FIRE ENGINEERING DA STATEMENT

FOR

DEVELOPMENT APPLICATION
160-172 LORD SHEFFIELD CIRCUIT, NORTH PENRITH

Report 2022 / 1830 – R2.0
04 November 2022

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DISTRIBUTION

Urban Property Group – Developers and Project Managers
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REPORT HISTORY

Version	Status	Date	Purpose
Revision 0.0	Draft	31/10/2022	For internal review
Revision 1.0	Draft	01/11/2022	For review by Developers/Project Managers and Planners
Revision 2.0	Final	04/11/1022	For DA Submission

REPORT AUTHORISATION

Report by:	Reviewed by:	Authorised by:
Anthony Delgado Fire Safety Engineer	Julian Nguyen Fire Safety Engineer	Atul Bhargava Director
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Date: 03/11/2022	Date: 04/11/2022	Date: 04/11/2022

1. EXECUTIVE SUMMARY

This report documents a high level fire safety engineering review for the proposed development of a new apartment complex building at 160-172 Lord Sheffield Circuit, Penrith. Fire Engineering Professionals Pty Ltd (FEP) undertook this assessment at the request of Urban Property, who are the Project Managers for the construction project.

Mckenzie Group Consulting (MGC) have undertaken a preliminary BCA assessment [Report Reference: 221463-01BCA, Revision 01 dated 29 October 2022] for the development. This BCA assessment identifies that the development comprises of the characteristics detailed in **Table 1-1**.

Table 1-1: BCA Descriptive Building Characteristics

Characteristic	Description	
Classification	Class 2 (Residential)	Levels 2 through to Level 9 and Roof
	Class 5 (Commercial Office)	Ground Level and Level 1
	Class 6 (Retail)	Ground Level
	Class 7a (Carpark)	Levels B1, B2 and B3
	Class 7b (Storage)	Ancillary storage on Level B1 and Ground Floor
Number of storeys contained	13	
Rise in storeys	10	
Type of construction required	Type A	
Effective height	34.45m	
Atrium provisions	No	
Principal building entry	Lord Sheffield Circuit	
Compartment size	The building will be divided into compartments to separate the carparking, retail, commercial office and residential parts of the building. It is understood that the fire compartment size of retail and commercial portion results in the building to be treated as a large isolated building.	

The development project for 160-172 Lord Sheffield Circuit is understood to be of a size and nature which, under NSW legislation, necessitates the complete building to be built to comply with current BCA requirements.

Fire Engineering Professionals Pty Ltd have been requested to review the proposed works with a view to providing The City of Penrith with a statement on whether the likely non-compliances

with BCA DTS provisions associated with the proposed works are likely to be able to be addressed by a “Performance Solution”. The report is also proposed to serve as a confirmation to the City of Penrith for the intention of Fire Engineering Professionals Pty Ltd to provide a “Performance Solution” for the identified list of non-compliances with the proposed building concept design.

It must be noted that this is a general fire engineering overview of the development and not a detailed fire engineering assessment, which will be developed in consultation with relevant stakeholders including City of Penrith and Fire & Rescue NSW.

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2. INTRODUCTION

This report documents a high level fire safety engineering review for the proposed development of a new apartment complex building at 160-172 Lord Sheffield Circuit, Penrith. Fire Engineering Professionals Pty Ltd (FEP) undertook this assessment at the request of Urban Property, who are the Developers and Project Managers for the construction project.

The proposed works involve the construction of a mixed use building complex at a currently unoccupied allotment located at 160-172 Lord Sheffield Circuit, Penrith. Upon completion, the development will span across a total of ten (10) above ground levels comprising of retail, commercial and residential use. The development will also contain of three (3) below ground basement levels for carparking, loading and ancillary storage.

FEP have been requested to review the proposed works with a view to providing The City of Penrith with a statement on whether the likely non-compliances with BCA DTS provisions associated with the proposed works may be able to be addressed by a “Performance Solution”. The report is also proposed to serve as a confirmation to the City of Penrith for the intention of FEP to provide a “Performance Solution” for the identified list of non-compliances with the proposed building design.

FEP has been supplied with a BCA assessment prepared by McKenzie Group Consulting [Report Reference: 221463-01BCA, Revision 01 dated 29 October 2022] outlining the significant issues of non-compliance with the BCA DTS provisions which may require a Performance Solution. This fire engineering review is based on the proposed building architectural design provided to FEP by Urban Property and the referenced BCA assessment report.

3. PURPOSE

The purpose of this review is to provide a statement to the City of Penrith on the ability of the proposed design of the development of the new building complex at 160-172 Lord Sheffield Circuit, with the non-compliances identified by the BCA Consultant, to be addressed as a “Performance Solution”.

This report is also likely to form the basis of a Performance Based Design Brief (PBDB) for further discussions with relevant stakeholders including Fire & Rescue NSW.

4. FIRE SAFETY OBJECTIVES

The core fire safety objectives of this review are:

- To review the likely non-compliances of the BCA with the building design that may require a “Performance Solution”; and
- To clarify the fire safety objectives of the preliminary assessment. The preliminary assessment will take into consideration the ability of the proposed building design and the fire safety measures in meeting the following fire safety objectives in the affected areas:
    a. Prevention of fire spread within the building and to adjoining allotments; and
    b. Facilitating safe evacuation of building occupants in the event of fire; and
    c. Facilitating Fire Brigade access to the building and intervention in the event of fire.

Objectives such as protection of property; protection of furnishings; protection of reputation and ensuring business continuity; safety other than fire safety; have not been identified as design objectives of this assessment. However, by satisfying the core fire safety objectives some of the above objectives may also be satisfied.

5. ASSUMPTIONS AND LIMITATIONS OF THIS REVIEW

The following assumptions and limitations apply to this review:

- This document presents a high level review only and is not based on detailed site inspections or a review of detailed system design drawings or condition reports; and
- This preliminary assessment is limited to a review of the proposed works taking into account the potential BCA DTS non-compliances identified by the BCA Consultant; and
- FEP takes no responsibility in respect to costing of the works and the accuracy of any budgets developed by Urban Property; and
- This high level review is based on information provided to FEP without any specific smoke and evacuation modelling or detailed assessment being carried out.

6. PRINCIPAL BUILDING CHARACTERISTICS

The proposed mixed use building development at 160-172 Lord Sheffield Circuit will comprise retail, commercial and residential portions with ancillary basement carparking and storage. The building is to be provided its main entry from Lord Sheffield Circuit whereas the emergency egress is predominantly via fire isolated exits discharging at the rear of the building.

The proposed 160-172 Lord Sheffield Circuit building has been identified to have the characteristics as identified in **Table 6-1**.

Table 6-1: BCA Descriptive Building Characteristics

Characteristic	Description	
Classification	Class 2 (Residential)	Levels 2 through to Level 9 and Roof
	Class 5 (Commercial Office)	Ground Level and Level 1
	Class 6 (Retail)	Ground Level
	Class 7a (Carpark)	Levels B1, B2 and B3
	Class 7b (Storage)	Ancillary storage on Level B1 and Ground Floor
Number of storeys contained	13	
Rise in storeys	10	
Type of construction required	Type A	
Effective height	34.45m	
Atrium provisions	No	
Principal building entry	Lord Sheffield Circuit	
Compartment size	The building will be divided into compartments to separate the carparking, retail, commercial office and residential parts of the building. It is understood that the fire compartment size of retail and commercial portion results in the building to be treated as a large isolated building.	

7. BRIEF DESCRIPTION OF THE PROPOSED WORKS

The proposed works associated with 160-172 Lord Sheffield Circuit development involve the construction of a new building complex containing retail, commercial and residential areas of the building. The building will comprise of three (3) basement carpark levels, one (1) retail level on Ground, one (1) commercial level and seven (7) storey residential tower above.

The building is provided emergency egress by way of a number of fire isolated exits which predominantly discharge to open space at the rear of the building i.e. along the existing railway corridor.

Section drawings showing the proposed building showing the building levels relative to the Ground and separation between the various building classifications are shown in **Figure 7-1**. The principal entries for the building are to be located along Lord Sheffield Circuit, as shown in **Figure 7-2**.

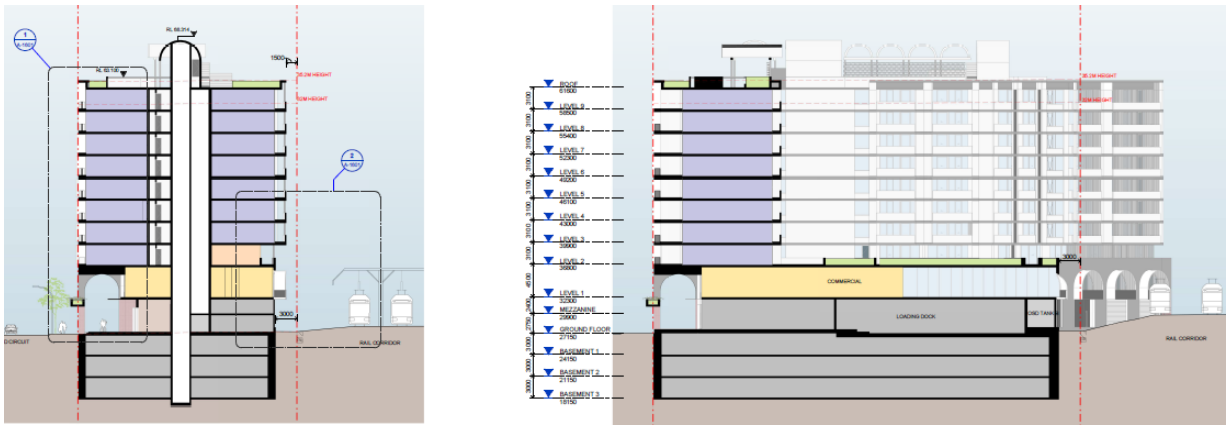

Figure 7-1: Sections showing the building levels relative to the Ground Level

Figure 7-2: Ground Level Floor Plan – Principal entrances to the building

8. FIRE AND RESCUE NSW ACCESS

The proposed fire brigade perimeter vehicular access around the 160-172 Lord Sheffield Circuit building complex is provided on two sides via Lord Sheffield Circuit and the driveway as shown in **Figure 8-1**, provided below.

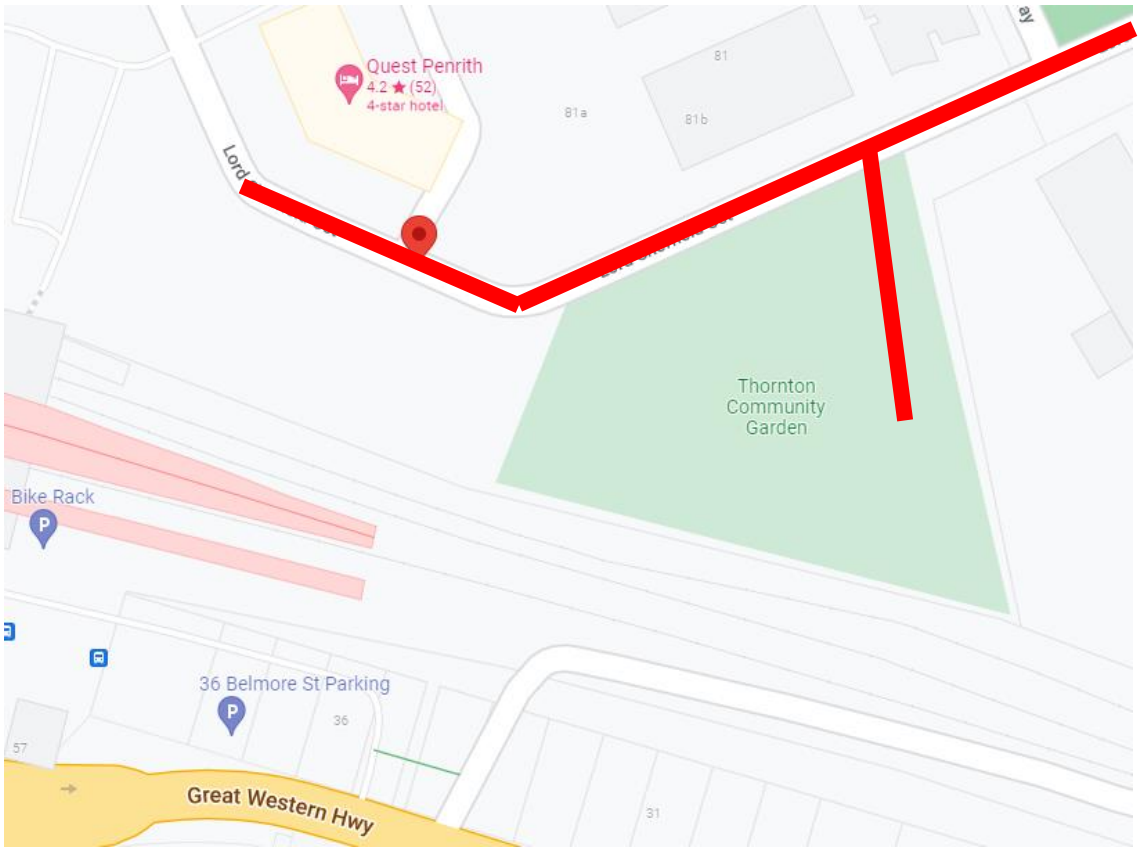

Figure 8-1: Site Plan – Proposed fire brigade perimeter vehicular access to 160-172 Lord Sheffield Circuit (courtesy of Google Maps)

It is currently understood that 160-172 Lord Sheffield Circuit will have a retail and commercial fire compartment size exceeding that permitted by BCA Table C2.2 and will therefore be required to be assessed as a large isolated building. Under BCA DTS provisions (Clauses C2.3 and C2.4) a large isolated building requires vehicle access around the complete perimeter of the building, therefore the proposed vehicular access which is only available from Lord Sheffield Circuit is not considered to comply with BCA DTS provisions and understood to require a Performance Solution.

9. SUMMARY OF ITEMS REQUIRING PERFORMANCE SOLUTIONS

The non-compliances with the BCA DTS provisions associated with the Performance Solution Report, as nominated in the BCA Report prepared by Mckenzie Group Consulting (MGC) [Report Reference: 221463-01BCA, Revision 01 dated 29 October 2022] to accompany the Development Application, are provided below:

- Rationalisation of fire resistance levels; and
- Large isolated building requirements for perimeter vehicular access; and
- Smoke separation of public corridors; and
- Exit travel distances; and
- Distance between exits; and
- Travel via fire-isolated exits; and
- Door swings which are not in the direction of egress; and
- Fire hydrant booster assembly and pumproom location; and
- Smoke hazard management; and
- Travel to fire control centre requires a change in level which is greater than 300mm.

10. CONCLUSION

FEP have reviewed the proposed architectural design for the construction of a mixed-use building development at 160-172 Lord Sheffield Circuit, Penrith, which forms subject of a Development Application (DA). FEP have also reviewed the BCA Report prepared by Mckenzie Group Consulting (MGC) that forms part of this DA submission and consider that the non-compliances with BCA DTS provisions identified with the proposed building design are able to be addressed by way of a “Performance Solution”. The preparation of the 'Performance Solution Report' will require a discussion and an agreement between relevant stakeholders (Performance Based Design Brief process).

The Performance Based Design Brief (PBDB) will outline the fire engineering strategy that is to be adopted; the modelling tools to be used for calculations; the methodology and the acceptance criteria nominated for each “Performance Solution” to be undertaken. A Trial Concept Design will also be nominated which outlines the building requirements which are to be met in order for the building design to be shown, via supporting evidence in the form of ‘Performance Solutions’, to be capable of meeting the Performance Requirements of the BCA with respect to the identified non-compliances.

11. APPENDIX A – DOCUMENTATION

The drawings identified in **Table 11-1** were examined during the production of this report.

Table 11-1: Assessment Documentation

Drawing Description	Drawing No.	Revision	Drawn	Date
Floor Plan – Basement 3	A-1000	8	Urban Property	01.11.2022
Floor Plan – Basement 2	A-1001	12	Urban Property	01.11.2022
Floor Plan – Basement 1	A-1002	11	Urban Property	01.11.2022
Floor Plan – Ground Level	A-1003	14	Urban Property	01.11.2022
Floor Plan – Ground Mezzanine	A-1003M	4	Urban Property	01.11.2022
Floor Plan – Level 1	A-1004	15	Urban Property	01.11.2022
Floor Plan – Level 2	A-1005	14	Urban Property	01.11.2022
Floor Plan – Level 3 – Level 9	A-1006	14	Urban Property	01.11.2022
Floor Plan – Level 4 – Level 9	A-1007	5	Urban Property	01.11.2022
Floor Plan – Communal Rooftop	A-1013	9	Urban Property	01.11.2022
Floor Plan – Roof	A-1014	12	Urban Property	01.11.2022
Elevation – North	A-1401	8	Urban Property	01.11.2022
Elevation – South	A-1402	8	Urban Property	01.11.2022
Elevation – East	A-1403	9	Urban Property	01.11.2022
Elevation – West	A-1404	9	Urban Property	01.11.2022
Sections – Sheet 1	A-1501	7	Urban Property	01.11.2022
Sections – Sheet 2	A-1502	5	Urban Property	01.11.2022
Sections – Sheet 3	A-1503	2	Urban Property	01.11.2022