



8 December 2022

Mr John Stimson
Planning System Implementation Review
GPO Box 1815
ADELAIDE SA 5001

Attention John,

Submission: Expert Panel Discussion Papers

Engineers Australia (EA) appreciates the opportunity to provide the following comments regarding the below mentioned discussion papers.

- Planning, Development and Infrastructure Act 2016 Reform Options
- Planning and Design Code Reform Options

The Government's efforts in instigating a review into the state planning system implementation is much needed and appreciated. Consultation between the building sector and respective governing bodies ultimately leads to better outcomes and we encourage the Expert Panel to continue open dialogue with us.

The requirement that the planning administration system is attuned to the cost and risk factors that exist in the residential building industry is of utmost importance to ensuring an affordable housing supply.

Housing cost and supply issues are "top of mind" currently.

Pressures on building professionals can be reduced by ensuring the PDI Act, the P&D Code and the portal are functioning well.

With regards to the engineering components, EA made submissions to the Department of Planning and Transport and Infrastructure in 2016 which, while well accepted at the time, have not been acted upon. These included definitions with regards to Accredited Professionals, which in the 2021 planning reform was limited only to Building Certifiers and also "Limitation on time when action may be taken". (Refer to Appendix A). The time limitation is now a matter of urgency, subsequent to the introduction of tree planting requirements. (Refer to Appendix A).

A priority of the Panel should be the review of the industry and consumer cost implications of the Planning and Design Code.

EA made numerous submissions with regards to the proposed tree planting requirements (Dec 2018 and Nov 2019), the implications of which do not appear to have been understood.

Damage to houses from trees on a large scale is inevitable under the 2021 planting requirements.

If there is not a reversion to the planting of "required" trees in public space, then the State should consider an indemnity scheme that compensates home owners for damage caused by neighbours' trees or their own trees planted in accordance with the Planning and Design Code requirements.

If homeowners are not directly indemnified, then the State will need to create either an indemnity scheme or immunity for Engineers and Builders. This would however see the possibility of broadscale litigation.

Without such indemnities, Indemnity Insurance for Engineers and Builders will not be sustainable. (There is further background evidence in Appendix B).

In view of these complexities, the tree canopy off-set scheme should be revoked.

Legislation that inhibits housing affordability should either be rejected or amended.

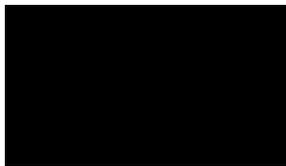
EA would like to thank the Expert Panel for the opportunity to provide feedback on the abovementioned papers (refer to Appendix A and B).

Our comments listed in this letter are based upon consultation with a large cross section of Consulting Engineers and Technical Experts over the past four years.

EA is ready to make our panel of experts available for a meeting if it will assist.

Please do not hesitate to contact me for any further information.

Yours sincerely



Jan Irvine

General Manager SA & NT

E: [REDACTED]

M: [REDACTED]

Encl: *Appendix A: Planning, Development and Infrastructure Act 2016 Reform Options*
Appendix B: Planning and Design Code Reform Options

APPENDIX A:

PLANNINGS, DEVELOPMENT AND INFRASTRUCTURE ACT 2016 REFORM OPTIONS.

Accredited Professionals

EA understands that professionals need to be linked by a clear accreditation process that sets out responsibility and authority.

Building level 1 certifiers have the ability, under law, to verify DTS planning consents. EA supports this process.

The regulatory changes did not however set out minimum qualifications for Engineers.

A1. Minimum Qualification of Engineers

EA recommends that a minimum qualification for Engineers carrying out structural calculations and foundation investigation (as for residential structures) be specified.

This could be per National Engineers Registration or as in Referenced excerpt from the “South Australian Public Health (Wastewater) Regulations 2013, Preliminary Part 1 definitions” below:

Wastewater Engineer means an engineer who—

- (a) is a member of the Institution of Engineers, Australia of the category "Chartered Professional Engineer" or is registered on the National Professional Engineers Register administered by that Institution; and
- (b) has experience in wastewater system or geotechnical engineering; ”

Recommended Minimum Qualifications

Civil Engineer means an Engineer who—

- (a) is“CPEng or NER” see above
- (b) has a minimum 8 years of experience in the design of Civil Engineering works including footing systems. This matches the existing technical expert in existing Dev Act Regulation 91 (ii)

Geotechnical Engineer means an Engineer who—

- (a) is“CPEng or NER” see above
- (b) has a minimum 8 years of experience in the design of Geotechnical Engineering works including soils assessment for footing systems. This matches the existing technical expert in existing Dev Act Regulation 91 (ii)

Structural Engineer means an Engineer who—

- (a) is“CPEng or NER” see above
- (b) has a minimum 8 years of experience in the design of Structural Engineering works including footing systems. This matches the existing technical expert in existing Dev Act Regulation 91 (ii)

Extra “Technical Experts” who check the design Engineer’s work that is not prescribed for self-certification must have the same qualifications as the Design Engineer “minimum qualifications”

A2. 10 year cap on liability (Ref DP & I Act 2016, Division 7. Liability, Regulation 159)

“Design” is to be included in the 10 year cap in the regulations to have the same status as “building work”. Otherwise, designers in particular Engineers, will carry the responsibility of builders after 10 years, particularly with respect to tree damage which has a long gestation period. It will also assist with respect to the future availability of PI Insurance for Engineers.

Recommended Regulatory Change

In Part (1) of Regulation 159, the cap in the Regulations should be extended to “defective building work including design” rather than being limited to “defective building work”.

APPENDIX B:

PLANNING AND DESIGN (P&D) CODE REFORM OPTIONS

Trees

A strong focus under the P&D Code was to provide amenities that foster canopy regeneration, requiring applicants to plant at least one tree alongside new houses (contained on site)

Despite EA'S submissions in 2018 and 2019, the consequences of urban tree canopy policy have not been thoroughly understood, nor the dramatic affect it has on housing designs and their footings. Several factors that have not been adequately addresses since the adoption of the P&D Code include the following.

- **Tree effect on neighbouring properties.** It is recognised that trees negatively impact housing, drying the soil for a considerable distance and causing footings settlement. The locality of mandatory trees on neighbouring allotments is not considered under the P&D Code, meaning their positioning has the potential to adversely affect surrounding land and property. The code specifies trees in terms of minimum height and minimum number, whereas AS2870 (and the CSIRO Guide) specify trees in terms of maximum mature height and minimum distance from a house, as well as differentiating between a group of trees and a single tree.

The typical smaller allotment sizes mean that trees from up to five adjacent allotments can effect a single neighbour's house. (The recently released "Planting guide....." contains many planting plans which would cause such effects upon neighbouring property). This forces Engineers to consider more severe effect of a "group" of trees. This has consequent cost implications.

Mandated broad scale tree planting on private allotments will lead to an upsurge in claims against Builders, Engineers and neighbouring property owners. (The standing of the Law of Nuisance against neighbours' tress will have to be tested in light of the Planning and Design Code). One can envisage an upsurge in litigation under these circumstances with consequent impact upon the cost and availability of PI Insurance for Engineers.

Background to Expected Levels of Footing Performance

AS 2870 sets out in **Section 1.3.1**, in part, that:

"Buildings supported by footing systems designed and constructed in accordance with this Standard on a normal site"...

"are expected to experience usually no damage, a low incidence of damage category 1 and an occasional incidence of damage category 2"

Appendix C defines/explains level of damage to be expected for the various categories (1, 2, etc).

Note: Category 3 damage includes the fact that "service pipes can fracture". This escalates the potential for further damage. Engineers Australia pointed out in December 2018 an emerging indemnity risk as a result of a recent Supreme Court decision where a home Insurer did not pay for a homeowner's structural damage claim consequent from leaking service pipes.

Section 1.3.2 Normal sites, defines a 'normal site' as

"Normal sites are those that are classified as one of Classes A, S, M, H1, H2 and E in accordance with Section 2 of this Standard and where foundation moisture variations are those caused by seasonal and regular climatic effects, effect of the building and subdivision, and normal garden conditions without abnormal moisture conditions"

It also sets out that the application of the recommendations in Appendix B (which includes restrictions on tree planting) is expected to provide normal site conditions.

Section 1.3.3 Abnormal moisture conditions, states, in part,

“Buildings constructed on sites subject to abnormal moisture conditions have a higher probability of damage than those described in Clause 1.3.1.”

The Standard goes on to describe what constitutes abnormal moisture conditions prior to, during and after construction. “The effect of trees too close to a footing” is one of these.

AS 2870 goes on in **Appendix H** contains a method for designing footings for trees for conventional raft or grillage raft footing systems. It, however, warns:

“This approach to the design of footing systems in the presence of tree effects will not necessarily result in a footing system that achieves the performance requirements of this Standard...”

There is the potential for the owner to be offered a footing choice which is relatively “immune” to the effects of trees in the form of a piered footing (set out on p162, “Footing Systems” in AS2870). This is currently considered as cost-prohibitive (of the order of \$40,000 extra).

These issues were acknowledged with respect to the risks associated with On-Site Stormwater Retention and the damage that could be consequent from injecting stormwater into site soils by the restrictions within the Minister’s Specification SA 78AA, September 2003. That restriction took account of the reactivity of the site:

“The use of on-site retention devices is restricted to soil types classified as class A and S or class M-D where the characteristic surface movement, (y_s value), is equal to or less than 25mm, as defined in AS 2870...”

The issues of lack of choice with respect to accepting the risk of a lower standard of performance and the potential for consequential damage to neighbouring property highlights four key matters:

- Who is going to inform the consumer that there is an increased risk of underperformance of their footings and house?
- In the light of the lack of choice who is going to indemnify the consumer for the possible consequential damage and future maintenance costs?
- How is the owner of a site with trees to be indemnified against claims for consequential damage from an adjacent homeowner affected by the first owner’s trees?
- Who is going to indemnify the Builder and the Engineer against claims that the performance of the footings/house does not meet the NCC requirements?

Alternatives

In summary, the planting of trees on small allotments without reference to the reactivity of the soils is not compatible with the current consumer-accepted levels of building performance. This is a consequence of Adelaide’s deep reactive soils and semi-arid climate.

The Industry operates in the context of the NCC deemed-to-comply designs and Performance Standards which the consumer accepts. A large-scale movement away from the accepted Performance Standards will create a complex liability and Insurance risk scenario for all.

- The planting of trees could continue to be dealt with as a matter of informed choice, as it is now leaving homeowners to deal with their own or a neighbour’s potential consequential damage.
- Where the planting of trees is regulated the distance that trees are planted from buildings should be limited as set out in AS 2870 Appendix H:
 - Single tree - 1.0 x the height
 - Group of trees - 1.5 x the height, and
 - Group of four or more trees in a row - 2.0 x the height
- The planting of additional trees to offset infill development could be dealt with in a Master-planned way in the Public ‘realm’ on an ‘offset basis’. The tree canopy off-set scheme should be revoked.