GOVERNMENT OF WESTERN AUSTRALIA

Department of **Energy, Mines, Industry Regulation and Safety**

Building and Energy Western Australia

# Compliance Inspection Report Four

## Technical building surveying inspections (Class 2-9 Approval Certificates) 2021-2023

# Contents

## Glossary of terms, acronyms, and abbreviations

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| **Accessible** | Having features that enable use by people with a disability. |
| **Applicable building standards** | In general, the applicable building standards for proposed building work is the BCA. |
| **BCA** | Building Code of Australia (volumes 1 and 2 of the National Construction Code). |
| **Building Classification** | A categorisation system for buildings of similar risk levels based on use, hazard, and occupancy. |
| **Building and Energy** | The Building and Energy division of the Department of Energy, Mines, Industry Regulation and Safety. |
| **Building Services Acts** | A suite of laws governing building control. |
| **Building Permit** | Permission granted by the permit authority for building work to be conducted. |
| **Building Regulations** | Building Regulations 2012 (WA). |
| **Building surveyor contractor** | Registered individuals, partnerships or companies that undertake to carry out building surveying work and issue approved certificates. |
| **Building Surveyor Practitioner** | Registered individuals that conduct building surveying work. They cannot issue a certificate but can be a nominated supervisor for a building surveyor contractor. |
| **CCC** | A certificate of construction compliance (CCC) is an approved form issued by a building surveying contractor. It is required to obtain an occupancy permit from the permit authority to occupy a newly completed Class 2 to Class 9 building or a newly completed part of the building. |
| **CDC** | A certificate of design compliance (CDC) is an approved form issued by a building surveying contractor. It is required to obtain a building permit from the permit authority to construct a building or incidental structure. |
| **CRA Act** | *Building Services (Complaint Resolution and Administration) Act 2011* (the CRA Act) |
| **Compliance Demonstrated** | The design documentation includes sufficient information to demonstrate compliance with the applicable building standards. (This information may have been provided in the form of drawings or included or described in specifications or other technical documents including performance solutions). |

| | |
|---|---|
| **Compliance not Demonstrated** | The design documentation does not include sufficient information to demonstrate compliance with the applicable building standards or the information provided clearly demonstrates non-compliance with the applicable building standards. |
| **Deemed-to-Satisfy (DTS)** | Provisions that are deemed-to-satisfy the Performance Requirements of the BCA of Australia. |
| **Design Criteria** | These criteria form the basis of the design for the structural and other components and systems for the building and are based on the use, scale, and location of the building. |
| **Design Documentation** | Drawings, specifications, and technical documents referenced on a certificate of design compliance that demonstrate compliance with the building standards. |
| **DEMIRS** | Department of Energy, Mines, Industry Regulation and Safety. |
| **Emergency Lighting** | Lighting provided in a building to aide safe evacuation during an emergency. |
| **NCC** | National Construction Code. |
| **Evidence of Suitability** | Evidence that supports that the use of the material, product, form of construction or design meets a Performance Requirement or a Deemed-to-Satisfy Provision of the NCC BCA. |
| **Permit Authority** | Unless otherwise usually prescribed the local government in whose district the building or incidental structure is, or is proposed to be, located. |

# Executive summary

Under the *Building Services (Complaint Resolution and Administration) Act 2011* (the CRA Act) the Building Commissioner can audit the work and conduct of registered building service providers.

The Department of Energy Mines, Industry Regulation and Safety – Building and Energy Division (Building and Energy) has an audit program to monitor whether registered building surveyors are complying with their registration requirements and if technical building surveying work is meeting the applicable building standards.

The findings of these audits are used to educate building industry participants and inform policy development. Where non-compliant outcomes are identified during an audit, the matter is brought to the attention of the building surveyor, and in high-risk instances, evidence of any required correction or building remediation must be provided to Building and Energy.

### Findings

During the 2021-23 period, Building and Energy conducted compliance inspections of work samples of registered building surveyor contractors. The main component of these inspections was a technical review of 80 instances of approvals documentation that the building surveyor had relied upon to confirm compliance with the applicable building standards.

The 80 completed inspections included 3,951 inspection points reviewed across 68 inspections of certificates of design compliance (for building permits), and 12 certificates of construction compliance (for an occupancy permits). All certificates related to class 2-9 buildings.

Of this sample size, 78 per cent for certificates of design compliance and 70 percent for certificates of construction compliance reviewed were determined as demonstrating the requisite levels of compliance. Areas identified with low compliance rates during the inspection were:

- Structural provisions;
- access for people with disability;
- light and ventilation;
- energy efficiency; and
- relocatable buildings.

### Actions

In addition to presenting the findings to registered building surveyors, Building and Energy will liaise with structural engineers through their industry body regarding the findings relating to structural provisions.

Building and Energy will also publish an industry bulletin outlining the compliance requirements for relocatable buildings, conduct a general inspection of disability access for class 2-9 buildings and continue the review of certificates of design and construction compliance.

# 1. Background

In July 2021, Building and Energy published its 2021-24 Audit Strategy. The Audit Strategy takes a risk-based approach to minimising harm, and the associated Audit Priorities Statement 2022-2023 details the compliance activities Building and Energy intends to undertake within a defined period in response to identified areas of construction that pose the greatest risk to public safety.

Compliance inspections of the technical aspects of certificates of compliance for class 2-9 buildings issued by registered building surveyor contractors, were included in the audit priorities for the 2021-2022 and 2022-2023 financial years. The documentation referenced in these certificates has been relied on by the building surveyor practitioner to confirm compliance with the applicable building standards.

Currently, there are 85 registered building surveyor contractors and 571 registered building surveying practitioners who work in either Local Government Permit Authorities or in private practice for building surveyor contractors.

Building surveyor contractors and building surveyor practitioners are registered under the *Building Services (Registration) Act 2011* (WA)[1]. Registration can be in one of the following three classes depending on qualification and experience:

- Level 1: Unlimited – work in respect of any building or incidental structure.
- Level 2: Limited – work in respect of Class 1 or Class 10 buildings or incidental structures or Class 2 to 9 buildings or incidental structures with a floor area up to 2,000m$^2$ and not more than 3 storeys in height.
- Technician (Level 3): Limited – work in respect of Class 1 or Class 10 buildings or incidental structures or Class 2 to 9 buildings or incidental structures with a floor area up to 500m$^2$ and not more than two storeys in height.

Building surveyor contractors may be individuals, partnerships or companies registered as Level 1 or Level 2 stated above, and may enter into contracts to provide building surveying services for:

- The examination of plans and specifications for a building or incidental structure to assess the safety, accessibility, and energy efficiency of a building or incidental structure if the building or incidental structure is built in accordance with the plans and specifications; and
- the examination of an existing building or incidental structure to assess the safety, accessibility, and energy efficiency of the building or incidental structure.

This generally results in the issuing of approved certificates (CDC or CCC). Building surveyor practitioners may be employed by and hold the role of nominated supervisor for building surveyor contractors but may not themselves as individuals enter the contracts mentioned above.

Building and Energy has previously reviewed certificates of design (CDC) and construction compliance (CCC) issued by building surveyor contractors, as a whole or in part, during general and compliance inspections relating specifically to class 7b and 8 buildings in 2020-2021 and during the statewide cladding audit between 2017 and 2020.

# 2. Objective and scope

## 2.1 Objective

The objective of Building and Energy's compliance inspections is to monitor the work and conduct of building surveying contractors and to determine if all the requirements for registration are being met.

Additionally, this compliance inspection activity intends to:

- Inform the profession and industry of areas requiring improvement in the demonstration of applicable building standards through the certification of buildings with a focus on high-risk areas.
- Provide advice and assistance to registered building surveyors.
- Address non-compliant building surveyor work.
- Provide recommendations to improve compliance.
- Refer serious non-compliance for consideration of enforcement action.

## 2.2 Scope

Building and Energy's Audit Priorities Statement 2021-2022 listed technical building surveying inspections, and this was continued in the 2022-2023 statement.

Technical building surveying inspections for this period included the review of building surveying work carried out by building surveyor contractors completed 12 months prior to the audit priorities statements being published. Specifically, this included the review of CDCs and CCCs issued by building surveyor contractors for class 2-9 buildings and the technical inspection of drawings, specifications and technical documents referenced on those certificates.

# 3. Methodology

## 3.1 Compliance inspections

Compliance inspections are conducted pursuant to powers under Section 64 of the CRA Act and focus on the registered building service provider.

In line with the Audit Priorities, Building and Energy chooses building surveyor contractors for a compliance inspection based on a combination of random and targeted selections. Random selections include building surveyor contractors who have not been the subject of a compliance inspection in the previous 3 years, while targeted selections are data driven and informed by complaints and referrals regarding concerns of suspected non-compliance.

A compliance inspection of building surveyor contractors commences with a review of regulatory obligations fulfilment and is followed by a technical assessment of selected approval certificates issued by the building surveyor contractor.

The regulatory component of the compliance inspection reviews the building surveyor contractor's performance against, and understanding of, regulatory obligations including eligibility, financial capacity and management and supervision.

For the technical element of the compliance inspection, Building and Energy technical officers gather and review all referenced documentation listed on an approval certificate against the applicable building standards. For this purpose, Building and Energy have developed a software-based review system which consists of all inspection points that may be applicable during a technical inspection (see Appendix A).

Each applicable inspection point is carefully considered by Building and Energy technical staff and a determination is made as to whether compliance with the applicable building standards has been demonstrated or not. Inspection points that have not demonstrated compliance are then risk ranked using a risk matrix (see Appendices D & F).

Once the inspection is finalised, a report is generated for each site. Reports are provided to the building surveyor contractor at the completion of the compliance inspection. The report documents inspection points that have been identified as not demonstrating compliance along with the allocated risk ranking.

In instances where the allocated risk level is 'very low' or 'low', the items identified in the report are brought to the building surveyor contractors' attention to address in future certifications and to assist in understanding obligations.

Where the allocated risk level is 'medium', the building surveyor contractor is required to ensure that procedures are put in place to guarantee that compliance is adequately demonstrated in future certifications.

Where the allocated risk level is 'high' the building surveyor contractor is required to provide evidence to Building and Energy technical staff that procedures will be put in place to ensure that the items which are of concern will not be repeated on future certifications. Additionally, for high-risk items, evidence is required to be supplied advising actions taken to remedy non-compliances.

The possible outcomes of compliance inspections of building surveyor contractors can include:

- Provision of advice and assistance to registered building surveyors,
- action to address non-compliant building surveying work,
- recommendations to improve compliance; and
- internal referral of serious non-compliance for consideration of enforcement action.

# 4. Summary of inspections and findings

## 4.1 Extent of inspections

In the 2021-2023 period, Building and Energy conducted 80 technical inspections of building surveying work sourced from compliance inspections of 11 building surveyor contractors in metropolitan and regional areas.

This involved the technical inspection of 68 CDCs and 12 CCCs for new and altered class 2-9 buildings. Where possible, the selected CCCs related to a CDC that had also been selected for inspection.

The range of building classifications reviewed is shown in figure 1 below.

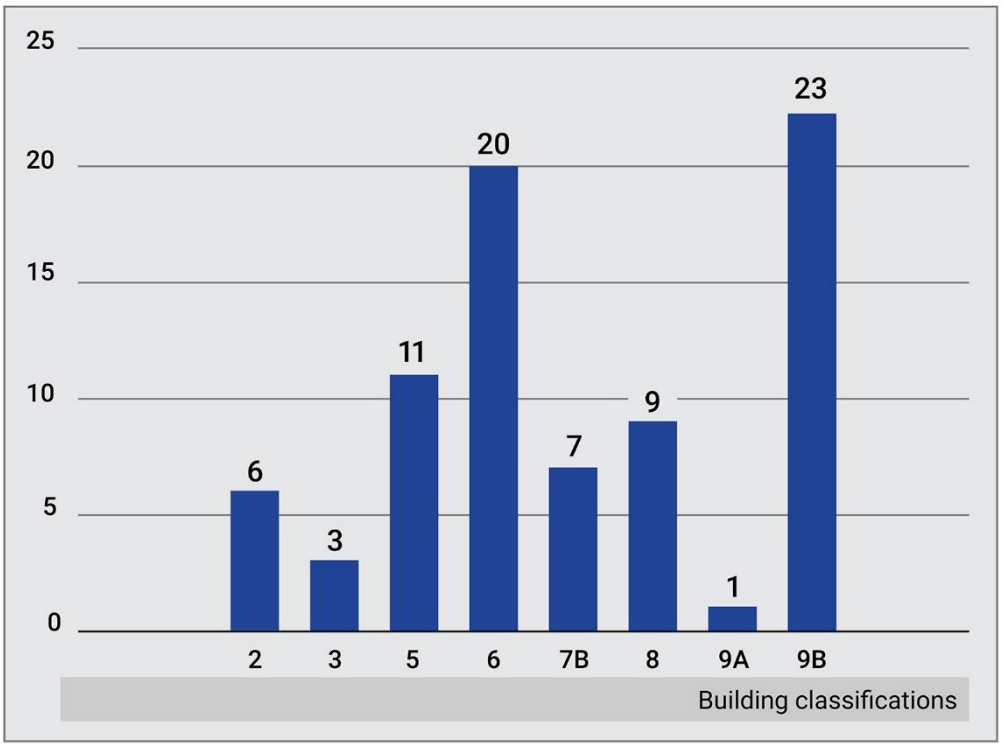


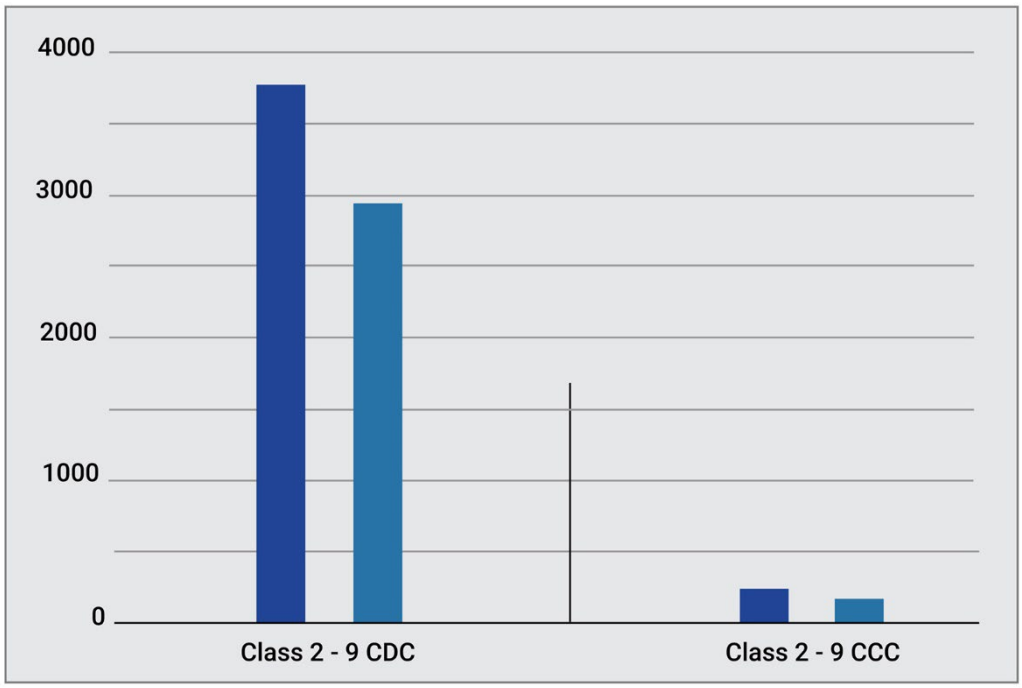

Figure 1: Building classification data.

## 4.2 Summary of technical inspection findings

During the 68 technical inspections of CDCs, a total of 3,769 inspection points were assessed by Building and Energy technical officers. Of these, 2,925 inspection points (78 percent) were assessed as having demonstrated compliance.

During the 12 technical inspections of CCCs, a total of 182 inspection points were assessed by Building and Energy technical officers. Of these, 137 inspection points (70 percent) were considered to have demonstrated compliance.

Figure 2 below shows overall compliance percentages for each approval certificate type. Detailed compliance findings for inspection points are set out in Appendix A and Appendix B.




| | Class 2 - 9 CDC | Class 2 - 9 CCC |
|---|---|---|
| Inspection points (total) | 3769 | 182 |
| Inspection points (Compliance demonstrated) | 2925 | 137 |

Figure 2: Overall compliance demonstrated rates per certificate 2021-2023.

## 4.3 Findings by categories of building surveying work

The findings revealed a variation of compliance rates between categories (see figures 3 and 4). The figures shown are percentages indicating where an inspection item is applicable, and compliance has been demonstrated in the documentation referenced on the approval certificate.

Technical reviews of CCCs included a review of the certificate and the referenced technical documents by Building and Energy technical officer but did not include a site inspection.

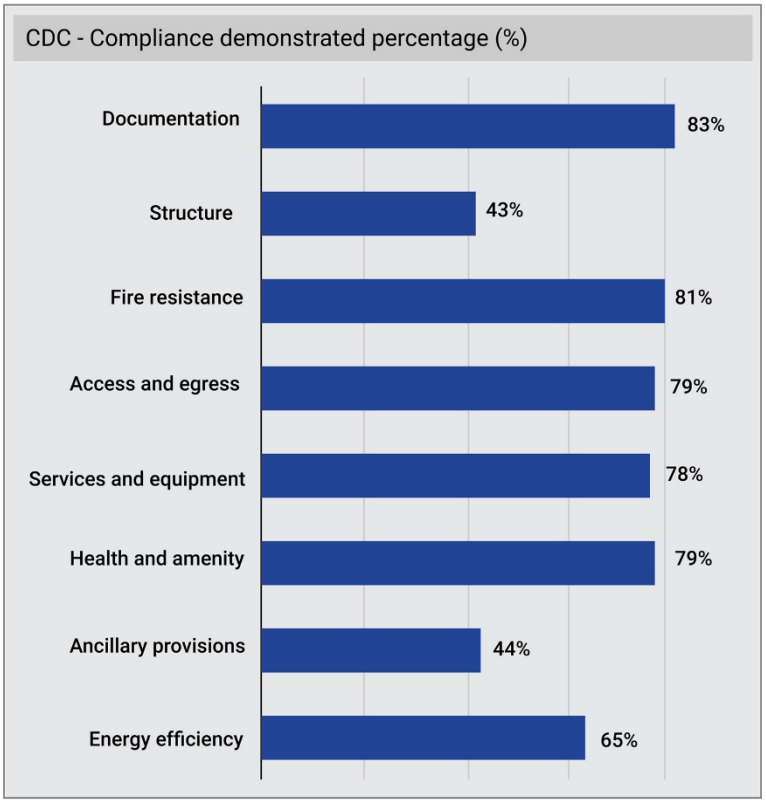



Figure 3: Class 2-9 – CDC Compliance

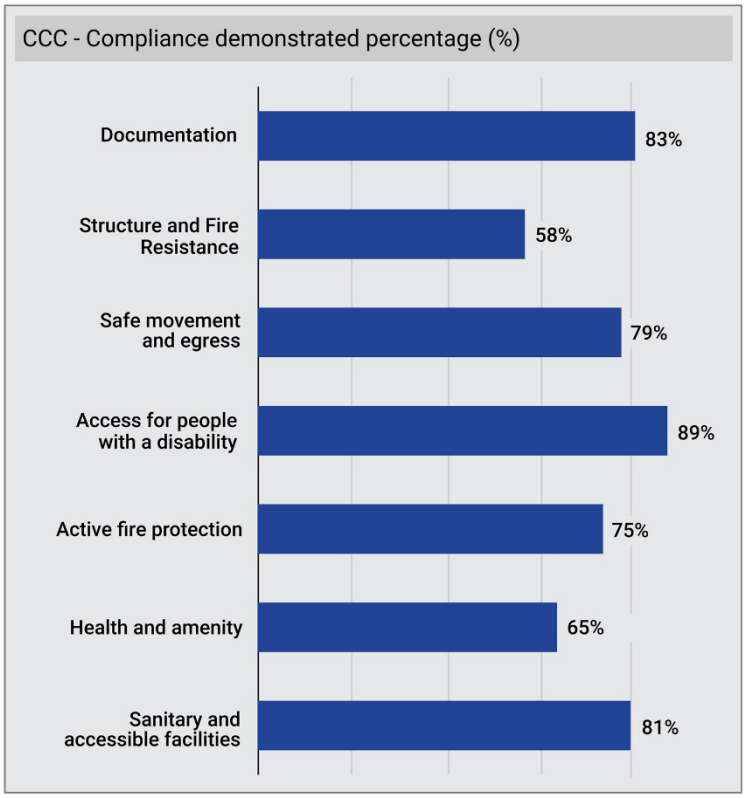



Figure 4: Class 2-9 – CCC Compliance

# 5. Class 2-9 Certificate of Design Compliance (CDC) – areas requiring attention

The following compliance categories were identified as areas requiring attention during the compliance inspection of CDCs, due to the recorded rate of demonstrated compliance.

## 5.1 Structural provisions

Ensuring that the structural provisions of the NCC have been correctly considered and incorporated into the design documentation is an essential part of ensuring the structural integrity of the building.

While there is not an expectation for building surveyors to review structural designs and calculations for correctness; ensuring that the designs have been produced using the correct applicable criteria for the building type, locality and conditions is considered part of the building surveyor's role.

The demonstration of the individual action provisions, including permanent and imposed loads for CDCs, returned a low demonstrated compliance rate predominantly attributed to the:

- Incorrect standard used for structural design.
- Incorrect design criteria considered in structural design.
- Design criteria elements not considered/missing in structural design.

## 5.2 Access for people with disability

To ensure that buildings and building aspects are accessible for people with a disability, the applicable access provisions of the NCC should be represented in the design documentation referenced in part three of the CDC.

Areas of concern due to low demonstrated compliance rates in the approval certificates are:

- General building access requirements; and
- accessible car parking.

The NCC nominates general building access requirements. This access is generally to and within areas normally used by occupants, but also includes provisions specific to building uses and specific areas within those buildings. The approval certificates inspected recorded a low percentage of demonstrated compliance for general requirement for pedestrian entrance access and access to associated facilities.

Accessible car parking recorded a low demonstrated compliance percentage due to omission or partially incomplete information in the documentation referenced in the CDC, that failed to nominate the location of a required accessible car bay and/or details of required layout sizes, falls, shared space and bollard requirements.

## 5.3 Light and ventilation

An area with low demonstrated compliance within the lighting and ventilation requirements of the NCC was artificial lighting. The NCC nominates minimum illuminance requirements

appropriate to the use of the building to enable safe movement by occupants, through its performance requirement for artificial lighting.

Compliance with the 'deemed-to-satisfy' provisions for artificial lighting is demonstrated through design documentation by nominating lighting locations and describing the correct artificial lighting design criteria.

When adequately detailed, this information is commonly found within electrical engineering drawings and electrical/general specifications. The low demonstrated compliance percentage recorded for artificial lighting in the certificates inspected typically reflected insufficient appropriate information provided in the referenced design documentation.

## 5.4 Energy efficiency

The NCC requires a building (including its services) to have features that facilitate the efficient use of energy appropriate to:

- The function and use of the building;
- the level of human comfort required for the building;
- solar radiation being utilised for heating and controlled to minimize energy for cooling;
- the energy sources of the services; and
- for conditioned spaces, achieving an hourly regulated energy consumption during hours of operation.

Typically, in the approval certificates reviewed during the compliance inspection building fabric, glazing, and building sealing were addressed in a referenced energy efficiency report that included 'deemed to satisfy' compliance information and performance solutions for those elements.

The referenced design document in the approval certificates reviewed provided a low rate of demonstrated compliance in the following areas:

- Air-conditioning and ventilation systems;
- artificial lighting and power; and
- facilities for energy monitoring

For the identified areas of energy efficiency with low rates of demonstrated compliance, the energy efficiency reports mentioned above, frequently contained either limited, contradictory or no information.

## 5.5 Relocatable buildings

Relocatable buildings are supplied for various uses and building classifications and are considered under the Building Regulations 2012 (WA). They have specific listed building standards in regulation 31D, which are applicable to the assembly, reassembly or securing of a relocated building.

Generally, the applicable building standards for relocation and placement are the current NCC

performance requirements for life safety aspects, such as structural provisions and fire safety matters, and the building standards applicable at the time the building was originally built, for other requirements. The building surveyor is the expert in the consideration of these compliance matters and uses the design documentation provided to determine how the building satisfies the requirements to be used/relocated/secured as proposed.

Relocatable buildings of various classifications and sizes accounted for 11 out of the 80 inspections conducted. The documents referenced in the certificates reviewed, provided inconsistent rates of demonstrated compliance in the following areas:

- Structural design of relocatable building:
  - general construction details (engineer certification); and
  - site specific placement and securing information.
- Fire resistance:
  - location of building in relation to other buildings on the site; and
  - protection of openings where required.
- Services and equipment;
  - the provision of correct fire-fighting equipment (fire extinguishers).

Note: Inconsistent comprehension of the applicable regulation appears to have contributed to the inconsistent rates of demonstrated compliance for the items listed above.

### 5.6 Evidence of suitability

A common link for the areas requiring attention (mentioned above) is a reliance on insufficient documentary evidence to support NCC compliance.

Part 5.2 (previously part A2.2) of the BCA prescribes options that can be relied on as evidence to demonstrate that the use of materials, products, forms of construction or designs meet the requirements.

Building surveyors should ensure that sufficient evidence of suitability has been provided to satisfy NCC requirements prior to issuing an approval certificate.

Some building contracts are commenced without full design of all items being finalised. Where this is the case, the building surveyor should ensure that the correct design criteria is nominated in the approvals documentation as a minimum to confirm built form expectations and to avoid unintended non-compliance outcomes at the end of project certification.

## 6. Future actions Class 2-9 Certificate of Design Compliance (CDC) – areas requiring attention

Building and Energy will present the findings of the compliance inspection to registered building surveyors at DEMIRS information sessions, with specific guidance provided regarding demonstrating compliance for the areas identified as requiring attention.

Building and Energy will liaise with structural engineers through industry bodies to advise of

the inspection findings regarding structural provisions and provide feedback about the expectations of building surveyors in reviewing structural engineering documentation.

From 1 July 2024, new laws in WA will require building engineers to be registered by the Building Services Board (the Board) to carry out, or contract with consumers to carry out, building engineering work in the State.
Registration of building engineers will be implemented in two stages:

1. Registration of structural and fire safety building engineers will commence from 1 July 2024.

2. Registration of civil and mechanical building engineers will commence from 1 July 2025.

A two-year transition period applies for each stage, during which unregistered people may lawfully continue to do building engineering work.

Registration will become mandatory for structural and fire safety engineers on 1 July 2026, and for civil and mechanical engineers on 1 July 2027.

Additionally, Building and Energy will:

- Publish an industry bulletin to highlight the compliance requirements for relocatable buildings;
- conduct a general inspection of disability access for class 2-9 buildings (included in 2023-2024 audit priorities statement);
- conduct further reviews of CDCs and associated CCCs for lass 2-9 buildings (Included in 2023-2024 audit priorities statement); and
- Review specific energy efficiency findings for class 2-9 buildings for inclusion in future audit priorities.

# Appendix A: Detailed findings by inspection points Class 2-9 CDC

| Inspection point | Compliance demonstrated | Compliance not demonstrated | Demonstrated (%) |
|---|---|---|---|
| **Documentation – Total** | **363** | **77** | **83%** |
| Description of works | 56 | 10 | 85% |
| Documentation listed matches record | 49 | 17 | 74% |
| Clear scope of works | 57 | 9 | 86% |
| Appropriate building classification | 58 | 8 | 88% |
| Correct edition of NCC BCA | 59 | 2 | 97% |
| Wind classification appropriate | 39 | 11 | 78% |
| Performance documentation appropriate | 6 | 18 | 25% |
| Peer review of performance solution/s | 1 | 1 | 50% |
| Building surveyor correct registration | 38 | 1 | 97% |
| **Structural provisions** | **47** | **63** | **43%** |
| Determination of individual actions | 16 | 34 | 32% |
| Structural resistance of materials and forms | 23 | 27 | 46% |
| Buildings in flood hazard areas | 3 | 0 | 100% |
| Additional requirements for cyclonic areas | 5 | 2 | 71% |
| **Fire resistance and stability** | **231** | **49** | **83%** |
| Type of construction required | 55 | 1 | 98% |
| Fire hazard properties | 39 | 16 | 71% |
| Performance of external walls in fire | 7 | 3 | 70% |
| Ancillary elements | 7 | 3 | 70% |
| Correct FRL levels applied | 25 | 13 | 66% |
| Calculation of rise in storeys | 58 | 0 | 100% |
| Buildings of multiple classifications | 24 | 1 | 96% |
| Mixed types of construction | 1 | 1 | 50% |
| Construction type concession applied correctly | 4 | 0 | 100% |
| Lightweight construction | 4 | 5 | 44% |
| Non-combustible building elements | 7 | 4 | 64% |

| **Compartmentation and separation** | **92** | **15** | **86%** |
|---|---|---|---|
| General floor area and volume limitations | 53 | 0 | 100% |
| Vertical separation of openings | 3 | 0 | 100% |
| Separation by fire walls | 15 | 6 | 71% |
| Separation of classifications in same storey | 13 | 2 | 87% |
| Separation of equipment | 3 | 4 | 43% |
| Electrical supply system | 5 | 3 | 63% |
| **Protection of openings** | **98** | **37** | **73%** |
| Opening elements correctly considered | 18 | 2 | 90% |
| Protection of openings in external walls | 14 | 8 | 64% |
| Openings in different compartments | 13 | 2 | 87% |
| Acceptable methods of protection | 7 | 8 | 47% |
| Doorways in fire walls | 8 | 4 | 67% |
| Openings in fire-isolated exits | 2 | 0 | 100% |
| Service penetrations in fire-isolated exits | 2 | 0 | 100% |
| Openings in fire-isolated lift shafts | 1 | 2 | 33% |
| Openings in floors and ceilings for services | 9 | 1 | 90% |
| Openings in shafts | 1 | 1 | 50% |
| Openings for service installations | 12 | 2 | 86% |
| Construction joints | 6 | 5 | 55% |
| Doorways in horizontal exits | 3 | 0 | 100% |
| Bounding construction (class 2,3 &4) | 1 | 2 | 33% |
| Lightweight construction protection | 1 | 0 | 100% |
| **Provision for escape** | **453** | **30** | **94%** |
| Number of exits | 58 | 2 | 97% |
| Fire isolated stairs and ramps requirements | 8 | 1 | 89% |
| Exit travel distances | 55 | 5 | 92% |
| Distance between alternative exits | 39 | 0 | 100% |
| Dimension of exits and path of travel to exit | 56 | 5 | 92% |
| Travel via fire-isolated exits | 3 | 1 | 75% |
| Travel by non-fire-isolated exits | 23 | 1 | 96% |
| Discharge from exits | 45 | 14 | 76% |
| Horizontal exits | 2 | 0 | 100% |
| Number of persons accommodated | 52 | 1 | 98% |
| Measurement of distances | 54 | 0 | 100% |
| Method of measurement | 53 | 0 | 100% |
| Access to lift pits | 5 | 0 | 100% |

| **Construction of exits** | **184** | **68** | **73%** |
|---|---|---|---|
| Non-fire-isolated stairways and ramps | 2 | 1 | 67% |
| Separation of rising and ascending stairs | 1 | 0 | 100% |
| Installations in exits and paths of travel | 15 | 1 | 94% |
| Enclosure of space under stairs and ramps | 5 | 4 | 56% |
| Width of required stairways and ramps | 8 | 0 | 100% |
| Fire-isolated passageways | 0 | 1 | 0% |
| Pedestrian ramps | 0 | 2 | 0% |
| Goings and risers | 12 | 7 | 63% |
| Landings | 13 | 3 | 81% |
| Thresholds | 20 | 13 | 61% |
| Barriers to prevent falls | 9 | 6 | 60% |
| Handrails | 15 | 6 | 71% |
| Doorways and doors | 23 | 5 | 82% |
| Swinging doors | 27 | 6 | 82% |
| Operation of latch | 25 | 10 | 71% |
| Signs on doors | 4 | 1 | 80% |
| Protection of openable windows | 5 | 2 | 71% |
| **Access for people with disability** | **228** | **132** | **63%** |
| General building access requirements | 36 | 24 | 60% |
| Access to buildings | 32 | 24 | 57% |
| Parts of building to be accessible | 32 | 22 | 59% |
| Exemptions | 21 | 2 | 91% |
| Accessible car parking | 22 | 22 | 50% |
| Signage | 27 | 19 | 59% |
| Tactile ground surface indicators | 22 | 9 | 71% |
| Ramps | 13 | 3 | 81% |
| Glazing on accessways | 23 | 7 | 77% |
| **Firefighting equipment** | **119** | **45** | **73%** |
| Fire hydrants | 24 | 12 | 67% |
| Fire hose reels | 17 | 3 | 85% |
| Portable fire extinguishers | 52 | 6 | 90% |
| Fire precautions during construction | 20 | 23 | 47% |
| Sprinklers | 6 | 1 | 86% |

| | | | |
|---|---|---|---|
| **Smoke hazard management** | **12** | **5** | **71%** |
| General requirements | 11 | 4 | 73% |
| Provisions for special hazards | 1 | 1 | 50% |
| **Lift Installations** | **14** | **9** | 61% |
| Lift installations | 4 | 3 | 57% |
| Warnings against use of lifts in fire | 3 | 3 | 50% |
| Facilities for people with disabilities | 0 | 1 | 0% |
| Emergency lifts | 1 | 0 | 100% |
| Landings | 5 | 1 | 83% |
| Passenger lifts | 1 | 1 | 50% |
| **Emergency lighting, exit signs and warning** | **199** | **38** | **84%** |
| Emergency lighting requirements | 35 | 13 | 73% |
| Measurement of distance | 33 | 0 | 100% |
| Design and operation of emergency lighting | 30 | 7 | 81% |
| Exit signs | 33 | 5 | 87% |
| Direction signs | 26 | 4 | 87% |
| Residential exemptions | 4 | 2 | 67% |
| Design and operation of exit signs | 37 | 5 | 88% |
| Emergency warning and intercom systems | 1 | 2 | 33% |
| **Damp and weatherproofing** | **277** | **64** | **81%** |
| Stormwater drainage | 28 | 24 | 54% |
| External above ground membranes | 12 | 3 | 80% |
| Roof Covering | 48 | 5 | 91% |
| Sarking | 30 | 3 | 91% |
| Waterproofing of wet areas in buildings | 32 | 10 | 76% |
| Damp-proofing | 34 | 5 | 87% |
| Damp-proofing of floors on the ground | 38 | 3 | 93% |
| Provision of floor wastes | 7 | 2 | 78% |
| Sub-floor ventilation | 7 | 2 | 78% |
| Glazed assemblies | 41 | 7 | 85% |

| | | | |
|---|---|---|---|
| **Sanitary and other facilities** | **187** | **65** | **74%** |
| Facilities in residential buildings | 4 | 0 | 100% |
| Calculation of number of occupants and facilities | 45 | 6 | 88% |
| Facilities in Class 3-9 buildings | 33 | 16 | 67% |
| Accessible sanitary facilities | 15 | 12 | 56% |
| Construction of sanitary compartments | 37 | 11 | 77% |
| Interpretation – Urinals and washbasins | 32 | 2 | 94% |
| Microbial control | 21 | 18 | 54% |
| **Room Heights** | **55** | **2** | **96%** |
| Heights of rooms and other spaces | 55 | 2 | 96% |
| **Light and ventilation** | **193** | **54** | **78%** |
| Provision of natural light | 19 | 0 | 100% |
| Methods and extent of natural light | 18 | 1 | 95% |
| Artificial light | 34 | 21 | 62% |
| Ventilation of rooms | 46 | 13 | 78% |
| Natural ventilation | 28 | 6 | 82% |
| Position of water closets and urinals | 20 | 5 | 80% |
| Air locks | 18 | 6 | 75% |
| Car parks | 2 | 0 | 100% |
| Kitchen local exhaust ventilation | 8 | 2 | 80% |
| **Sound transmission and insulation** | **25** | **7** | **78%** |
| Airborne sound insulation ratings | 5 | 2 | 71% |
| Impact sound insulation ratings | 6 | 1 | 86% |
| Sound insulation ratings of floors | 5 | 1 | 83% |
| Sound insulation ratings of walls | 5 | 2 | 71% |
| Sound insulation ratings of services | 4 | 1 | 80% |
| **Minor structures and components** | **6** | **9** | **40%** |
| Swimming pools | 0 | 1 | 0% |
| Refrigerated chambers, strong-rooms, and vaults | 5 | 7 | 42% |
| Outdoor play spaces | 1 | 1 | 50% |
| **Boilers, pressure vessels, heating appliances, fireplaces, chimneys, and flues** | **1** | **2** | **33%** |
| Installation of appliances | 1 | 1 | 50% |
| Incinerator rooms | 0 | 1 | 0% |

| | | | |
|---|---|---|---|
| **Atriums** | **3** | **3** | **50%** |
| Construction at balconies | 0 | 1 | 0% |
| Separation at roof | 1 | 0 | 100% |
| Means of egress | 1 | 0 | 100% |
| Fire and smoke control systems | 0 | 1 | 0% |
| Application of part | 0 | 1 | 0% |
| Dimensions of atrium well | 1 | 0 | 100% |
| **Construction in bushfire prone areas** | **1** | **0** | **100%** |
| Protection | 1 | 0 | 100% |
| **Special use buildings** | **5** | **0** | **100%** |
| Compliance with specific provisions in Class 9b buildings | 2 | 0 | 100% |
| Requirements of part H correctly considered | 2 | 0 | 100% |
| Seating area | 1 | 0 | 100% |
| **Energy efficiency** | **132** | **72** | **65%** |
| Building fabric | 20 | 19 | 51% |
| Glazing | 3 | 1 | 75% |
| Building Sealing | 31 | 4 | 89% |
| Air-conditioning and ventilation systems | 23 | 16 | 59% |
| Artificial lighting and power | 28 | 19 | 60% |
| Heated water supply, swimming pool and spa pool plant | 18 | 4 | 82% |
| Facilities for energy monitoring | 9 | 9 | 50% |

# Appendix B: Detailed findings by inspection points Class 2-9 Certificates of Construction Compliance

| Inspection point | Compliance demonstrated | Compliance not demonstrated | Demonstrated (%) |
|---|---|---|---|
| **Documentation – Total** | **36** | **8** | **82%** |
| Building permit conditions cleared | 5 | 3 | 63% |
| Reliance on certificates | 9 | 3 | 75% |
| Certifications provided by appropriate experts | 10 | 2 | 83% |
| CCC issued by BS of appropriate level | 12 | 0 | 100% |
| **Structure and fire resistance** | **11** | **8** | **58%** |
| FRLs confirmed | 2 | 1 | 67% |
| Fire hazard properties | 4 | 7 | 36% |
| Performance of external panel wall in a fire | 3 | 0 | 100% |
| Separation of equipment and electrical supply | 1 | 0 | 100% |
| Service Installations and penetrations | 1 | 0 | 100% |
| **Safe movement and egress** | **22** | **6** | **79%** |
| Emergency lighting and exit signage | 6 | 3 | 67% |
| Going & riser dimensions, landings, thresholds, slip resistance, edge strip | 5 | 1 | 83% |
| Barriers to prevent falls | 3 | 2 | 60% |
| Swinging doors, doorways and doors, operation of latch | 7 | 0 | 100% |
| Have lifts been installed in accordance with requirements | 1 | 0 | 100% |
| **Access for people with disability** | **16** | **2** | **89%** |
| Exemptions applied correctly | 2 | 0 | 100% |
| Accessible car bays | 4 | 1 | 80% |
| Braille Signage | 5 | 0 | 100% |
| Glazing on Access ways | 5 | 0 | 100% |
| Hearing Augmentation | 0 | 1 | 0% |
| **Active fire protection** | **15** | **5** | **75%** |
| Fire hydrants | 3 | 1 | 75% |
| Fire hose reels | 3 | 0 | 100% |
| Sprinklers | 1 | 0 | 100% |
| Portable fire extinguishers | 7 | 4 | 64% |
| Protection of openings | 1 | 0 | 100% |

| | | | |
|---|---|---|---|
| **Health and amenity** | **24** | **13** | **65%** |
| Stormwater drainage | 6 | 4 | 60% |
| Waterproofing of wet areas | 4 | 2 | 67% |
| Glazed assemblies | 9 | 2 | 82% |
| Light and ventilation | 5 | 5 | 50% |
| **Sanitary and accessible facilities** | **13** | **3** | **81%** |
| Accessible and ambulant facilities | 5 | 1 | 83% |
| Construction of sanitary compartments | 3 | 1 | 75% |
| Facilities in Class 3-9 buildings | 5 | 1 | 83% |

# Appendix C: Building classification description table

| Class | Description |
|---|---|
| 1a | A detached house or a group of attached dwellings separated by fire resistant walls (for example, town houses or villa units) which is not located above or below another building other than a private garage. |
| 1b | A boarding house, guest house or hostel with a floor area not exceeding 300m$^2$ which ordinarily accommodates not more than twelve people and which is not located above or below another building other than a private garage. |
| 2 | An apartment building or group of single storey units located above a communal basement or garage. |
| 3 | A building, other than a Class 1 or 3 building, which is a common place of long term or transient residence such as (for example, a boarding house, guest house or backpackers' accommodation or residential part of a hotel, school, or detention centre. |
| 4 | A dwelling within a building that is otherwise a Class 6, 7, 8 or 9 building (for example, a caretaker's residence or an apartment above a workshop). |
| 5 | An office building used for commercial purposes not otherwise captured in Class 6, 7, 8 or 9. |
| 6 | A shop or other building through which the public is sold goods or services. |
| 7a | A carpark structure. |
| 7b | A warehouse or a building for the display of goods to be sold on a wholesale basis. |
| 8 | A laboratory, factory, or workshop where business is conducted for trade, sale, or commercial gain. |
| 9a | A healthcare facility where occupants or patients generally need assistance to evacuate during an emergency (for example, a hospital or care facility). |
| 9b | A building where people assemble for civic, educational, entertainment or transportation purposes. |
| 9c | An aged care building. |
| 10a | A non-habitable building being a private garage, shed or the like. |
| 10b | A non-habitable structure being a fence, swimming pool, retaining wall or the like. |
| 10c | A private bushfire shelter. |

# Appendix D: Role and powers of Building and Energy

Western Australia has a suite of laws governing building control, including the *Building Act 2011* (the Building Act), the *Building Services (Complaint Resolution and Administration) Act 2011* (the BSCRA Act), and the *Building Services (Registration) Act 2011* (the Registration Act).

The BSCRA Act empowers the Building Commissioner to monitor any building or building service in WA to verify how building services have been or are being carried out, and how building standards have been or are being applied.

The Building Commissioner can designate Building and Energy officers to review approval documentation and to inspect buildings during construction and after the completion of building works.

The Registration Act provides a framework for registering building surveyors and builders and includes disciplinary provisions to manage sub-standard work and conduct by a registered building service provider.

For a new building of any classification that requires a building permit, the Building Act requires a registered building surveyor to sign a certificate of design compliance (CDC) for the building design. The CDC contains a statement to the affect that if the building is completed in accordance with the plans and specifications that are referenced in the certificate the building will comply with each applicable building standard.

Additionally for new Class 2-9 buildings that require a building permit, the Building Act requires a registered building surveyor to sign a certificate of construction compliance (CCC) for the completed building. The CCC contains a statement to the affect that the building has been completed in accordance with the plans and specifications that were referenced in the CDC, and as such the building complies with each applicable building standard.

Further information about the role of Building and Energy is available on the DEMIRS website.

# Appendix E: Building approvals

The building approval process for WA is legislated under the Building Act and associated Building Regulations. This legislation controls the application of building standards for the design and construction of buildings and incidental structures and sets out when a building permit is needed for building work.

The Building Act generally requires a building permit for the construction of a new building and an occupancy permit to allow a building to be occupied (applies to class 2-9 only). As part of the process for getting a building permit, a building surveyor needs to sign a certificate of design compliance (CDC) stating that if the building is completed in accordance with the plans and specifications, the building will comply with each applicable building standard that applies to it. For an occupancy permit a building surveyor needs to sign a certificate of construction compliance (CCC) stating the building has been completed in accordance with the plans and specification specified in the CDC.

The permit authority (usually the local government in whose district the dwelling will be built) can grant building permits and occupancy permits if satisfied that the application for a permit addresses the requirements of the Building Act 2011 and Building Regulations 2012. The permit authority can request further information to assist it in considering an application (if there is an error) and impose conditions on the grant of a building permit if necessary.

The builder named on the building permit is responsible for ensuring that the building is constructed in accordance with the building permit (including any conditions) and the applicable building standards.

Building Surveyors must be satisfied that the building has been constructed in accordance with the approval documentation prior to signing a Certificate of Construction Compliance.

The Building Act gives the permit authority powers to monitor and inspect building work to ensure compliance with these requirements. The Building Act also provides permit authorities with the power to issue building orders to remedy or stop building work, and to prosecute builders and owners for non-compliance.

Further information about the permit process is available on the DEMIRS website.

# Appendix F: Risk ranking tool

For the purposes of auditing, the reason for determining risk is to inform if and what follow up actions are required.

To determine a risk ranking of areas identified as not demonstrating compliance, officers use a 5 x 5 risk matrix which has been developed for the purposes of auditing. Each identified item is assessed individually against the matrix, considering the possible consequences of a building that is completed without the required compliance element and then considering the likelihood of that consequence occurring.

The matrix considers four consequences categories, being people, financial, environmental, and reputational. The many permutations available ensure that a risk outcome can be achieved for a particular non-compliance when related to a specific building. The methodology does not include any pre-determined risk ranking outcomes.

# Risk Matrix

| | | | CONSEQUENCE | | | | |
|---|---|---|---|---|---|---|---|
| | | People | Minor disruption and no risk to people's health or safety. | Slight disruption of occupants and minor injury to people. Minor impact on people's health (mental &/or physical) Moderate impact on people's legal rights. | Could cause a major disruption to occupants and result in injury or illness to people resulting in one or more day(s) unable to function in a working environment. Significant impact on people's legal rights. | Occupants could suffer a permanent total disability or major health issue (mental &/or physical). Major impact on people's legal rights. | Could result in fatality |
| | | Financial | Cost <$1000 | Cost $1000 - $10 000 | Cost $10 000 to $100 000 | Cost > $100 000 | Cost > $1, 000 000 |
| | | Environmental | No environmental consequence greater than as expected business as usual | No environmental consequence greater than as expected business as usual | Environmental damage can be mitigated and is not required to be notified under jurisdiction requirements as environment can be restored. | Risk of reversible environmental damage required to be notified under jurisdiction requirements. | Could result in irreversible severe environmental damage required to be notified under jurisdiction requirements. |
| | | Reputational | No reputational consequence greater than as expected business as usual | Minor reputational consequence compared to business as usual | Reputational damage is possible if action is not taken on subject non-compliance (possible chance of media coverage or loss in confidence by industry and public. Contentious Issue Briefing Note likely required) | Reputational damage is likely if action is not taken on subject non-compliance (likely chance of media coverage or loss in confidence by industry and public. Minister likely required to make a statement) | Reputational damage is almost certain if action is not taken on subject non-compliance (almost certain chance of media coverage and loss in confidence by industry and public. Parliamentary inquiry or Royal Commission could result) |
| | | | 1 | 2 | 3 | 4 | 5 |
| LIKELIHOOD | Probability | | Insignificant | Moderate | Significant | High | Extreme |
| | Is expected to occur in most circumstances (>95%) | 5 Almost certain | 6 | 7 | 8 | 9 | 10 |
| | Will probably occur in most circumstances (65 - 95%) | 4 Likely | 5 | 6 | 7 | 8 | 9 |
| | Might occur at some time (35 - 65%) | 3 Possible | 4 | 5 | 6 | 7 | 8 |
| | Could occur at some time (5 - 35%) | 2 Unlikely | 3 | 4 | 5 | 6 | 7 |
| | May occur only in exceptional circumstances (<5%) | 1 Rare | 2 | 3 | 4 | 5 | 6 |

| Score outcomes: | |
|---|---|
| 2-5: | Low Risk: Builder to rectify defects (no proof of rectification sought). Building service provider or building surveyor to comply in future. |
| 6: | Medium Risk: Builder to rectify defects (no proof of rectification sought). Building service provider or building surveyor to comply in future. |
| 7-8: | High Risk: Proof of rectification is required. Building surveyor required to demonstrate future compliance.<br>Refer to Audit Manual Chapter 17 (Escalation Process for High Risk Inspections). |
| 9-10: | Very High Risk: **Immediate referral to Line Manager and/or building service provider, permit authority,Worksafe and any other as required.**<br>Refer to Audit Manual Chapter 17 (Escalation Process for High Risk Inspections). |

## Additional Resources

- General Inspection Seven - CDCs Class 7b & 8 buildings
- Registered building surveyor contractor obligations
- Building and Energy complete industry bulletin list

## Feedback

Feedback on the content of this report can be submitted via be.info@dmirs.wa.gov.au.

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