



# **FIRE ENGINEERING DA STATEMENT**

**FOR**

**MONDO PROJECT  
WESTFIELD PENRITH**

Report 2016 / 1422 – R3.0  
02 October 2019

**Fire Engineering Professionals Pty Ltd**  
Consulting Fire Safety Engineers  
ACN: 119 803 851

Suite 201, 29 Anderson Street  
Chatswood NSW 2067  
P: 9411 7114  
F: 9411 7115  
W: [www.fireep.com.au](http://www.fireep.com.au)

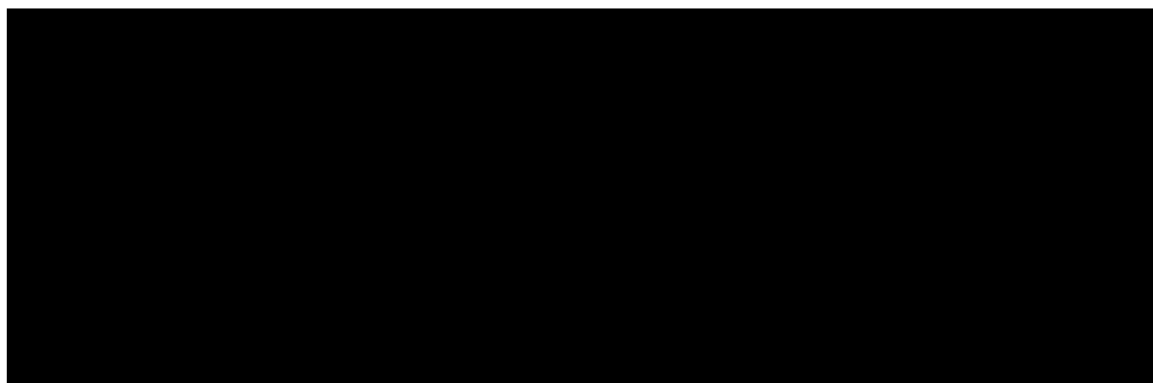
## DISTRIBUTION

Scentre Design & Construction – Project Managers  
Penrith City Council – Local Government Authority  
Steve Watson & Partners – Building Regulations Consultant

## REPORT HISTORY

Version	Status	Date	Purpose
Revision 0.0	Preliminary	10/07/2018	For internal review
Revision 1.0	Draft	11/07/2018	For Client review
Revision 2.0	Draft	25/02/2019	For Client review
Revision 3.0	Draft	02/10/2019	For Client review

## REPORT AUTHORISATION



This confidential document has been prepared for distribution to the client and must only be used for the project which forms the subject of this report. This document must not be used for any other purpose except for that specified in this document. All rights are reserved and no part of this document may be reproduced partially or fully or copied in any form or by any means except with the written permission of Fire Engineering Professionals Pty Ltd.

---

## **1. EXECUTIVE SUMMARY**

---

This report documents the findings of a preliminary high level fire safety engineering review carried out for the proposed Mondo Project construction on Level 1 and Level 2 at Westfield Penrith. Fire Engineering Professionals Pty Ltd (FEP) undertook this assessment at the request of Scentre Design & Construction, who are the Project Managers for the proposed development.

The proposed development involves alterations and additions to the existing Fresh Food Market and Food Court on Level 1 (Ground Level) and additional two (2) tenancies and associated entry modifications on Level 2 of Westfield Penrith shopping centre building. The proposed construction will include modifications to the main entry to the building from High Street and construction of new and/or modifications to existing plant areas associated with existing and new retail portions of the building.

Fire Engineering Professionals Pty Ltd have been requested to review the proposed works with a view to providing Scentre Design & Construction with a summary of the potential major impacts on the fire safety systems serving existing building and any new fire services/ smoke management systems which may result from the proposed construction works. The report is also proposed to serve as a confirmation to the Penrith City Council for the intention of Fire Engineering Professionals to provide a Performance Solution for the identified list of non-compliances with the proposed design of the Mondo Project.

It must be noted that this is a general overview of the likely requirements from the proposed new works with regards to the existing and new fire services and not a detailed fire engineering review, which will be developed in consultation with relevant stakeholders as part of the detailed fire engineering study. All recommendations contained in this summary report will require agreement with relevant stakeholders and are subject to modifications based on a detailed assessment.

FEP have been supplied with a brief BCA assessment report prepared by Steve Watson & Partners (Report Reference 2018/0898 dated 17 September 2019) outlining the key issues of non-compliance with the BCA DTS provisions which are likely to require a detailed fire engineering assessment. This fire engineering review is based on the existing and proposed building configuration provided to FEP by Scentre Group Design and review of the previous base building fire engineering reports.

A comprehensive list of potential fire safety system requirements is included in Section 11 of this preliminary review report.

**TABLE OF CONTENTS**

<b>1. EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>2. INTRODUCTION .....</b>	<b>3</b>
<b>3. PURPOSE.....</b>	<b>3</b>
<b>4. FIRE SAFETY OBJECTIVES.....</b>	<b>3</b>
<b>5. ASSUMPTIONS AND LIMITATIONS OF THIS REVIEW .....</b>	<b>4</b>
<b>6. PRINCIPAL BUILDING CHARACTERISTICS.....</b>	<b>5</b>
6.1 BRIEF DESCRIPTION OF THE PROPOSED WORKS.....	6
6.2 PREVENTIVE AND PROTECTIVE MEASURES .....	8
6.3 HAZARDS .....	10
6.4 OCCUPANT CHARACTERISTICS .....	11
<b>7. ASSESSMENT DATA .....</b>	<b>11</b>
<b>8. RELEVANT STAKEHOLDERS.....</b>	<b>12</b>
<b>9. BCA REQUIREMENTS ASSOCIATED WITH THE PROPOSED ALTERNATIVE SOLUTION .....</b>	<b>13</b>
<b>10. PERFORMANCE REQUIREMENTS .....</b>	<b>14</b>
<b>11. SIGNIFICANT FIRE SAFETY SYSTEM IMPLICATIONS .....</b>	<b>15</b>
GENERAL REQUIREMENTS.....	15
11.1 FIRE RESISTANCE AND COMPARTMENTATION .....	15
11.2 EMERGENCY EGRESS PROVISIONS.....	15
11.3 SERVICES .....	18
11.4 SMOKE HAZARD MANAGEMENT .....	19
11.5 MANAGEMENT PROCEDURES .....	19
<b>12. APPENDIX A – DOCUMENTATION.....</b>	<b>21</b>

---

## **2. INTRODUCTION**

---

This report documents the findings of a preliminary high level fire safety engineering review carried out for the proposed construction of Mondo Project to be located on Level 1 and Level 2 at Westfield Penrith. Fire Engineering Professionals Pty Ltd (FEP) undertook this assessment at the request of Scentre Design & Construction, who are the Project Managers for the proposed development.

The proposed development involves alterations and additions to the existing Fresh Food Market and Food Court on Level 1 (Ground Level) and additional two (2) tenancies and associated entry modifications on Level 2 of Westfield Penrith shopping centre building. The proposed construction will include modifications to the main entry to the building from High Street and construction of new and/or modifications to existing plant areas associated with existing and new retail portions of the building. .

Fire Engineering Professionals Pty Ltd have been requested to review the proposed works with a view to providing Scentre Design & Construction with a summary of the potential major impacts on the fire safety systems serving existing building and any new fire services/ smoke management systems which may result from the proposed construction works. The report is also proposed to serve as a confirmation to the Penrith City Council for the intention of Fire Engineering Professionals to provide a Performance Solution for the identified list of non-compliances with the proposed design of the Mondo Project.

FEP have reviewed a preliminary BCA assessment report prepared by Steve Watson & Partners [Job Ref. 2018/0898 dated 17 September 2019] which outlines the key issues of non-compliance with the BCA DTS provisions which may require a detailed fire engineering assessment. This review is based on the existing and proposed building configuration provided to FEP by Scentre Design & Construction and based on a review of the previous base building fire engineering reports.

---

## **3. PURPOSE**

---

The purpose of this preliminary review is to provide a brief on the likely impact of the proposed construction of Mondo Project to be located on Level 1 and Level 2 of Westfield Penrith building on the fire safety systems serving the base building and any new fire safety requirements arising from the proposed works. The report is also proposed to serve as a confirmation to the Penrith City Council for the intention of Fire Engineering Professionals to provide an alternative solution for the identified list of non-compliances with the proposed building design.

This report is also likely to form the basis of a Fire Engineering Brief (FEB) for further discussions with 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 review is a preliminary high level review only and is not based on detailed site inspections or review of system design drawings or condition reports.
- This preliminary assessment is limited to a review of the proposed works taking into account the potential non-compliances identified by the BCA Consultant. Should additional non-compliances to those which are noted in this report be identified at a later date, then these will need to be reviewed at that time and the likely impact on fire system requirements identified.
- FEP take no responsibility in respect to costing of the works and the accuracy of any budgets developed by Scentre Group.
- This review may not identify all fire safety system requirements accurately and is based on FEP's knowledge of Westfield Penrith building without any specific smoke and evacuation modelling being carried out.

## 6. PRINCIPAL BUILDING CHARACTERISTICS

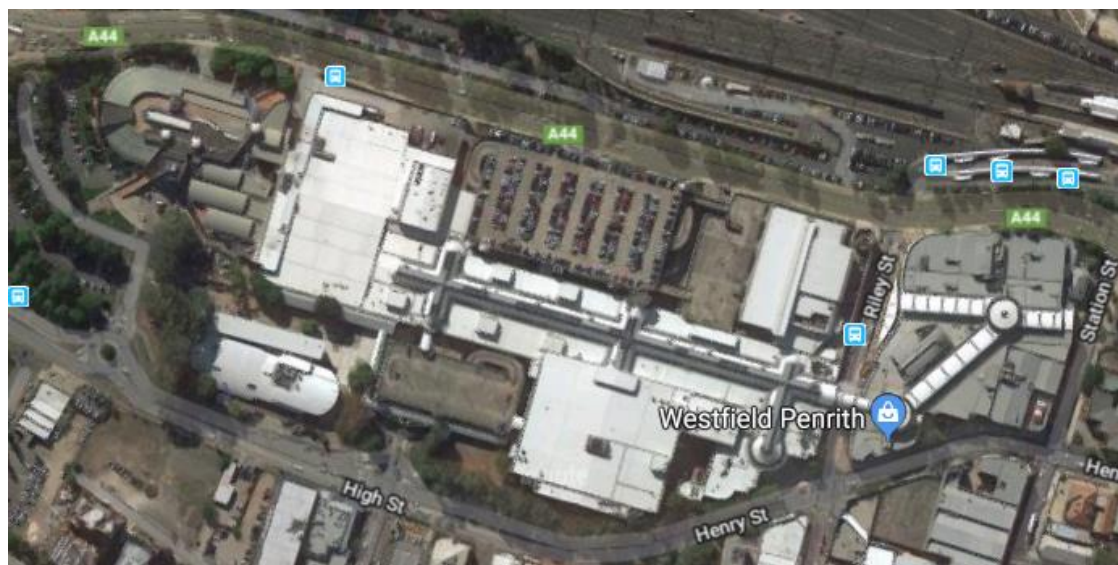
Westfield Penrith is a typical metropolitan shopping centre comprised of two (2) distinct parts, the east and the west of Riley Street. The shopping centre comprises of two (2) retail levels and associated basement, at grade and above ground carparks. Refer to **Figure 6-1** below for the general location of the shopping centre building.

The retail levels of the building consist of mall zones which incorporate a number of smoke zones and adjoining zones which are occupied by the mini-major and major stores. The shopping centre building incorporates numerous voids connecting the two retail levels.

In accordance with the DTS provisions of the BCA the building has the following characteristics:

**Table 6-1:** BCA descriptive characteristics for Westfield Penrith

Characteristic	Description
Building Use	Shopping Mall, Car Park, Cinema
Classification	<b>Class 6</b> – Retail <b>Class 7a</b> – Carpark <b>Class 9b</b> – Cinemas
Type of Construction Required	Type A
Effective height	Less than 25m.



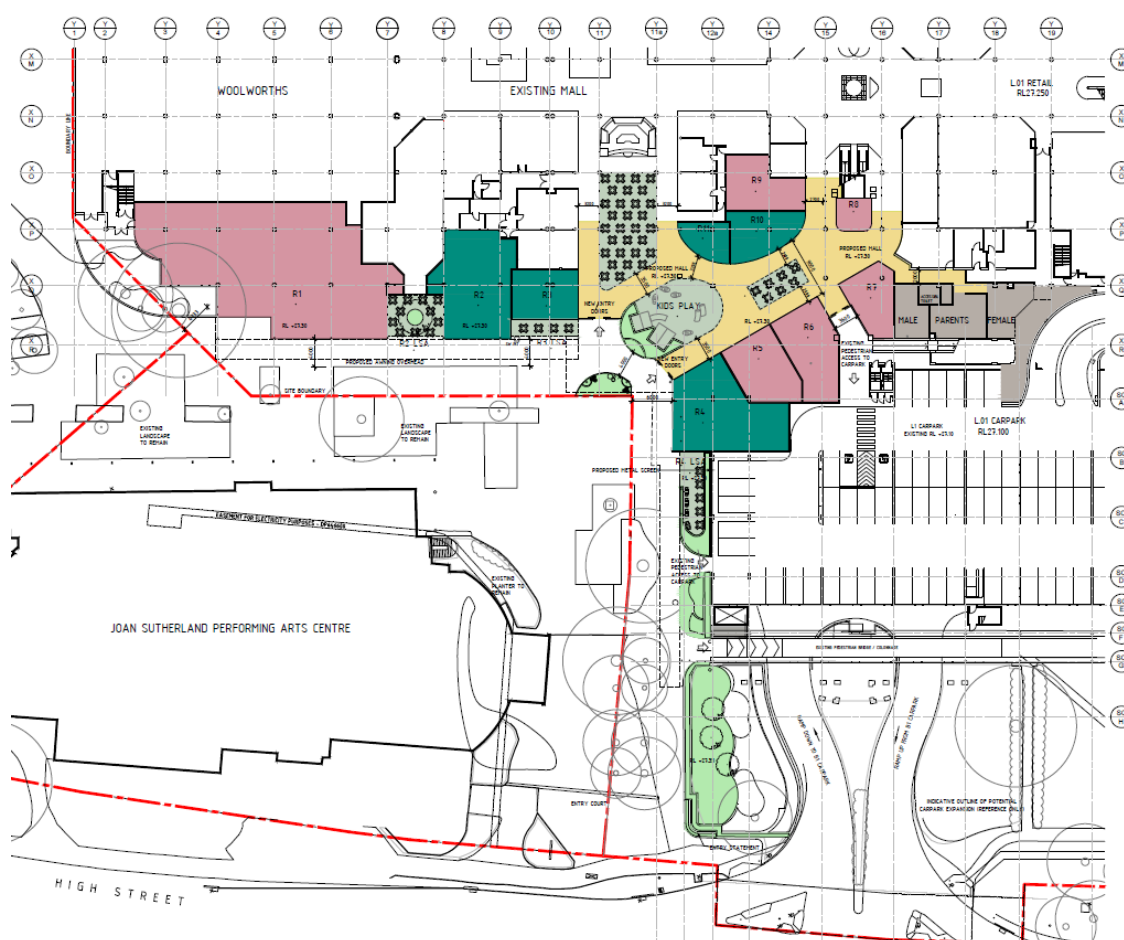
**Figure 6-1:** Aerial snapshot of the Westfield Penrith shopping centre and surrounding streets (courtesy Google Maps)

## 6.1 BRIEF DESCRIPTION OF THE PROPOSED WORKS

The proposed building works involve construction and reconfiguration of restaurant tenancies along the south western façade located adjacent to the existing Food Court and Fresh Food Market on Level 1 of the building and construction of a two (2) new tenancies on Level 2 located adjacent to the bridge link to the carpark. The proposed works also include the modifications to the existing entry to the building from High Street.

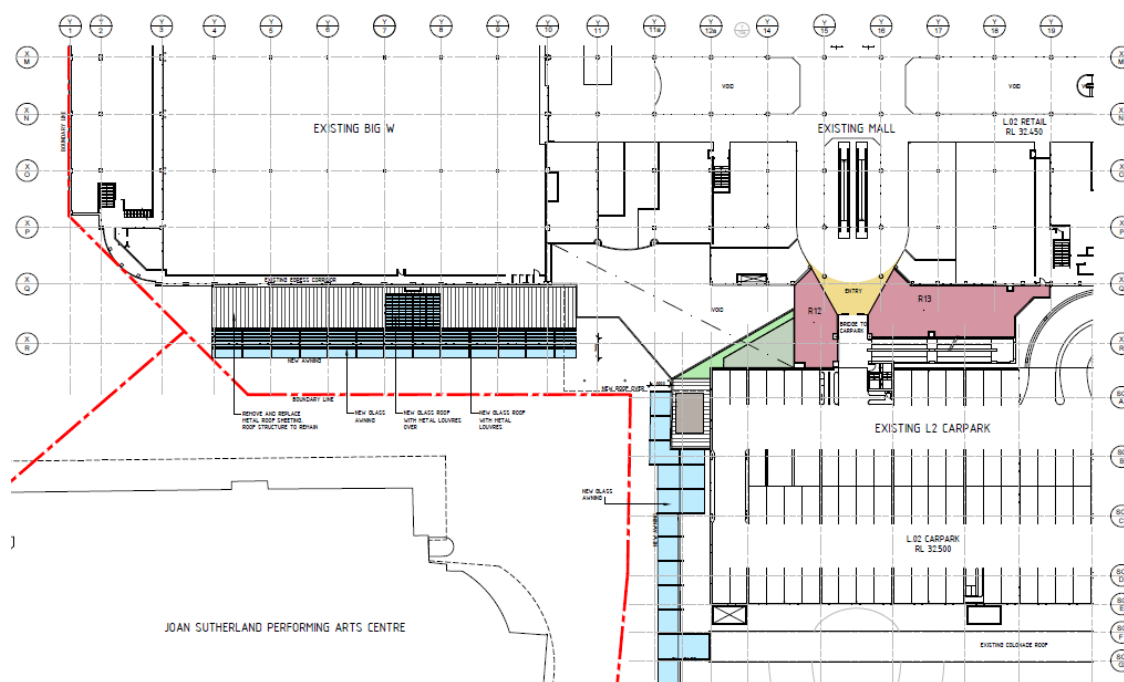
The emergency egress from the proposed new tenancies on Ground Level is to be provided via the existing path which leads occupants to High Street. Due to the nature of the proposed construction, a portion of this path of travel to Street will be covered by awnings.

The location and the extent of the proposed construction is shown in **Figure 6-3** and **Figure 6-4**.



**Figure 6-2** Part Level 1 plan showing the proposed new construction on Level 1





**Figure 6-3** Part Level 2 plan showing the proposed new tenancy areas and awning over the path of travel to High Street



**Figure 6-4** Artist perspective showing the proposed construction and the new entry from High Street

The proposed works result in a net increase in the overall retail floor area and therefore the resulting overall increased building population (as shown in **Figure 6-5** below) will be considered as part of the proposed fire engineering study.

Level	Use	Class	Approx GFA (m²)	Population Density @ (m²/person)	Population	Aggregate Exit Width required	Existing Exit width provided	Proposed Exit width after development	Status
Retail 1	Speciality retail, Mall and Kiosk	6	17,300	7.5	2307	20m	48m	35.2m (14.8m reduction)	Complies*
	Woolworths	6	3,578	7.5	477	4.5m	9m	5m (4m reduction)	Complies
	Aldi	6	1,613	7.5	215	2.5m	6m	No change	Complies
	MYER	6	6,789	7.5	905	8m	11m	No change	Complies
	Target	6	6,689	7.5	892	8m	12m	No change	Complies

\* Path of travel to the road from the discharge point will need a performance solution.

**Figure 6-5 Area schedule for Retail Level 1 at Westfield Penrith – extracted from BCA Assessment report prepared by Steve Watson & Partners**

## 6.2 PREVENTIVE AND PROTECTIVE MEASURES

The fire preventive and protective measures for Westfield Penrith involve various passive and active fire protection systems. The International Fire Engineering Guidelines (IFEG) indicate that to assist in analysing a fire safety system, it is convenient to consider the system as comprising six 'sub-systems' [ABCB, 2005a]. Therefore, preventive and protective measures detailed in **Table 6-2** are grouped in accordance with the different 'sub-systems' recommended by the IFEG.

**Table 6-2: Preventive and protective measures**

Sub-System	Comment
<b>Sub-System A</b> Fire Initiation and Development and Control	<p>Strict enforcement of the "No-Smoking" policy shall be implemented throughout the building;</p> <p>Strict enforcement of cleaning regimes for the restaurant tenancies, including regular cleaning and inspection of ductwork, to prevent accumulation of combustible residue in the ducts and rubbish in kitchens;</p> <p>Regular maintenance and inspection of all plant, electrical equipment and appliances shall be enforced in accordance with the relevant regulations.</p>
<b>Sub-System B</b> Smoke Spread and Control	<p>The existing portions of the building are currently provided with mechanical smoke exhaust as per the existing and proposed smoke management strategy.</p> <p>The proposed new specialty retail (restaurant) tenancies open on to open to sky areas which is to be utilised for natural smoke venting. The natural smoke venting is expected to maintain conditions tenable for the duration of occupant evacuation from these areas;</p> <p>All air-handling systems within the new areas shall comply with the DTS provisions of Part E2.2 of BCA 2014 and, if they do not form part of the smoke hazard management systems, shall shut-down on fire trip, which shall prevent smoke spread between different smoke zones;</p> <p>The inter-tenancy walls and other non-combustible and fire rated construction between different functional areas of the new portions of the building is</p>

Sub-System	Comment
	expected to prevent smoke spread.
<b><u>Sub-System C</u></b>  Fire Spread and Impact and Control	<p>Westfield Penrith retail areas form a single fire compartment. Imperforate non-fire rated walls are proposed to separate the new tenancies from each other;</p> <p>Potential fire spread is expected to be controlled by the automatic fire sprinkler system provided which is to be fully compliant with BCA DTS provisions;</p> <p>Should the sprinkler system fail to operate as designed, fire-rated walls and non-fire-rated inter-tenancy walls shall provide temporary barrier in the path of spreading fire.</p>
<b><u>Sub-System D</u></b>  Fire Detection, Warning and Suppression	<p>An automatic sprinkler system is understood to be provided throughout Westfield Penrith generally in accordance with AS2118.1-1999. All new areas shall be provided with sprinkler protection in accordance with BCA DTS provisions;</p> <p>A fire detection and alarm system is understood to be provided throughout the building in accordance with Clause 5 of BCA Specification E2.2a unless required by 'Alternative Solution' for specific tenancy or mall areas. Any new areas with extended travel distances shall be provided with smoke detection in accordance with BCA DTS provisions and AS1670.1 for early activation of occupant warning systems;</p> <p>The automatic fire sprinkler and fire detection and alarm systems serving the new areas are to be interfaced with the Fire Indicator Panel (FIP) and linked to a 24 hour Monitoring Station via Alarm Signalling Equipment (ASE);</p> <p>Portable fire extinguishers and fire hose reels are to be installed throughout the new areas in accordance with the DTS provisions of the BCA.</p>
<b><u>Sub-System E</u></b>  Occupant Evacuation	<p>Emergency lighting and exit signage is understood to be installed throughout the building generally in accordance with AS/NZS2293.1-2005;</p> <p>Additional emergency lighting and exit signage shall be provided throughout the new areas and the egress paths via shopping centre entre entries or via the carpark to direct occupants to High Street. The existing exit signage shall be modified to direct occupants to the nearest exits where existing emergency egress provisions are modified.</p> <p>An occupant warning system is currently installed throughout the building. It is understood that this existing system is to be extended to provide coverage to the new areas of the building. The warning system shall be capable of providing pre-recorded evacuation messaging and allowing for live directives to be broadcast from the fire panel. Activation of either the fire detection and alarm or sprinkler systems shall activate the occupant warning system.</p>
<b><u>Sub-System F</u></b>  Fire Services Intervention	<p>Professional fire service (Fire and Rescue NSW) available 24/7;</p> <p>Fire hydrant protection is provided from fire hydrants installed internally throughout the building. Internal fire hydrants are understood to be installed outside of the fire-isolated exits.</p> <p>Partial Fire &amp; Rescue NSW vehicle access shall be available around all four sides of the building.</p>

### 6.3 HAZARDS

Identification of hazards that are expected to affect life safety of building occupants is crucial to undertaking a fire safety engineering assessment. Special attention must be paid to those hazards that are not commonly associated with the type of the occupancy. Hazards associated with the general layout and activities as well as the ignition and fuel sources for the ELP construction at Westfield Penrith have been identified in **Table 6-3** below:

**Table 6-3:** Hazards and ignition sources

Type	Comment
General Layout	<p>No areas within the proposed works are currently identified with extended dead end travel distances.</p> <p>The proposed retail and restaurant tenancy areas are provided with alternative exits directly to outside (travel under awnings), via the open deck carpark which leads to exits discharging at Ground Level;</p>
Activities	<p>Activities associated with the day-to-day operation of Westfield Penrith are considered to present a medium fire risk in terms of the fire load and potential ignition sources.</p>
Ignition Sources	<p>The main ignition source throughout the areas forming part of the Mondo Project would be expected to be faulty electrical wiring; lighting and/or electrical equipment etc.;</p> <p>The main ignition source within the restaurant tenancies is expected to be open flame cooking and faulty cooking equipment etc;</p> <p>The main ignition sources through the existing adjoining car parks would be expected to be faulty motor vehicles;</p> <p>Potential for arson attack while remote is still possible.</p>
Fuel Sources	<p>The main fuel source throughout the commercial tenancies would be expected to be furniture; cellulosic items such as paper and other equipment associated with the tenancy;</p> <p>The main fuel source throughout any restaurant tenancy areas forming part of the new development would be expected to be combustible cooking oils equipment and furniture;</p> <p>The main fuel source throughout the car parks adjacent to the new construction would be expected to be motor vehicles.</p>

## 6.4 OCCUPANT CHARACTERISTICS

---

The characteristics of the occupant groups expected to be present in the building during the day-to-day operations of Westfield Penrith are detailed below:

- **Centre Management Staff and Security** – Good familiarity with the building and the fire safety systems, fully trained in emergency procedures. This occupant group is expected to be mobile and able to take and implement decisions independently and require minimal assistance during evacuation in a fire emergency. This occupant group is expected to be awake and fully conscious at all times when inside the building; and
- **Tenancy Staff** – Good familiarity with the respective shops and the means of exits from within the shops. Generally familiar with the building and the location of main exits. This occupant group is also expected to be able to take and implement decisions independently and require minimal assistance during evacuation in a fire emergency. This occupant group is expected to be awake and fully conscious at all times when inside the building; and
- **General Public (Customers)** – May or may not be familiar with the layout of the building and may require assistance in locating the exits. This occupant group may require assistance with walking and may have hearing and visual impairment in line with general public; and
- **External Maintenance Contractors** – This occupant group is expected to have a reasonable familiarity with the building and contractors will be required to undergo emergency training prior to commencing work in any portion of the building (prior to signing in as contractors). This occupant group is also expected to be able to take and implement decisions independently and require minimal assistance during evacuation in a fire emergency. The contractors are expected to be awake and aware of their surroundings at all times when inside the building; and
- **Fire & Rescue NSW Personnel** – this occupant group will be equipped with safety equipment and will be educated in fire-fighting activities and the dangers associated with fire incidents. This occupant group would be expected to be in a position to assist other occupants requiring assistance to evacuate. It is not expected that this occupant group would be present in the building at the time of fire ignition; however, they are expected to enter the building at a later stage to assist with the evacuation of occupants, if required, and to undertake fire suppression activities.

The occupant densities used in determining the occupancy levels and required egress times are to be confirmed by the PCA.

An Emergency Management Plan complying with AS 3745-2010 must be developed by the Centre management so that retail staff and security personnel within Westfield Penrith are familiar with the fire safety systems and the egress provisions within the building for an efficient evacuation of the Centre during a fire emergency.

---

## 7. ASSESSMENT DATA

---

Information related to this analysis is taken from the documentation identified in **Appendix “A”** of this report.

## 8. RELEVANT STAKEHOLDERS

This Fire Engineering Report has been developed by Fire Engineering Professionals Pty Ltd in collaboration and consultation with the following relevant stakeholders as identified in **Table 8.1** below:

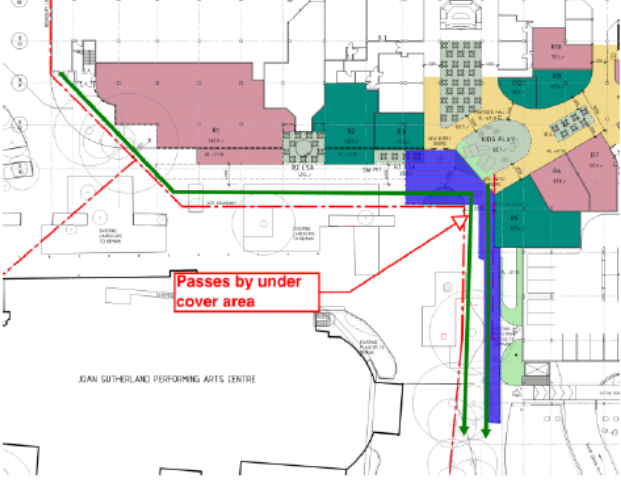
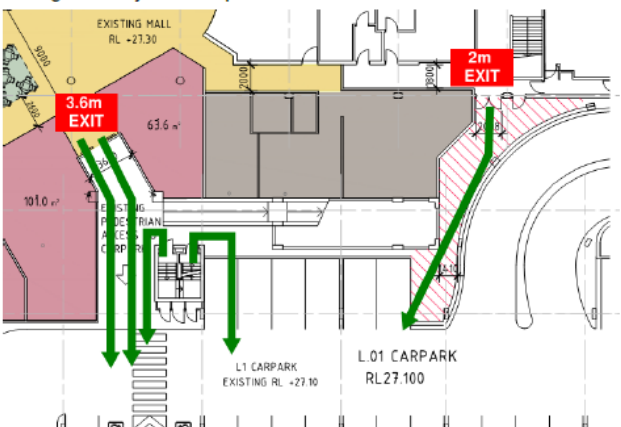
Role	Company
Client	Scentre Developments
Project Managers	Scentre Design & Construction
Local Government Authority (LGA)	Penrith City Council
Building Regulations Consultants	Steve Watson & Partners

**Table 8.1: Relevant stakeholders for the project**



## 9. BCA REQUIREMENTS ASSOCIATED WITH THE PROPOSED ALTERNATIVE SOLUTION

**Table 9.1** provides a description of the non-compliances with the BCA DTS provisions and BCA Performance Requirements associated with the Alternative Solution.

BCA Clause	Description	Issue	Performance Requirements
D1.7 & D1.10	Discharge from exits & Travel Via Fire Isolated Exits	<p>The path of travel to the public road from the Fire Isolated and non-fire isolated exits has a portion that is under cover</p> 	DP4
D1.7 & 1.10	Discharge from exits & Travel Via Fire Isolated Exits	<p>The exits nominated below will now be required to discharge through the adjacent carpark.</p> 	DP4 & EP2.2
E2.2	General Requirements	Smoke exhaust make up air will be effected by the new mall entry.	EP2.2

**Table 9.1: BCA Requirements Associated with the “Alternative Solutions” (extracted from BCA report prepared by Steve Watson & Partners)**

*Note: In addition to the non-compliances identified above, it is understood that the fire hydrant system is required to comply with the requirements of AS2419.1-2005. Any identified non-compliances will require an agreement with Fire & Rescue NSW.*

## 10. PERFORMANCE REQUIREMENTS

Performance Requirements of BCA 2019 identified in **Table 9.1** are provided in **Table 10.1** below:

Performance Requirement	Description
<b>DP4</b>	<p><i>Exits must be provided from a building to allow occupants to evacuate safely, with their number, location and dimensions being appropriate to—</i></p> <ul style="list-style-type: none"> <li><i>(a) the travel distance; and</i></li> <li><i>(b) the number, mobility and other characteristics of occupants; and</i></li> <li><i>(c) the function or use of the building; and</i></li> <li><i>(d) the height of the building; and</i></li> <li><i>(e) whether the exit is from above or below ground level.</i></li> </ul>
<b>DP5</b>	<p><i>So that occupants can safely evacuate the building, paths of travel to exits must have dimensions appropriate to—</i></p> <ul style="list-style-type: none"> <li><i>(a) the number, mobility and other characteristics of occupants; and</i></li> <li><i>(b) the function or use of the building.</i></li> </ul>
<b>EP2.2</b>	<ul style="list-style-type: none"> <li><i>(a) In the event of a fire in a building the conditions in any evacuation route must be maintained for the period of time occupants take to evacuate the part of the building so that—</i> <ul style="list-style-type: none"> <li><i>(i) the temperature will not endanger human life; and</i></li> <li><i>(ii) the level of visibility will enable the evacuation route to be determined; and</i></li> <li><i>(iii) the level of toxicity will not endanger human life.</i></li> </ul> </li> <li><i>(b) The period of time occupants take to evacuate referred to in (a) must be appropriate to—</i> <ul style="list-style-type: none"> <li><i>(i) the number, mobility and other characteristics of the occupants; and</i></li> <li><i>(ii) the function or use of the building; and</i></li> <li><i>(iii) the travel distance and other characteristics of the building; and</i></li> <li><i>(iv) the fire load; and</i></li> <li><i>(v) the potential fire intensity; and</i></li> <li><i>(vi) the fire hazard; and</i></li> <li><i>(vii) any active fire safety systems installed in the building; and</i></li> <li><i>(viii) fire brigade intervention.</i></li> </ul> </li> </ul>

**Table 10.1: Relevant Performance Requirements**



---

## 11. SIGNIFICANT FIRE SAFETY SYSTEM IMPLICATIONS

---

The significant fire safety upgrade requirements for the construction of Mondo Project on Level 1 and Level 2 are considered to be as follows:

### GENERAL REQUIREMENTS

---

1. All existing non-refurbished portions of the building (i.e. all areas except for those proposed to form part of new works associated with the Mondo Project construction) shall comply with the approved fire safety strategy for those areas except those modifications which are to be assessed as part of the Mondo Project; and
2. The building works required for the construction of the Mondo Project to be located on Retail Level 1 and Level 2 of Westfield Penrith shall comply with the DTS Provisions of the BCA except where specifically identified by Steve Watson & Partners; and
3. The requirements listed in this Section are to form Essential Services and shall be identified as requiring maintenance and certification at appropriate intervals as per AS1851-2012 and the EP&A Regulation 2000.

### 11.1 FIRE RESISTANCE AND COMPARTMENTATION

---

4. Combustible materials shall not be used / applied to the external walls or form part of the roof sheeting/awnings throughout the areas forming part of the Mondo Project and associated areas except where permitted under BCA DTS provisions.
5. Where glazing is located within 3m of the path of travel from the discharge point of the fire isolated exits, the glazing shall be protected in accordance with BCA DTS provisions unless an easement is created to ensure that the travel path from the discharge point of the fire isolated exit is at a minimum distance of 3m.
6. All sprinkler protected retail areas (Level 1 and Level 2) shall be separated from the non-sprinkler protected carpark areas by a distance which complies with BCA DTS provisions or be fire separated from the non-sprinkler protected carpark areas in accordance with BCA DTS provisions.

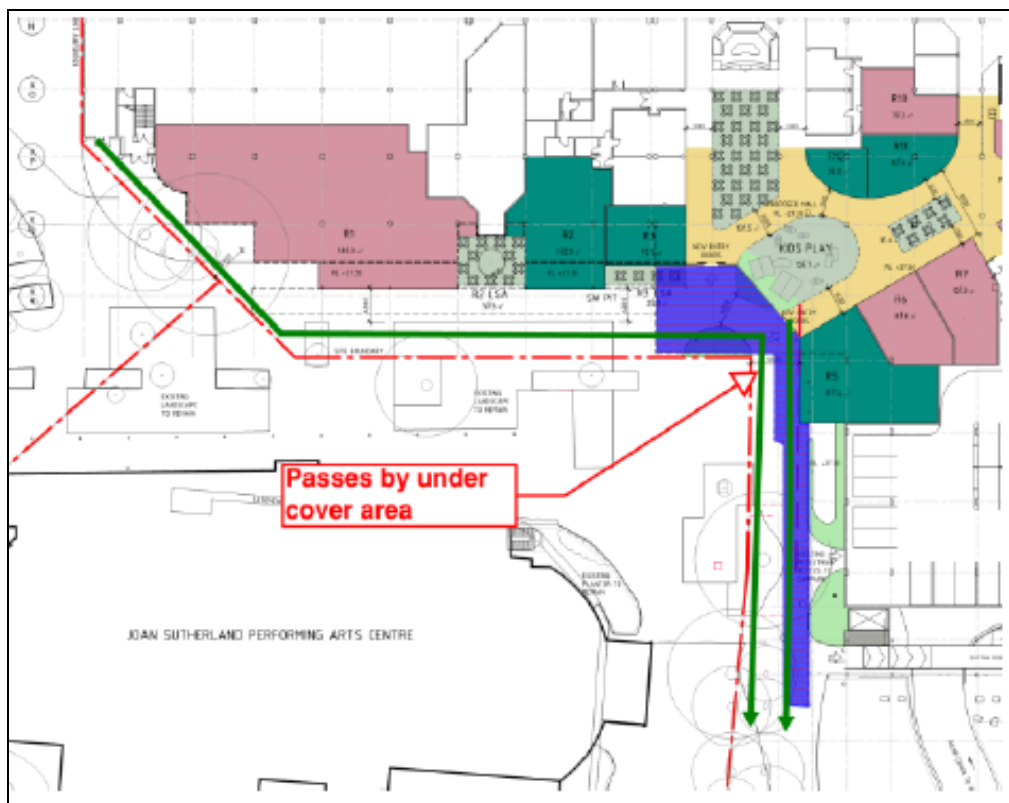
### 11.2 EMERGENCY EGRESS PROVISIONS

---

7. **Travel distances** throughout the proposed areas forming part of the Mondo Project including the common walkways and tenancy areas; associated back of house and other ancillary spaces at Westfield Penrith shall comply with the DTS provisions of BCA 2019.
8. **Aggregate emergency egress** width from the proposed new areas forming part of the Mondo Project including the tenancy areas and associated back of house and other ancillary spaces at Westfield Penrith shall comply with the DTS provisions of BCA 2019.
9. **Aggregate emergency egress** width from the existing mall areas which are impacted by the proposed works shall comply with BCA DTS provisions, however, the reduction from existing aggregate egress width shall be re-assessed to ensure that the increased evacuation time from the mall areas does not result in untenable conditions during occupant evacuation.
10. Scentre Group shall satisfy themselves in respect to the ability of the design to satisfy any special needs for persons with disabilities which are not covered under current

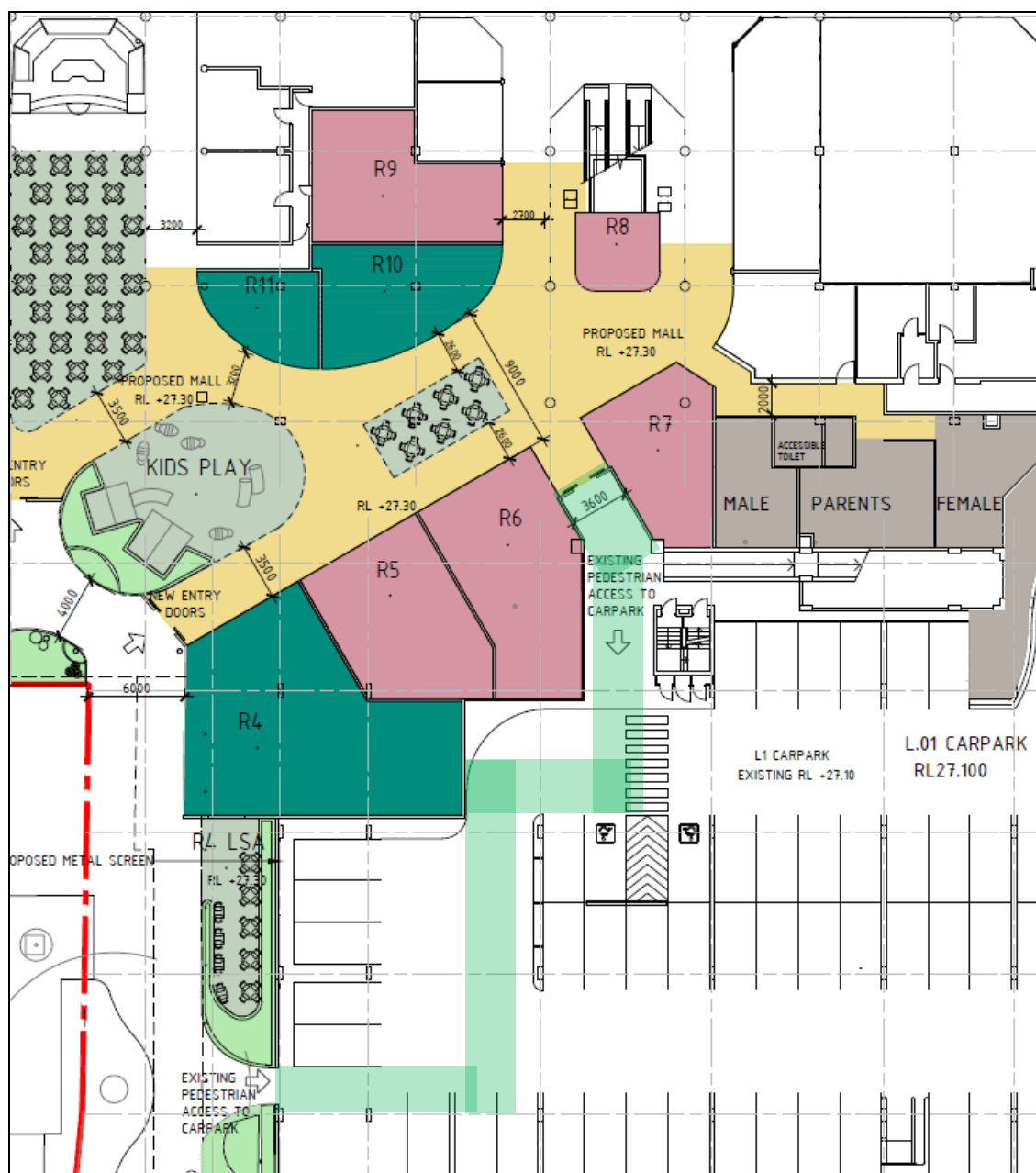
BCA 2011 fire safety provisions, including compliance with the Disability Discrimination Act 1992 etc.

11. Existing 'Open to sky' path of travel from the discharge point of fire isolated and non-fire isolated exits must remain as 'open space' with the exception of the awnings nominated in the BCA Report prepared by Steve Watson & Partners and shown in .



**Figure 11-1** Path of travel from the discharge point of the exits – extracted from BCA Assessment report prepared by Steve Watson & Partners

12. A clearly identified path of travel (as shown in **Figure 11-2** below) shall be provided from the discharge point of the existing exits from Westfield Penrith via the south western carpark to reach 'open space'. This path shall be line marked as a 'shared zone'. Strobe lights, which are linked to the fire detection system serving the shopping centre, shall be provided at appropriate locations along this path of travel to warn drivers of occupant (pedestrian) evacuation in a fire emergency.



**Figure 11-2 Path of travel from the proposed shopping centre exit via the carpark to reach 'open space'**

13. Scentre Group shall be responsible for ensuring the safety and protection of occupants when passing through, or evacuating through parts of buildings where moving vehicles may be present (i.e. exits passing through carpark, driveway areas, etc.). This shall take into account that these areas form major evacuation travel paths in the event of a fire emergency, and shall include the provisions of suitable safety features, warning devices, signage, crossings, barriers, etc.
14. It is understood that the path of travel from the discharge points of the exits from south western portions of Westfield Penrith necessitates passes along the allotment boundary. The Council Building (Joan Sutherland Performing Arts Centre) on the adjoining allotment is a significant distance (>6m) from this path of travel and from the new tenancies forming part of the Mondo Project. It is Scentre Group's responsibility to

engage a suitably qualified Fire Safety Engineer for a reassessment of emergency egress provisions via the area along the allotment boundary if there are any modifications made to the adjoining Council building which encroach upon the existing open space between the two (Council and Westfield) buildings.

### 11.3 SERVICES

---

15. Scentre Group have proposed the existing fire hydrant system to be extended to provide coverage to new and refurbished areas forming part of the Mondo Project. The portion of the fire hydrant system serving the new and refurbished areas of the building shall be fully audited against the requirements of with AS 2419.1-2005. Any non-conformances must be discussed with and approved by Fire & Rescue NSW.
16. The existing fire hydrant booster assembly which serves Westfield Penrith shall serve the new building extension associated with Mondo Project. This booster assembly shall comply with current BCA DTS and AS 2419.1 2005 requirements.
17. All **fire hydrants** proposed to serve the areas forming part of Mondo Project, including retail and ancillary areas shall be fitted with Storz hose couplings which comply with Clause 7.1 of AS2419.1-2005. This Clause states in part: "hose couplings shall be compatible with those used by the fire brigade serving the area". Storz hermaphrodite fire hose couplings must be fitted to all fire hydrants and fire hydrant booster assembly connections as required by Appendix E of AS2419.1-2005. The Storz fittings must be manufactured to DIN 14303, aluminium alloy delivery couplings, in accordance with Appendix A of AS2419.2-1994. Blank caps must be provided in accordance with Clause 2.8 of AS2419.2-1994.
18. The **automatic sprinkler system** shall be provided throughout the areas forming part of the new works on Level 1 and Level 2 (including any associated awning structures) in accordance with Clause E1.5 of BCA 2019 and AS2118.1-2017. The Sprinkler system shall comply fully with BCA DTS provisions.
19. All **sprinkler heads** throughout the including the new tenancies and associated areas which are adequately smoke separated from existing building areas must be "fast response" type with a temperature rating of 68°C, a maximum RTI of 50ms<sup>-1/2</sup> and a maximum C-factor of 1ms<sup>-1/2</sup>.
20. A fully addressable **fire detection and alarm system** shall be provided throughout the areas forming part of new works where required by the DTS provisions of BCA 2019.
21. The sound and intercom system shall comply with Clause E4.9 of BCA DTS provisions and AS1670.4-2018. The sound and intercom system shall be capable of providing pre-recorded evacuation messaging and allowing for live directives to be broadcast from the fire panel and at a point within the security office. Activation of either the fire detection and alarm or sprinkler systems shall activate the sound and intercom system.
22. The **automatic fire sprinkler and fire detection and alarm systems** serving all areas of the shopping centre shall be interfaced with the Fire Indicator Panel (FIP) and shall be linked to a 24 hour Monitoring Station via Alarm Signalling Equipment (ASE).
23. Scentre Group shall ensure that additional to any BCA DTS provisions, sufficient exit signage and directional exit signage is provided and maintained from the discharge point of the exits from existing portions of the building and the new areas via the outdoor egress path on Level 1 and via the Level 1 and Level 2 carparks to clearly direct the occupants to reach High Street.

24. Where a travel path necessitates passing through a carpark, this path shall be suitably line marked with adequate lighting and directional signage installed to enable occupants to reach road or open space via the carpark.
25. **Block Plans** for all primary fire services serving the building including but not limited to fire hydrant system, automatic sprinkler system, smoke detection and EWIS system and smoke exhaust system shall be updated to include the new construction and any other modifications and provided within the Fire Control Centre, Sprinkler Valve Room, Hydrant and Sprinkler Pump Rooms, Hydrant and Sprinkler boosters.

#### 11.4 SMOKE HAZARD MANAGEMENT

---

26. The existing smoke management systems serving Westfield Penrith building shall require reassessment due to the proposed modifications to the make-up air openings and emergency egress provisions serving the existing building.
27. The modified mall entry doorways located within or adjacent to the new works on Level 1 shall be programmed to open for the provision of make-up air for a fire scenario in the retail malls; and
28. All air handling systems serving the new tenancies shall comply with the DTS provisions of Part E2.2 of BCA 2019 such that any systems not required to operate during a fire shall be controlled to shut down in the event of a fire detection; and

#### 11.5 MANAGEMENT PROCEDURES

---

29. An 'Emergency Management Plan' for the Westfield Penrith building shall incorporate the modifications due to the construction of the new areas forming part of the Mondo Project. This plan shall be implemented and audited on a regular basis to maximise the effectiveness of the fire safety systems provided in the new areas associated with the construction of the new areas and the rest of the building. The plan should minimise the potential for shut-down of fire safety systems during trading hours and should detail the exact location of all fire safety measures in and around the buildings. As a minimum, the plan is to include:
  - a. Procedures to minimise the extent and duration of shut-down of any part of the sprinkler system when the shopping centre is trading. An approved Red Tag system shall be instigated for each shut down, which requires written permission from management before isolation can take place and a statement as to the length of isolation.
  - b. Documented procedures which ensure that prior to sprinkler isolation for tenancy fit out, all merchandise is removed from any tenancy subject to fit out; and
  - c. Documented procedures which ensure that prior to any authorised isolation of the ASE the Grade 1 Monitoring Company is notified of the extent and duration of any proposed isolation and is advised as soon as the shut-down has been completed; and
  - d. Procedures shall be implemented to minimise any potential for the simultaneous isolation of the sprinkler and smoke detection systems; and
  - e. Procedures shall be implemented for regular cleaning of the kitchen exhaust ductwork to minimise build-up of grease and other combustible materials within the ductwork; and

- f. Fire wardens in the shopping centre shall be trained to direct occupants away from the location of the fire horizontally before directing the occupants to the fire-isolated exits (i.e. occupants should not be directed to queue at exits that are in close proximity to the fire or smoke plume as there is an increased risk of these exits becoming untenable whilst occupants are queuing at these exits; and
  - g. Fire wardens in the shopping centre shall be trained to respond to a fire identified in Tenancies R6 and/or R9 and direct building occupants to alternative exits from the shopping centre with do not pass along the subject tenancies; and
  - h. All full time Centre Management and Security staff shall be trained as fire wardens and shall be inducted in the tenancy emergency evacuation procedures; and
30. The requirements listed in this Section are Essential Services and, as all fire safety systems, should be identified as requiring maintenance and certification at appropriate intervals as per AS1851-2012 and the EP&A Regulation 2000; and
31. Should a change in use or building alterations and/or additions occur in the future, a reassessment will be needed to verify consistency with the analysis contained within this report.

## 12. APPENDIX A – DOCUMENTATION

The following drawings were examined during the production of this report:

Drawing Description	Drawing No.	Revision	Drawn	Date
Site Analysis Plan	0.02	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Site Plan	1.00	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Demolition Plan Level 1 (Ground)	1.01	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Demolition Plan Level 1 (Mezzanine)	1.02	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Demolition Plan Level 2	1.03	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Proposed Plan Level 1 (Ground)	1.04	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Proposed Plan Level 1 (Mezzanine)	1.05	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Proposed Plan Level 2	1.06	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Proposed Plan Level 3 & Roof	1.07	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Sections / Elevations	2.01	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Sections / Elevations	2.02	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Sections / Elevations	2.03	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Artist Perspective 01	4.01	N/A	Scentre Design & Construction Pty Limited	01/10/2019
Artist Perspective 02	4.02	N/A	Scentre Design & Construction Pty Limited	01/10/2019