDS Section 3.2 mean that a building certifier cannot issue the building final when the absence of floor coverings means that there is not a level threshold. While the requirements include some flexibility in being able to use a ramped threshold in place of level access at internal doors, the utility of this is limited by the ramp needing to be within the door jamb.

In these cases, meeting the requirements should be the responsibility of the owner. Should this not be possible, the requirements must be amended to allow for threshold ramps that comply with the Australian Standard for disability access - AS1428, that is they extend beyond the width of the door jamb.

### **PROPOSED AMENDMENT #4**

Reduce the requirement for the reinforcing behind the toilet to 900 mm wide and provide an additional option for studs at 300 mm maximum centres around the toilet and shower

Where the wall adjacent the centre line of the toilet pan is further than 460 mm then Figures 6.2f or 6.2g of the Livable Housing Design Standard require that reinforcing must be installed behind the toilet and extend 500 mm both sides of the centre line to the toilet pan.

The consequence of this is that a compliant reinforcement cannot be installed behind the toilet pan when the toilet pan centreline is situated more than 460 mm from the side wall and does not extend a minimum of 500 mm for the centreline of the toilet pan from the side wall.

There is effectively a 40 mm space that would require a performance solution for the installation of reinforcement to behind the toilet pan.

Similarly, where a windowsill or door encroaches on the reinforcing required to be provided adjacent to the toilet pan, then reinforcing must be provided behind the toilet (Figures 6.2f

or 6.2g apply). If the toilet pan is within 500 mm of the wall, from the centre line of the pan, it cannot comply with the Standard.

Reducing the reinforcing requirement behind the toilet to 900 mm will address both these concerns. In lining up with the required circulation space in front of the toilet pan (900 mm wide) it will have the added benefit of removing any design implications based solely on the reinforcing for future grabrails that may never be required.

Allowing the additional option to provide extra studs positioned more closely together will increase the flexibility for the placement of grabrails while also providing a reliable option for the homeowner. It will still achieve the policy intent and at the same time will be in keeping with current construction practices.

#### **PROPOSED AMENDMENT #5**

Remove the requirement that the toilet be in the centre of the circulation space.

This requires a level of detailing that is not possible to achieve in practice. Requiring a minimum clearance of 450 mm from the wall is workable.

#### **PROPOSED AMENDMENT #6**

Allow the swing of the door to overlap with the circulation space as is permitted under AS1428.

Not allowing the swing of the door to encroach in the circulation space where the door needs to swing inwards results in an excessively large space in front of the toilet. It is a level of stringency not required under the specialist standard for access and mobility - AS1428. It is a requirement that is very difficult for home owners to understand, often leaving builders in a difficult position.

*"I am experiencing push back from clients who are finding that the area provided in front of the toilet is excessive."*

#### Additional concerns

The requirement for an access path from the street was seen as a prohibitive cost in many cases, with projects not proceeding where it was required. Of particular concern was ensuring compliance with the strict gradients.

When it comes to renovations there are mixed interpretations and misunderstandings as to how the requirements apply. There was particular concern where the existing part of the dwelling may be required to comply with the new regulations, especially achieving level thresholds.

*“With renovations achieving the requirements is just about impossible.”*

## Falls to Waste

There is great complexity that is requiring extra work to ensure the wet area is properly set out and in some case rework, adding additional days to achieve compliance. The requirements are particularly difficult to meet where timber floors are used and it is a challenge achieving the correct threshold transition (under Livable Housing) while still achieving the correct fall.

In renovations where the floor joists need to be cut to achieve falls, it requires a major structural upgrade to the floor. It is also likely to be necessary to reposition floor waste from central to a channel drain to achieve 1:80 fall.

*“Changing something as simple as a bath type (podium to freestanding) requires other changes which customers do not want to pay for.”*

The requirements are leading to the unintended consequence (and less than best practice) of removing floor wastes from wet areas due to cost and structural issues with providing fall.

*“The cost of each of the options is prohibitive. We are no longer offering wastes in bathrooms. That is a step backwards.”*

### **PROPOSED AMENDMENT #7**

Remove the requirement for the maximum gradient 1:50 gradient in the shower area.

[QDC 4.5](#) prescribes that the gradients within a shower area must be within the NCC gradients of 1:80 and 1:50.

Within a shower area the central floor drain will always be at varying distances from the walls. Providing a constant gradient from the central floor drain to the walls would create a wave affect at the floor wall junction.

Therefore, standard industry practice has been to provide a combination of gradients within the floor surface to provide a constant line at the floor wall junction. With the QDC reference being no less than 1:80, contractors can only choose between the closest or further most floor junction to do the calculation. In both circumstances at least one gradient will be flatter than 1:80 or steeper than 1:50, and therefore impossible to build a compliant shower area without a wave line junction at the floor wall junction.

This problem can be addressed by amending QDC 4.5 to state that a 1:80 gradient in combination with gradients steeper than 1:50 may be used to provide a constant alignment of the floor wall junction and grade surface water into a central floor drain, or similar floor drain offset from a central location.

## Ventilation

### **PROPOSED AMENDMENT #8**

Remove the make-up air ambiguity (room volume calculation) and amend the NCC guidance to say that all doors have 20 mm minimum is required.

Determining the quantity of make-up air needed for ventilation requires a complex calculation sitting in the ventilation standard (AS 1668). Recognising the challenge, there is explanatory information included in the NCC stating that for one common scenario (700 mm door) a 20 mm under cut will meet the requirement. Running the calculation across a number of scenarios the 20 mm door undercut is generally appropriate. It would therefore aid compliance if the explanatory information could remove the reference of the 700 mm door to note 'that a 20 mm undercut to the door will achieve the requirement'.

## Condensation

More clarification is needed. It is hard to achieve with flat roofs or with low pitch roofs.

It is a challenge to provide acceptable documentation for building certifiers.

Contractors are assuming any "breather" wall wrap is also a compliant vapour permeable membrane. The term "water barrier" needs to be added. [Note: Further clarification of vapour permeance for pliable building membranes has been included within the NCC 2025 public comment draft and will address this concern.]

## Waterproofing

Additional costs are being incurred with the changed requirements. This includes larger floor joists and additional bedding to wet areas.

The contradictions between AS3740 and the NCC wording continue to prove challenging.

It needs to become industry practice for applicators to include details of the waterproofing material used on the Form 43 (Aspect Certificate) to confirm compliance.

## Energy Efficiency (commenced 1 May 2024)

While the requirements are still new, some concerns on the challenges they are generating have emerged. Additional concerns may come to light as more projects are come through under the requirements.



#### **PROPOSED AMENDMENT #9**

Require all energy assessors to be accredited and audited.

There is no control over who prepares energy efficiency reports. There is no requirement to ensure the assessor is properly accredited. Unaccredited assessors are not subject to audits so there is no oversight of their assessments or if they are inaccurate or rely on incorrect assumptions and information.

Allowing only accredited reports from accredited assessors will help ensure accurate assessments and to provide a level playing field.

#### **PROPOSED AMENDMENT #10**

Provide concessions to the energy efficiency requirements for raised houses (built on stumps) so that this type of house can continue to be built.

Energy assessors have provided feedback that achieving 7 Stars for raised homes is difficult and expensive, requiring additional construction detailing and insulation (even with the 1 star credit). This impacts Queensland style housing as well as housing built on slope sites and in flood zones.

*“Suspended floor homes will be difficult to get approved. Suspended floor two storey homes impossible to approve.”*

*“Suspended floor homes in flood zones that cannot put underfloor insulation in place will be difficult to get approved.”*

*“Still struggling to understand how we can get the ratings required.”*

*“Homes built on stumps, to suit our climate, are difficult if not impossible to achieve a 7 star rating.”*

In colder climates such as the Darling Downs (Zone 5) builders are reporting additional costs in the order of \$50,000 to \$75,000.

#### Other Concerns

##### **Design**

It is very difficult to tell a customer what they can and can't do, because of how complex the assessment now is.

*“You can quote a compliant house, then following colour selections it becomes non-compliant. Or where they notify of a future pool, it needs to be recalculated.”*



*“The laws and assessment tools are designed for small single storey homes with air conditioning. In Queensland our clients like to have large windows and doors. This choice is being taken away from them making it difficult to sell homes.”*

Ensuring that the energy assessments are completed prior to entering a fixed price contract is now more important.

*“Entering fixed price contracts prior to an energy efficiency calculation could be very risky for the builders.”*

### Overhangs

House must have overhangs which is an issue for the lower floor on two storey homes.

### Insulation

Cost of insulation is set to increase. Availability of the right insulation batts will become difficult.

Some climate zones will require R3.8 wall batts. This means a 200 mm wall thickness.

### Glazing

Designs that have a glass to floor area greater than 20 per cent are likely to require double glazing. Where double glazing is used on houses also needing to meet a BAL, they won't comply due to the glazing thickness. Double glazing is not offered by many window companies, especially for a double hung windows, reducing client choice.

Low E glazing has issues around quality. It scratches easily and the glazing comes out milky.

Where window ventilation is needed to achieve the rating, it will not be possible to use window restrictors to comply with fall protection requirements. This means security screens will be required for these windows at a significant cost.

Glazing calculator (2019 tables) won't allow a design to have a covered area over windows with direct access to a living area. [Note: We understand that this issue is being looked at by the ABCB.]

### **Whole-of- Home**

DtS / ABCB Calculator is less time consuming and clients can make appliance changes and the report amended. The assessment seems less rigorous in its assessment to reach compliance but it cannot be used for homes in excess of 500 m<sup>2</sup> of air-conditioned spaces.

Full assessment by way of a rating tool includes all appliances, model numbers, and energy usage details. This can take up to two hours to input data, once it is all known. Any change to any appliance renders the original assessment null and void.

*“It is even more important to ensure that all the details are included in the plans.”*

Including solar power is not always possible or feasible. Not all sites are suitable for solar power due to shading by trees/overshadowing by neighbouring dwellings.

Take the example of a development of 20 to 30 units/ townhomes. The developer must spend over \$200,000 and wait 18 months to modify the platform/grid to enable solar power. The solar power and the infrastructure to support it costs the developer somewhere in the order of \$2.2 million on a \$25 million dollar project due to the 18-month delay, interest on finance and lack of infrastructure.

**28 June 2024**

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