



Mandatory Inspections - A response to the Building Confidence Report

Discussion paper

2020

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Version history

Original

Publish date: 7 December 2020
Print version: 1.0

This version

Publish date: 7 December 2020
Print version: 1.0

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Mandatory Inspections

Context

Building Ministers authorised an assessment of the effectiveness of compliance and enforcement systems for the building and construction industry across Australia. The resulting [Building Confidence Report](#) (BCR) highlighted shortcomings in the implementation of the National Construction Code (NCC) and made 24 recommendations to address these issues.

The predominant goal of the BCR recommendations is to enhance public trust and confidence in the building industry, achieved through a national best practice model of building and construction standards that aim to strengthen the effective implementation of the NCC and protect the interests of those who own, work, live, or conduct their business in Australian buildings.

Recommendation 18 of the BCR proposes that each jurisdiction requires mandatory on-site inspections of building work at identified notification stages.

The BCR notes that there are significant differences across jurisdictions in the number of inspections required and the notification stages. This ranges from no mandatory inspections to very few inspections for domestic buildings, and many jurisdictions rely on the statutory building surveyor¹ to determine what inspections are appropriate for commercial buildings. This makes it difficult for regulators to know what level of oversight is occurring, whether it is adequate and if NCC compliance is being achieved. Understandably the current process doesn't provide the public with confidence in the regulatory system or in the compliance of constructed buildings.

Inspections are generally the statutory responsibility of the building surveyor but in Victoria and NSW the statutory inspection function can be delegated to a registered

¹ **Statutory building surveying work** means approval work, assessment and certifying which building approval legislation requires to be done by a registered building surveyor.

building inspector, and in some jurisdictions the building surveyor can rely on certification from other practitioners, most commonly the structural designer.

Possible concerns with the current process include:

- whether there are sufficient inspections conducted during construction to help ensure compliance with a building approval;
- whether there are sufficient numbers of suitably qualified persons to conduct inspections;
- potential conflicts of interest that might exist when a private building surveyor, who is paid by the developer, inspects the building work;
- ensuring appropriate levels of documentation are maintained to track decisions, highlight non-compliance and steps taken to rectify; and
- in the circumstance where buildings surveyors set the mandatory inspections (as is common with commercial buildings), whether appropriate inspections are nominated and conducted due to competition in pricing and service.

Matters relating to the building surveyor's role in having a potential for a conflict of interest will be considered as part of a response to BCR recommendations 9 and 11.

Purpose

BCR recommendation 18, and the need for independent checking of building work, forms part of the building approval process. Its purpose is to ensure a more robust and nationally consistent approach for minimum mandatory inspections during key notification stages of the building construction process. Inspections of building work aims to:

- ensure the building is built in accordance with the relevant approvals, plans and specifications of the design;
- ensure the building is compliant with the NCC (and any other relevant jurisdictional requirements), is suitable for occupation and use and an occupancy certificate can be issued; and
- detect any observable non-compliance issues.

The draft model process outlined in this Discussion Paper prescribes minimum mandatory inspections proportionate to building complexity (risk) as a means of improving building outcomes through greater regulatory compliance (Figure 1). The

risk based approach would also determine additional inspection stages such as those relating to specific Performance Solutions or complex commercial buildings.

This risk based approach would ensure the right amount of resources, time, effort and costs are directed to those buildings that require it. Other benefits of nationally consistent mandatory inspections and accompanying documentation includes the opportunity for standardised data collection. Data collection on inspections could be used to inform future regulatory reform in response to the identification of common non-compliances.

The draft model process also includes the identification of registered and skilled practitioners² to conduct inspections where the building surveyor lacks relevant knowledge and/or capacity. Overall, this process would help to address non-compliances that otherwise may not be detected by the building surveyor.

This draft model process (Figure 1 and Figure 2) details the proposed approach and how it is anticipated to work in practice. To address the BCR recommendation, this Discussion Paper covers the following:

- process for conducting minimum mandatory inspections;
- scope of minimum mandatory inspections including notification stages (timing), frequency and extent (percentage) of inspections;
- roles and responsibilities of the statutory building surveyor and the designer in the process; and
- documentation relating to inspections.

Application

The BCR highlights minimum inspection stages for domestic building work but acknowledges there may be the need for additional inspections relating to matters such as Performance Solutions and complex commercial buildings. The list of minimum mandatory inspections (Figure 1) has been informed by existing inspection

² BCR recommendations 1 and 2 of the [National Registration Framework](#)

requirements in the states and territories and aligns to these to the greatest extent possible, but is not based on, or identical to, any one jurisdiction.

A state or territory that currently requires mandatory inspections can assess whether its' existing process and scope of mandatory inspections:

- aligns to this draft model and would operate successfully as part of a nationally consistent approach;
- aligns approximately to this model but requires some amendments to operate successfully as part of a nationally consistent approach. In this case the jurisdiction can choose to amend their list of inspections and processes to match this draft model; or
- is not sufficiently aligned to the draft model and would not operate successfully as part of a nationally consistent approach, or has no mandatory inspections in place. In this case the jurisdiction can adopt this draft model as part of the building approval process to improve building regulatory compliance, subject to the development of model regulatory provisions agreed by Building Ministers.

A state or territory that does not have mandatory inspections can assess the introduction of the model as an alternative to the current arrangements.

Definitions

Mandatory inspection is defined as the independent assessment of building work, at the prescribed notification stages, to verify that the building work has been carried out in accordance with the approved building documentation and relevant building legislation.

Certificate of Compliance is a certificate issued by a prescribed person for a prescribed component or element of design or construction which, if accepted by the statutory building surveyor, may give the statutory building surveyor immunity in relation to the matters certified.

Question

1. This Discussion Paper proposes terminology which, if agreed by the Building Ministers, would be consolidated into a Preferred Terms Publication for adoption into state and territory laws. Current legislative terminology used across Australia has been considered when developing the proposed terminology. The agreed terminology

Question

used in the Preferred Terms Publication would not be legal definitions unless adopted by jurisdictions.

What are your views on the definition proposed for:

Mandatory inspection

Certificate of Compliance?

Process for mandatory inspections

The design and construction of buildings vary by complexity and level of life safety risk to which they expose building occupants, particularly if they are not constructed in accordance with the NCC. Under this approach (Figure 1) it is proposed that all buildings are considered in the context of the **Definition of Building Complexity (BC)** to determine the level of risk (**Attachment A**).

Figure 1 Risk based model to determine minimum mandatory inspections

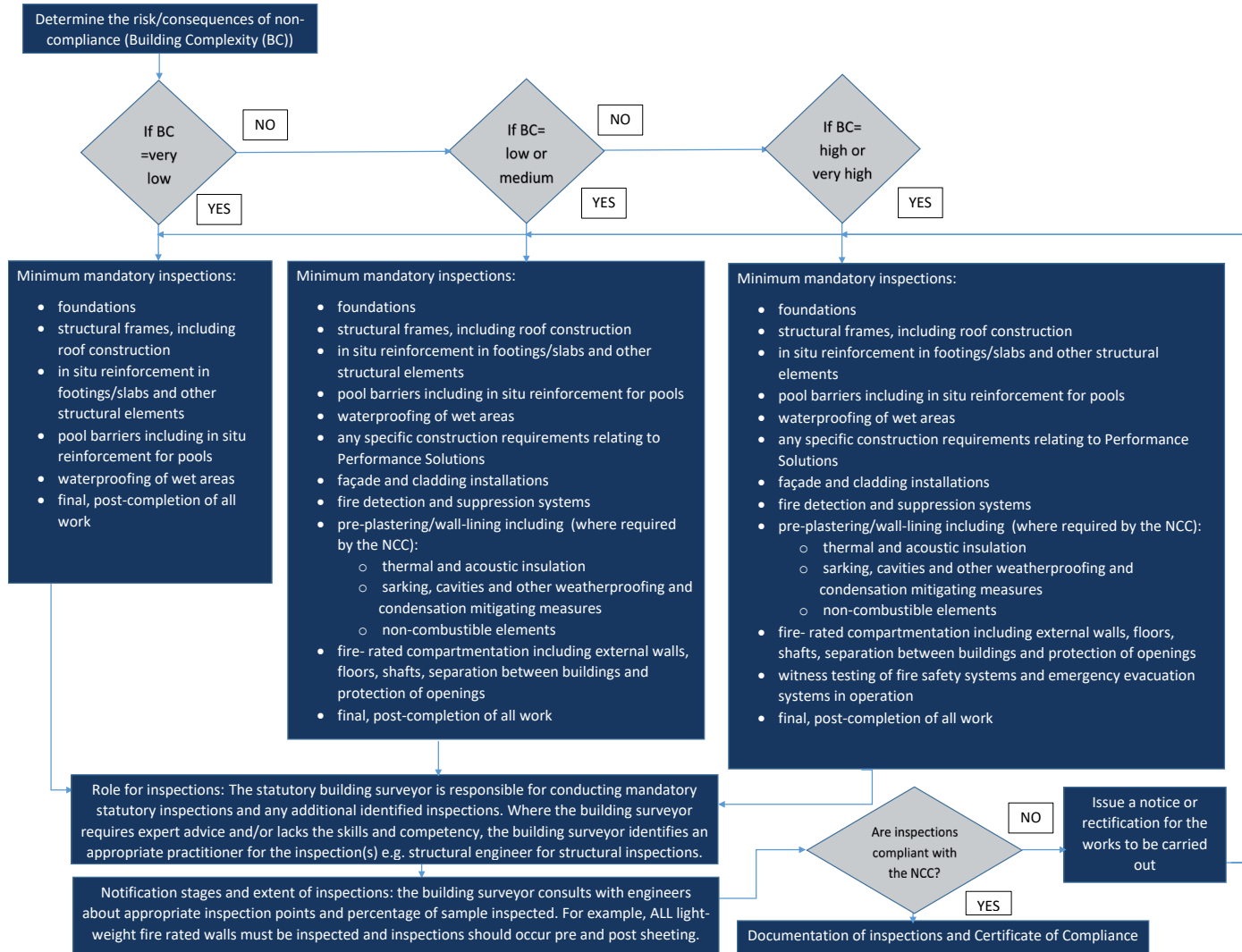
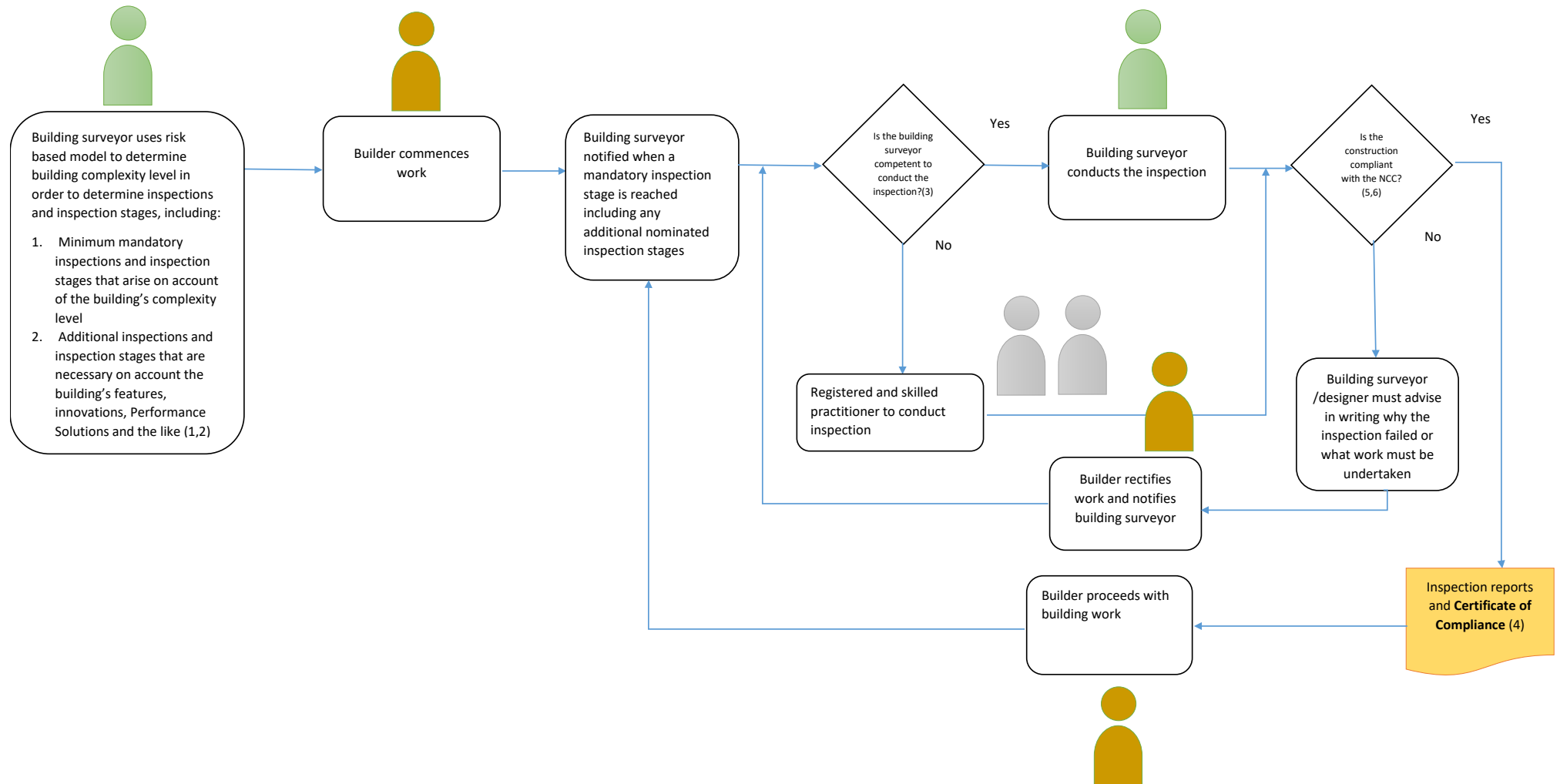


Figure 2 Process for mandatory inspections



The stages documented in Figure 2 are as follows:

1. The statutory building surveyor uses the risk based model to determine the BC level (Figure 1). The BC level assists in setting the scope of inspections (type and number of inspections including inspection stages).
 - The statutory building surveyor may determine additional inspections and inspection stages and/or consult designers/ specialists to identify additional inspections and their respective inspection stages.
2. The building approval applicant³ is provided a list of notification stages for inspections by the statutory building surveyor. This information would usually be included within the building approval documentation. It is expected that the building approval applicant would provide this information to the builder, along with all approved documentation, to enable construction of the building and to ensure the builder knows when the statutory building surveyor is to be notified for nominated inspections.
3. The statutory building surveyor conducts the inspection or may call upon a registered and competent person to conduct the inspection upon reaching an inspection stage.
4. A record of the inspection is made (using checklists or based on other instructions from the statutory building surveyor). The legislation may also provide for a Certificate of Compliance to be issued by the inspecting practitioner.
5. If work is not satisfactory, the statutory building surveyor must advise in writing why the inspection failed or what work must be undertaken before the inspection is approved.
6. Any changes that arise would need to be addressed before work can proceed.
 - Where changes to the design occur during the construction phase, the statutory building surveyor must be notified and they should in-turn consult relevant practitioners (e.g. structural engineer for structural design changes; fire safety engineer for fire safety design changes) to determine the nature and impact of the change and identify any amendments to approved documentation and additional inspections that will be required as a result of the change.

³ **Building approval applicant** is an individual who is the owner, an agent of the owner or the builder who applies for a building approval application seeking certification that a proposed building complies with the relevant building regulations and NCC.

Question

2. Do you agree the risk based model is the correct approach to identify the types of mandatory inspections for a building? If you answered no, what is an alternative approach to determine the types of mandatory inspections for a building? (Note: each complexity level prescribes minimum mandatory inspections to be carried out.)

Determining minimum mandatory inspections

The flowchart at Figure 1 proposes a list of inspections based on the existing inspection regimes in the jurisdictions. It groups BC levels to create three inspection tiers. It sets out the minimum mandatory inspections listed in the BCR and builds on the list to include mandatory fire safety inspections as highlighted in BCR Recommendation 19. Additional inspections are added as the BC, and therefore, the risk and consequences increase. The statutory building surveyor should also consult with the designers regarding necessary inspection points and may request additional inspections beyond the prescribed mandatory list. Additional inspections may be required on account of the complexity of the design, design innovation, the nature of Performance Solutions and the inclusion of critical elements in the building that have the potential to impact life safety.

Question

3. Should there be minimum mandatory inspections for commercial buildings or should the minimum inspections be determined at the discretion of the statutory building surveyor?

Question

4. Do you agree on the list of mandatory inspections for each BC level? Are there any other inspections that should be included as part of this list of minimum mandatory inspections?

Table 1 Minimum mandatory inspections for different BC levels

Very low BC	Low or medium BC	High or very BC
foundations	foundations	foundations

Question		
structural frames, including roof construction	structural frames, including roof construction	structural frames, including roof construction
in situ reinforcement in footings/slabs and other structural elements	in situ reinforcement in footings/slabs and other structural elements	in situ reinforcement in footings/slabs and other structural elements
pool barriers including in situ reinforcement for pools	pool barriers including in situ reinforcement for pools	pool barriers including in situ reinforcement for pools
waterproofing of wet areas	waterproofing of wet areas	waterproofing of wet areas
final, post-completion of all work	any specific construction requirements relating to Performance Solutions	any specific construction requirements relating to Performance Solutions
foundations	façade and cladding installations	façade and cladding installations
	fire detection and suppression systems	fire detection and suppression systems
	pre-plastering/wall-lining including (where required by the NCC): <ul style="list-style-type: none"> - thermal and acoustic insulation - sarking, cavities and other weatherproofing and condensation mitigating measures - non-combustible elements 	pre-plastering/wall-lining including (where required by the NCC): <ul style="list-style-type: none"> - thermal and acoustic insulation - sarking, cavities and other weatherproofing and condensation mitigating measures - non-combustible elements
	fire- rated compartmentation including external walls, floors, shafts, separation between buildings and protection of openings	fire- rated compartmentation including external walls, floors, shafts, separation between buildings and protection of openings
	final, post-completion of all work	witness testing of fire safety systems and emergency evacuation systems in operation
		final, post-completion of all work

Question

- 5. Do you think all the parts of the fire safety systems have been identified for minimum mandatory inspections? Are there any additional critical fire safety inspections or tests that you would include in the list? If you identified additional fire safety inspections or tests, please provide.**

Who conducts the inspections

The statutory building surveyor engaged to perform the statutory building approval function is responsible for conducting the mandatory statutory inspections that arise on account of the BC level, and any additional required inspections.

The statutory building surveyor is accountable to the state or territory building regulator and is required to act in the public interest at all times. It would be an offence and a breach of their statutory duty of care and code of conduct, their ability to be a licensed professional and their professional indemnity insurance if they:

- undertake inspections when the inspections are beyond their competency or expertise;
- undertake inspections when there is a conflict of interest (pecuniary, professional or private interest for personal gain);
- fail to undertake mandatory inspections when requested by the building approval applicant;
- perform poor quality inspections such as a reduced number of inspections due to reasons such as cost/time;
- do not address non-compliance issues detected; and
- do not inform the building regulator of significant non-compliances.

Where the statutory building surveyor requires expert advice and/or lacks the skills and competency, the statutory building surveyor would be required to engage an appropriate practitioner to undertake the relevant inspection(s) (e.g. a structural engineer for structural inspections). This could also include an independent building surveyor (independent building inspectors in NSW and Vic), independent designer, a designer who participated in the design phase of the building, or government

approved registered practitioners. It is expected that the practitioner is registered by the jurisdiction in which they are operating and meets the qualifications and experience requirements listed in BCR recommendations 1 and 2 of the [National Registration Framework](#) to be qualified to conduct the inspections.

The following table summarises the roles of the statutory building surveyor and the designer/ consultant specialist in the process of mandatory inspections.

Table 2 Roles and responsibilities

Roles and responsibilities	
Statutory building surveyor	
1.	Determine inspections based on the process set out in Figure 1.
2.	May consult the designer to determine additional inspection points, frequency and portion of the construction inspected.
3.	Must list type and notification stages of mandatory inspections within the building approval documentation.
4.	Upon being notified of reaching a mandatory notification stage as detailed in the building approval, must cause that inspection to be carried out.
5.	If the inspector identifies non-compliant work, must issue a written direction for building work to be brought into compliance where deemed necessary as a result of the inspection.
6.	Must notify the regulator if the building approval applicant has failed to notify the statutory building surveyor of a mandatory notification stage.
7.	Must issue enforcement notices if work proceeds past a notification stage where a direction to fix has not been complied with, and notify the regulator and also notify the building approval applicant.
8.	May require demolition or destructive testing where work has been covered up or compliance is not readily apparent.
9.	Must notify the building approval applicant if the construction is altered from the approved design and request updated documentation for review.
10.	May require or cause an inspection of complex building work (e.g. suspended in situ slab) to be carried out by another person (e.g. the designer/ consultant specialist).
11.	Where another person is to inspect, must ensure that person holds the relevant registration and has the experience to undertake the inspection.

Roles and responsibilities

12. Must issue the inspection report and Certificate of Compliance, or review the inspection report and Certificate of Compliance (to ensure these are completed correctly) where another person has conducted the inspection.

Designer/ consultant specialist

1. The designer or a competent registered person must consult with the statutory building surveyor, if requested, to assist in determining the mandatory inspection stages.
 2. The designer or a competent registered person, if carrying out an inspection, must seek and obtain instructions from the statutory building surveyor about the process and procedure for documenting the inspection prior to carrying out a mandatory inspection for and on behalf of the statutory building surveyor.
 3. An inspection must be carried out by a person who is a registered building practitioner in the relevant discipline.
 4. The inspecting designer or competent registered person must inspect the building work for compliance with the issued building approvals.
 5. The inspecting designer or competent registered person must notify the statutory building surveyor in writing of any non-complying elements of construction and must not authorise building work to continue until non-compliances are resolved.
 6. Whilst the designer or competent registered person may be engaged by the building approval applicant, they are actually carrying out the inspection in a statutory capacity for, and on behalf of, the statutory building surveyor and not for the building approval applicant.
 7. The person must submit a completed inspection report and Certificate of Compliance certifying that the building work complies with the issued building approval documentation.
-

Question

6. **Who do you believe is competent to conduct the inspections? Do higher BC levels require independent inspectors (note the BCR highlights issues with regards to conflict of interest and competency issues)?**

Question

Table 3 Practitioners suited to conduct inspections for different BC levels

BC level	Appointed statutory building surveyor	Independent building surveyor	Independent designer and/or consultant	Designer who participated in the building design	Fire systems installers ⁴	Other
Very low						
Low						
Medium						
High						
Very high						

When are inspections conducted (notification stages)

Inspections are conducted after the commencement of building work and when the work reaches notification stages. The purpose of the inspection is to determine that construction has been undertaken in accordance with the building approval documentation.

The statutory building surveyor would identify key notification stages for the minimum mandatory inspections and may consult with appropriate practitioners about appropriate inspection points (timing) as well as any additional inspections. Some examples of notification stages include: footings prepared prior placement of concrete; structural framework complete prior sheeting; wet areas prepared prior application of waterproofing membrane; wet area membranes applied prior tiling;

⁴ Fire systems installers are proposed as a discipline under the National Registration Framework to undertake inspections of fire safety systems

wet area inspections before and after the membrane is in place; and lightweight fire-rated wall systems must be inspected if used to achieve NCC compliance both at pre and post sheeting stages.

Question

7. Who do you think is best placed to determine notification stages (timing of inspections)?

Table 4 Practitioners to identify notification stages for different BC levels

BC level	Appointed statutory building surveyor	Independent building surveyor	Independent designer and/or consultant	Designer who participated in the building design	Fire systems installers	Other
Very low						
Low						
Medium						
High						
Very high						
If you chose 'Other' please include the proposed practitioner and BC level.						

What percentage of the construction is inspected

The statutory building surveyor can determine the sample size (percentage) for each type of inspection based on expertise and complexity of the building construction, or on advice from the designer. For example, the statutory building surveyor should determine whether every wet area’s waterproofing in a multi-storey apartment building needs to be checked, or only a percentage of the wet area waterproofing. The statutory building surveyor may consult others practitioners, such as the designer, and work with them to determine the percentage inspected. It is recommended that a greater percentage of the construction should be inspected for buildings with greater BC levels.

Question

8. What percentage of the building construction should be inspected for the inspections listed? (For example, should ALL or only a percentage of the footings be inspected at the excavation stage and again once the steel reinforcement has been put into place?) Should there be guidance on determining the percentage that must be followed? The guidance might have a sliding scale of percentage based on storeys or similar.

It is recommended that higher BC levels have a greater percentage of the construction inspected.

Table 5 Percentage of construction inspected

BC level	0-50% of the building construction	100% of the building construction	Statutory building surveyor can exercise judgement on how much of the building construction must be inspected	Designer prescribes the percentage of inspection as a guideline for the statutory building surveyor	Other
Very low					
Low					
Medium					
High					
Very high					
If you chose 'Other' please explain the suggested approach and BC level.					

Question

9. Do you think there are elements where there needs to be multiple inspections for the same element. For example, in the case of a lightweight fire rated wall should inspections occur pre and post sheeting? If so, nominate elements and suggested multiple inspection stages.

What documentation/record keeping is required

Detailed documentation is needed to demonstrate to the building regulator that the work completed is compliant with the approved building document. Inspection reports should detail:

- date of inspection;
- who completed the inspection;
- who was present for the inspection;
- details of the site, the building and the relevant building approval;
- the scope of the inspection with details of any specific inclusions and exclusions;
- the compliance of the feature(s) inspected with the NCC and the endorsed design documentation, including details of any areas of non-compliance;
- the outcome(s) of the inspection, including any alteration or rectification that needs to be made to the construction as a result; and
- information on whether a reinspection is required.

Inspection reports should form part of the building approvals documentation that is submitted to the regulator, and copies should be retained by both the statutory building surveyor and the building approval applicant. A copy of the inspection report should also be sent to the owner where they are not the applicant.

Certificates of Compliance should also be provided certifying that the inspector reasonably believes that the work inspected complies with the NCC. These could be incorporated into or attached to the inspection report.

What happens in the event of non-compliance

Where non-compliance issues have been identified the inspection should not be recorded as satisfactory. The statutory building surveyor must issue a direction to fix and provide guidance on what steps need to be taken to address the issue (e.g. changes to the construction to reflect the building approval and re-inspection or additional documentation demonstrating compliance with the NCC for approval). The details for documenting non-compliance are outlined in the discussion paper on [BCR recommendations 13-16](#). The draft datasets for recommendations 12 and 20 include

inspection records, which would be expected to include details of non-compliance and the regulatory response.

The section on **'Who conducts the inspections'** explains the various roles in the process of ensuring compliance, including the statutory building surveyor who is bound by a code of conduct (BCR recommendation 10) to ensure inspections are carried out to the required standard and non-compliance issues are addressed. In order for the process of inspections to be fully effective, the enforcement actions of building surveyors need to be coordinated with the regulatory powers and functions of the state or territory government.

Question

10. Does the proposed approach address all the issues related to mandatory inspections? If you answered no, what items are missing to ensure mandatory inspections are compliant and meet the requirements of BCR Recommendation 18?

All questions

Question 1: This Discussion Paper proposes terminology which, if agreed by the Building Ministers, would be consolidated into a Preferred Terms Publication for adoption into state and territory laws. Current legislative terminology used across Australia has been considered when developing the proposed terminology. The agreed terminology used in the Preferred Terms Publication would not be legal definitions unless adopted by jurisdictions.

What are your views on the definition proposed for:

Mandatory inspection

Certificate of Compliance?

Question 2: Do you agree the risk based model is the correct approach to identify the types of mandatory inspections for a building? If you answered no, what is an alternative approach to determine the types of mandatory inspections for a building? (Note: each complexity level prescribes minimum mandatory inspections to be carried out.)

Question 3: Should there be minimum mandatory inspections for commercial buildings or should the minimum inspections be determined at the discretion of the statutory building surveyor?

Question 4: Do you agree on the list of mandatory inspections for each building complexity (BC) level? Are there any other inspections that need to be included as part of this list of minimum mandatory inspections (specify BC level)?

Table 1 Minimum mandatory inspections for different BC levels

Very low BC	Low or medium BC	High or very BC
structural frames, including roof construction	structural frames, including roof construction	structural frames, including roof construction
foundations	foundations	foundations
in situ reinforcement in footings/slabs and other structural elements	in situ reinforcement in footings/slabs and other structural elements	in situ reinforcement in footings/slabs and other structural elements
pool barriers including in situ reinforcement for pools	pool barriers including in situ reinforcement for pools	pool barriers including in situ reinforcement for pools
waterproofing of wet areas	waterproofing of wet areas	waterproofing of wet areas
final, post-completion of all work	any specific construction requirements relating to Performance Solutions	any specific construction requirements relating to Performance Solutions

Very low BC	Low or medium BC	High or very BC
	façade and cladding installations	façade and cladding installations
	fire detection and suppression systems	fire detection and suppression systems
	pre-plastering/wall-lining including (where required by the NCC): <ul style="list-style-type: none"> - thermal and acoustic insulation - sarking, cavities and other weatherproofing and condensation mitigating measures - non-combustible elements 	pre-plastering/wall-lining including (where required by the NCC): <ul style="list-style-type: none"> - thermal and acoustic insulation - sarking, cavities and other weatherproofing and condensation mitigating measures - non-combustible elements
	fire- rated compartmentation including external walls, floors, shafts, separation between buildings and protection of openings	fire- rated compartmentation including external walls, floors, shafts, separation between buildings and protection of openings
	final, post-completion of all work	witness testing of fire safety systems and emergency evacuation systems in operation
		final, post-completion of all work

Question 5: Do you think all the parts of the fire safety systems have been identified for minimum mandatory inspections? Are there any additional critical fire safety inspections or tests that you would include in the list? If you identified additional fire safety inspections or tests, please provide.

Question 6: Who do you believe is competent to conduct the inspections? Do higher BC levels require independent inspectors (note the BCR highlights issues with regards to conflict of interest and competency issues)?

Table 3 Practitioners suited to conduct inspections for different BC levels

BC level	Appointed statutory building surveyor	Independent building surveyor	Independent designer and/or independent consultant	Designer who participated in the building design	Fire systems Installer	Other
Very low						
Low						
Medium						
High						
Very high						

Question 7: Who do you think is best placed to determine notification stages (timing of inspections)?

Table 4 Practitioners to identify notification stages for different BC levels

BC level	Appointed statutory building surveyor	Independent building surveyor	Independent designer and/or independent consultant	Designer who participated in the building design	Fire systems Installer	Other
Very low						
Low						
Medium						
High						
Very high						

If you chose 'Other' please include the proposed practitioner and BC level.

Question 8: What percentage of the building construction should be inspected for the inspections listed? (For example, should ALL or only a percentage of the footings be inspected at the excavation stage and again once the steel reinforcement has been put into place?) Should there be guidance on determining the percentage that must be followed? The guidance might have a sliding scale of percentage based on storeys or similar.

It is recommended that higher BC levels have a greater percentage of the construction inspected.

Table 5 Percentage of construction inspected

BC level	0-50% of the building construction	100% of the building construction	Statutory building surveyor can exercise judgement on how much of the building construction must be inspected	Designer prescribes the percentage of inspection as a guideline for the statutory building surveyor	Other
Very low					
Low					
Medium					
High					
Very high					

If you chose 'Other' please explain the suggested approach and BC level.

Question 9: Do you think there are elements where there needs to be multiple inspections for the same element. For example, in the case of a lightweight fire rated wall should inspections occur pre and post sheeting? If so, nominate elements and suggested multiple inspection stages.

Question 10: Does the proposed approach address all the issues related to mandatory inspections? If you answered no, what items are missing to ensure mandatory inspections are compliant and meet the requirements of BCR Recommendation 18?

ATTACHMENT A

Proposed approach

The risk based model would use the **Definition of Building Complexity (Building Complexity)**. **Building Complexity** means those attributes that increase the likelihood of non-compliance, and situations where the consequences for safety and/or health of non-compliance would be significant.

Building Complexity criteria are used to determine whether all or part of a *building* is low, medium, high or very high building complexity. The Building Complexity criteria are:

- A) **Attributes** – the building is designed or constructed with any of the following sub-criteria:
 - i) an *effective height* of more than 25 metres;
 - ii) one or more *Performance Solutions* used to demonstrate compliance with *Performance Requirements* relating to material and systems for structural safety;
 - iii) With one or more *Performance Solutions* used to demonstrate compliance with *Performance Requirements* relating to material and systems for fire safety;
 - iv) in an area prone to natural disaster or adverse environmental conditions;
- B) **Class 2** – all or part of the *building* is *Class 2* of three or more *storeys*;
- C) **Occupant numbers** – the *building* is to be occupied by more than 100 people determined in accordance with D1.13 (NCC Volume One);
- D) **Occupant characteristics** – the *building* is to be occupied by more than 10 people who will require assistance to evacuate the building in an emergency;
- E) **Building Importance Level 4** – the *building* is determined to be *Building Importance Level 4* under B1.2a (NCC Volume One).

The results of applying the criteria are then used to determine the building complexity level. This is done as follows:

Low building complexity is where a *building* meets one only of *building complexity criteria* A (Attributes), B (Occupant numbers), C (Occupant characteristics) or D (Class 2).

Medium building complexity is where a *building* meets two of *building complexity criteria* A (Attributes), B (Occupant numbers), C (Occupant characteristics) or D (Class 2).

High building complexity is where a *building* meets three of *building complexity criteria* A (Attributes), B (Occupant numbers), C (Occupant characteristics) or D (Class 2).

Very high building complexity is where a *building* meets:

- i) *building complexity criteria* A (Attributes), B (Occupant numbers), C (Occupant characteristics) and D (Class 2); or
- ii) *building complexity criteria* E (Building Importance Level 4).

For the purposes of this paper, if a building does not meet any of the criteria, it will be considered to be of very low building complexity.

Examples of buildings for each risk level:

- **Low:** typical single family home in a fire prone area; a warehouse with a Performance Solution related to material or systems for structural or fire safety;
- **Medium:** a single use office building with an effective height of over 25m and/or Performance Solutions related to material or systems for structural or fire safety, and over 100 occupants;
- **High:** an apartment building of over three storeys with Performance Solutions related to material or systems for structural or fire safety, and over 100 occupants, such as Lacrosse, Mascot Tower, or the Forte Building; a small hospital in a cyclone area, for over 100 occupants and over 10 occupants who will need assistance to evacuate.
- **Very high:** a multiple use building including an apartment building of over three storeys, with Performance Solutions related to material and systems for structural or fire safety, over 100 occupants and over 10 occupants who will require assistance to evacuate, such as the Opal Tower which has a child care facility; or buildings essential to post-disaster recovery or associated with hazard facilities (i.e. *Building Importance Level 4*) such as an emergency services facility, a major hospital, or a gas fired power plant.