



# 0001c Design Checklist - Building Regulations

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# 00 Design principles

## 0.01 Main Considerations

It is a requirement to undertake the [00 PLANNING AND DESIGN/ 0001R - DESIGN REFERENCE](#) and [GLOSSARY OF TERMS](#) information into all aspects of design, detailing and delivery when developing the content here within. Clear demonstration of adherence to these requirements is part of the services and will be called upon at key points in the project and during at the discretion of the Department of Education (DoE).

## 0.02 Introduction

This section of the EFSG Design Guide relates to the application of the National Construction Code (NCC) and the referenced Australian Standards (AS) as the current building regulations.

Within the EFSG Design Guide a reference to the Building Code of Australia, BCA or building regulations is also to be read as a reference to the NCC.

Where a requirement of this section conflicts with that within another section of the EFSG Technical Standards, the more onerous requirement or characteristic shall prevail.

Schools typically are classified as a Class 9b. There are some areas within a school that have a slightly different use, such as administration offices, which are a Class 5.

## Approvals Process

In accordance with New South Wales legislation, school projects are generally subject to the State Environmental Planning Policy (Educational Establishment and Child Care Facilities 2007)

Before the commencement of any building works, confirmation of the applicable approvals process must be sought from the Project Director.

Any required building permits must be obtained prior to the commencement of works.

## Building Code

National Construction Code (NCC) is a “performance-based” code, that permits compliance to be achieved via deemed-to-satisfy building solutions and/or alternative building solutions.

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All designs for the Department of Education must be on the basis that they are **DEEMED TO SATISFY (DTS)** building solutions.

Where this is not possible due to an existing building, or heritage constraints, an alternative building solution may be proposed for consideration by the Department of Education Project Director and Technical Stakeholders.

The Project Certifier responsible for certifying the design and / or construction of the works must hold current Grade A1 accreditation under the Building Professionals Board New South Wales.

Any proposed building works must comply with the current version of the BCA, NCC, PCA, the associated AS's and other relevant legislation applicable at:

- In the case of exempt development and development without consent:
- The date of invitation of tenders; or
- In the absence of tenders, the date on which the work commences,

It is the responsibility of the appointed contractor to consult with their Project Certifier in regards to the applicable version of the NCC prior to the commencement of any building works.

## Specific Department of Education Policy

DoE requires higher performance standards than that required by the BCA. These requirements are noted throughout the Design guide and are to be taken as at least satisfying the requirements of the BCA. They include areas such as construction of exits, widths of exits, stair design - width risers and goings, balustrade heights, fire hydrants, fire hose reels, fire extinguisher provision and lift size and specification requirements.

In the event of a discrepancy, the higher (safer) standard shall prevail.

## Fire Brigade Approval

However, it is important that any building design is provided with space and facilities to enable the fire brigade to attend a school site and conduct firefighting activities as required.

Note: 4.5m clear is required around perimeter of buildings for fire brigade access

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## 0.03 General Provisions

### Classification of Buildings and Structures

Each use within a building must be classified separately as per the intended use of the spaces.

Where not more than 10% of the floor area of a storey is used for a different classification, the classification applying to the other 90% may apply to the whole storey (NB: this concession may not be applied where the minor use is a laboratory or Class 2, 3 or 4 residential).

A laboratory within a primary or secondary school is generally classified as 9b due to the educational nature of the use, in lieu of Class 8.

### United Buildings

Schools are often divided up into groups of buildings which:

- Could be close to each other
- Have structural elements that link the buildings
- Have egress paths or fire protection systems that link the buildings together

Where the buildings are linked they must comply with the applicable provisions of the NCC as if they are 'one building'.

Unenclosed walkways that do not form a required exit for either building can be treated as a Class 10a building.

The presence of openings in the dividing walls between two buildings do not automatically create a united building, and need be assessed for the presence of structural, egress or fire protection interdependence.

Where no interdependence exists, the buildings can be treated as separate buildings and are then subjected individually to the requirements of the Building regulations.

## 0.04 Structure

### Mixed Classifications

All building works must be constructed in accordance with the structural provisions of the NCC

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## 0.05 Fire Resistance

### Fire Resistance and Stability

A new or existing building is to have the type of construction required in the NCC based on the use of the building and the number of storeys.

Fire resistance levels of building components depends on their function and proximity to fire source features.

### Compartmentation and Separation

The NCC sets limits on the size and volume of a building in order to limit the potential hazard associated with a large building being involved in a fire and becoming a hazard to a large number of people.

## 0.06 Access and Egress

### Provision for Escape

The Deemed to Satisfy Provisions set out minimum requirements for the walkways, corridors, stairs, ramps and the like in order to ensure that there is sufficient width for the proper use and safe evacuation of a building during times of emergency.

Additionally, DoE require that there is a minimum of two exits provided to each storey of a building of two or more storeys.

### Construction of Exits

DoE has requirements over and above the minimum standards of the BCA, designed to enhance the functionality and safety of exits. The following are required:

- In buildings of three or more storeys, any balustrade in the third storey and above must not have openings in the first 100mm above the floor, to prevent objects rolling off and falling from the floor
- Main student circulation passages are to have an unobstructed width not less than 2100mm
- Each flight of stairs must have a minimum of 3 risers and a maximum of 14 risers
- Height of stair risers in a primary school is to be 150mm (+/- 10mm)
- Height of stair risers in a secondary school is to be 165-mm (+/- 10-mm)

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- Stair going dimension for stairs in a primary or secondary school is to be 285mm (+/- 20mm)
  - Balustrades are to be provided where the difference in level exceeds 300mm.
  - Balustrades must achieve a height not less than 1000mm above stair nosings, ramp surfaces and all landings.
  - Refer also to **0001c DESIGN CHECKLIST - CIRCULATION**
  - Balustrades must not contain openings greater than 100-mm in both the horizontal and vertical directions
  - All balustrades must not contain a toehold in the zone of 150-760mm above the floor.

## Access for People with Disabilities

Refer to [00 PLANNING AND DESIGN/0001C DESIGN CHECKLIST - ACCESSIBILITY](#)

### 0.07 Services and Equipment

All fire safety measures must be installed and maintained in accordance with the relevant standard(s) of performance nominated within the Building regulations

The NCC permits an exemption for schools where Fire hose reels need not be provided to classrooms and associated corridors in a primary or secondary school.

#### Fire Fighting Equipment

Fixed and portable firefighting equipment is to be installed as required by building regulations.

All portable fire extinguishers must be selected and installed in accordance with the BCA and relevant AS, including the locating of units, the provision of signage, and mounting requirements.

DoE has a preference to **NOT** use chemical and powder type extinguishers. The Specification Guide lists preferred Fire Extinguisher locations and types.

#### Portable fire extinguishers

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Portable fire extinguishers must be installed to cover Class A fire risks within classrooms



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and associated corridors in primary and secondary schools not provided with fire hose reel coverage

- Portable fire extinguishers must be installed to cover Class A fire risks within other buildings having a floor area less than 500m<sup>2</sup> or not provided with fire hose reel coverage
- Portable fire extinguishers must be installed to cover Class AE or E fire risks associated with emergency services switchboards that control emergency equipment operating in the emergency mode
- Portable fire extinguishers must be installed where also required by the authorities (i.e. lift motor rooms, Work Cover Authority)

**Portable fire extinguishers must not be located in:**

- External positions that are susceptible to vandalism
- In an EDB or switchboard enclosures

Notwithstanding the location requirements of AS, the locating of portable fire extinguishers must also consider the obligation of staff to safely evacuate students.

**Additionally, in accordance with DoE requirements:**

The design and installation of all firefighting equipment must be in accordance with the NCC, Workers Health and Safety and Rural Fire Service requirements.

- Hydrant points are to be located external to a building, only for buildings under 3 storeys
- Hydrant risers must be located to provide coverage to all floor areas
- The location of security fencing and other obstructions must be considered when calculating coverage to a building from an existing or proposed hydrant
- Where a hydrant booster pump is required it is to be installed with a booster valve within a secure, purpose designed mason enclosure with adequate ventilation for the pumps and motors
- Fire hose reels where provided, are to be recess or cabinet mounted Fire blankets must also be installed in accordance with relevant AS

## Smoke Hazard Management

Smoke hazard management systems are to be installed as required by building regulations.

**Additionally, in accordance with DoE requirements:**

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A Whole of Life assessment approach is to be used in determining the appropriate smoke hazard management systems to ensure systems that are fit for purpose and cost effective in both installation costs and maintenance costs.

Refer to [00 PLANNING AND DESIGN/ 0001R - DESIGN REFERENCE](#)

## Emergency Lighting, Exit Signs and Warning Systems

Emergency lighting and Exit signage are to be installed in all school buildings as required by building regulations.

### Exit Signs

**Illuminated Exit Signs** are to be provided in each storey on, above or adjacent to:

- A door leading to an external stairway or ramp serving as an exit
- A door leading to an external access balcony leading to an exit
- Doors serving as or forming part of exits to storeys requiring emergency lighting
- Areas associated with the above where the direction/location of the exit is not obvious (eg at change of direction in corridors)

**Exit signs** are to comply with NCC and relevant AS.

### Provision for Special Hazards

Dust extraction space – Material Workshop- Wood & Metal

- Install a suitable school security unit alarm system to alert the New South Wales fire brigades to attend, should a fire occur
- Install signage to advise school staff not to open dust extraction space doors if a fire occurs

## 0.08 Health and Amenity

The building regulations set out requirements for buildings to ensure the safety and wellbeing of the occupants of a building. All new school buildings are to be designed and built to meet or exceed the requirements of the building regulations.

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## Sanitary and other Facilities

The NCC provides details of the numbers and types of sanitary facilities that are to be included based on the number of students and staff in a building. Sanitary facilities will not always be provided in every building, as students, teachers and staff will often move between different buildings throughout the day.

The number of facilities required exceeds the NCC (BCA). Toilets are distributed throughout the school buildings and areas to provide easy access to the facilities by the students and staff.

## Light and Ventilation

Refer to [00 PLANNING AND DESIGN/0001C DESIGN CHECKLIST - SUSTAINABILITY](#) and [00 PLANNING AND DESIGN/0001C DESIGN CHECKLIST - MECHANICAL](#)

## Sound Transmission and Insulation

In addition to the BCA, refer to [00 PLANNING AND DESIGN/0001C DESIGN CHECKLIST - ACOUSTICS](#)

## 0.09 Community Use Facilities

Some school facilities are used out of hours for activities such as weekend church groups, sport events and public meetings. The classification of spaces under the NCC may change due to the community use of facilities. Liaise with the Project Director to gain an understanding of any shared use, or community use arrangements that are being considered for the site.

New schools should be designed so that direct access to the open play space, fields, hall and gym can be achieved without the public gaining access to the buildings.

## 0.10 Energy Efficiency

Building regulations now include requirements for buildings and services to ensure that the buildings operate efficiently and do not use excessive amounts of energy.

All new school buildings are to be designed to meet or exceed the requirements of building regulations for conditioned spaces.

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Refer to [00 PLANNING AND DESIGN/0001C DESIGN CHECKLIST - SUSTAINABILITY](#)  
and [00 PLANNING AND DESIGN/ 0001R - DESIGN REFERENCE](#)

## 0.11 Access for Maintenance

All systems and equipment that is installed within a school is to be provided with suitable access to ensure that this equipment is safely and efficiently maintainable.

In order to ensure that maintenance is available, on the completion of all buildings, drawings are to be provided showing the completed (As Built) building including all equipment and equipment access arrangements.