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NZ Transport Agency Waka Kotahi

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Kia ora

Thank you for the opportunity to make a submission on the proposed NZ Transport Agency Waka Kotahi Z15-1 Standard – Delivery of Designs, As Built and Digital Information.

About ACE New Zealand

The Association of Consulting and Engineering New Zealand (ACE New Zealand) is a firm-based membership organisation representing around 260 professional services firms and 15,500 people working across the built and natural environments – from large global firms to employee-owned small and medium enterprises.

Our members include engineers, project managers, planners, scientists, architects, surveyors and other technical disciplines. Our teams contribute significantly to Aotearoa New Zealand's economy by advising, designing and delivering on critical technology, policies and practices, and construction and infrastructure across the built and natural environment in Aotearoa.

General comments

Overall, we are supportive of this proposed standard and consider it a positive change for the industry. Digital delivery is fast becoming a vital part of the work of our industry as we seek continual efficiencies, and the efforts to standardise these efforts are timely. However, we have a number of comments on the proposed standard which we outline below. We would welcome the opportunity to discuss this feedback further, and would be happy to continue to work with NZTA as it finalises this standard.

We are concerned this standard will introduce additional costs to the industry and time to projects, at least in the short term as the requirements become fully understood and the requisite skills become embedded within the industry. Significant effort will be required both within and outside of NZTA to upskill the wide array of professionals involved in NZTA projects, and to invest in new technologies and applications.

In relation to the impact on the procurement of professional services, there are a number of areas that should be considered, including:

- How professional services companies will be able to price fairly to complete projects under this new standard.

- In order to allow appropriate pricing at the time of tender clarification of the requirements, and roles and responsibilities, within a project should be outlined within the RFP, rather than after the contract has been awarded.
- Whether this standard will introduce additional scored roles in the evaluation of projects.
- How NZTA project teams may be adjusted in recognition of this standard (a role such as a Client side information manager will be key in properly enacting the requirements of this standard).

The standard currently appears geared towards large projects in the latter stages of design. In our view there needs to be a consideration for project size and status in applying this standard – what makes sense for a large Alliance job won't necessarily make sense for a low-cost, low risk project, or for a business case.

In relation to the terminology used within the standard, the document refers to the 'Consultant/Contractor' as one party. For traditionally procured contracts it will be vital to understand who is responsible for what within the requirements of the standard.

In relation to the introduction of the new standard, we consider a staged approach to the rollout of this standard should be applied to provide time for the industry and NZTA to gear up to respond – such as application of the standard over a period of time and starting with large projects.

We are concerned that many internal NZTA staff and processes are not properly equipped to adjust to the introduction of this standard. This extends to the NOC who will presumably be required to receive and utilise this data.

Specific comments

Below we make specific comments according to the headings in the draft document.

Related standards

We suggest that that the following standards are included and referenced within the new standard:

- PAS128
- ISO 16739

Engagement and consultation

Following award of a contract based on a clear scope in the RFP, the production of a BIM Execution Plan as part of the standard Project Quality Plan documentation will be a key document in confirming expectations. The BIM Execution Plan will include an Information Management Plan. This will then be the basis of the remaining work on that project. A standard for what this document should look like and contain would be useful so that the industry approaches this in a consistent manner (potentially with reference to BIMinNZ).

Timing of delivery

The draft standard states that final as-built information must be delivered with the Practical Completion Certificate. However, in our view final as-builts can't be provided with the practical completion certificate as there needs to be recognition that things may change during defects period.

Designs and as-built deliverables

Within this section there are a number of words and phrases that we consider would benefit from clear definitions. Without clear definitions, the individual Client on each project could play a key part in determining how these types of phrases are interpreted, making these inputs difficult to price.

In particular, the use of words and phrases such as we must 'ensure' that digital transfer methods are 'appropriate' and 'resource efficient' and ensure 'no loss of information due to insufficient technical transfer methods or accompanying

guidance' particularly for 'high value' information. 'The Principal must be able to search and find transitioned documentation and records by Project, asset type and geolocation reference at a future date'.

In relation to handover of information, the definition of the project information handover format will be key to confirm up front – noting there will be a significant amount of data being transferred with each project. The application of this within a cloud-based environment needs further consideration as this may limit the amount of information requiring to be transferred.

If there is no physical data delivery then some document from NZTA confirming acceptance (quality) and internal filing (downloading) of data to release stakeholders and data providers would be required.

Technical requirements

Point 4 – the wording here suggests that all versions of files are to be handed over at the completion of a project, including all review copies. In our view better definition of this point is needed in order to confirm its intent. As it is currently written it implies this could include every single document provided for any type of review, including all drawing xrefs and report appendices. This will be extremely hard to manage, and exponentially increase the amount of data to be transferred. It is imagined this is intended for major revisions only – such as 15%, 50%, 85%, 100%, for tender, for construction, and as-built revisions.

Point 6 - While IFC 4.3 as noted here talks to an Open BIM format and outlines export file types, it can be contrary to the AMDS as they use different schemas. This requires clarification to avoid confusion.

Classified information and Māori information handover requirements

Point 5 – there is concern around confirming information requirements for any stakeholder or partner during the course of the engagement. This needs to be specified in the RFP otherwise it is impossible to price.

Minimum requirements for drawings

The requirement for drawings seems to be contrary to the move towards digital delivery. It is our view that the intent of this point should be clarified.

Point 4 – further clarity is needed in relation to this point and how far it is intended to be taken. A more appropriate approach could be to number the individual parts on a drawing and link that to an asset register which is populated directly from the model.

Minimum requirements for 3-D BIM models

Point 3 – the appropriate LoD needs to be defined in the RFP, as this has a significant cost implication. It is noted that this required LoD may vary throughout the lifecycle of a project, and that this needs to be well understood by NZTA as well as the industry at tender time.

Point 7 – further clarification is required around how PAS is to be applied to projects, including expectations that are implied here on the Engineer to verify the accuracy of as-built information which is then to be used for future projects. Consideration should also be given to changing this reference to AS 5488.1:2022.

Handover grouping structure required for PDF's and associated documentation

Note that the grouping structure needs to be confirmed at RFP stage.

In relation to the wording 'NZTA and some maintenance providers prefer files to be grouped by the LRMS – in which case discus the LRMS during the design phase', it is our view that this is not appropriate for a standard as it does not clearly define expectations.

Requirements for file naming

Clarification is required regarding how the route/reference station or georeferenced positions are applied to linear digital information such as centrelines / pavements / barriers. Conventions such as increasing / decreasing direction of travel, and an ability to identify offsets from a centreline will need to be agreed.

Appendix A

Further discussion should be sought regarding the tolerances outlined in this table, seeking clarity around potential issue such as:

- how far is this taken for sub-assets (i.e. a sign is in the right place, but the sign face has been raised above the designed level to avoid a clash on site)
- many structural elements are more important than the civil elements but they have a more relaxed tolerance level (i.e. concrete floor levels to 10mm)
- topographical survey accuracy may not be exact enough in some instances to meet these tolerances

We are concerned that a lot of additional information may be required here and associated extra work needed. This needs to be really clear in the RFP as potentially ongoing survey and continual 'clash detection' against the design model is needed with the required ongoing model updates. While this may be appropriate in some instances in large complex projects, for simpler projects this is not considered appropriate. In addition, further clarity is needed regarding model ownership (consultant or contractor) in particular under a traditional procurement approach.

We consider there needs to be clarification as to how an MSQA process fit here regarding model updates – i.e. who determines acceptance for construction and is responsible for the accuracy of the updated model, who determines when the model needs to be updated, and who manages the ongoing storage of the model.

Appendix B

In our view, clarity is needed regarding how this diagram applies to earlier stages of design as it currently does not reflect design stages earlier in the lifecycle than the back end of pre-implementation.

We also consider how trade models are picked up by this standard requires further consideration – for instance where shop drawings are obtained for specific elements.

Conclusion

Overall, we support the proposed new standard, however there are a number of areas where we would like further consideration, as outlined in this letter.

We trust these comments are helpful. We are available and willing to contribute further as NZTA further refine the proposed standard.

We would be happy to discuss any aspect of this submission.

Ngā mihi

Helen Davidson
Chief Executive