



Fire Engineering Report

78-88 Tench Avenue, Jamisontown, NSW

For Steven and Charles Sentas

30 September 2016 | Version B
132052

Australia | New Zealand | California
holmesfire.com

DOCUMENT CONTROL

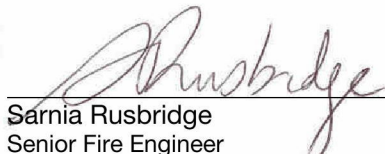
Project: 78-88 Tench Avenue, Jamisontown, NSW**Project No.** 132052

Version	Date	Status	Prepared	Reviewed
A	23 Sep 2016	Preliminary Issue for Review	SJR	JWO
B	30 Sep 2016	Final Report	SJR	JWO

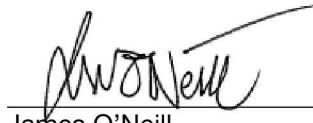
Version	Extent of Revision
B	Finalisation of report.

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ABOUT HOLMES FIRE

Holmes Fire is a professional engineering consultancy specialising in the field of fire and safety engineering, including performance based fire engineering, Building Code of Australia assessments and human behaviour analysis. These services are provided for all building classifications, both new and existing, and infrastructure projects.

As the largest specialist fire engineering firm in Australasia, with offices in Sydney, Christchurch, Wellington, Hawke's Bay, Auckland, Los Angeles, and San Francisco, Holmes Fire has extensive experience in delivering performance based fire engineering designs; having completed projects throughout Australia, New Zealand, the United States of America and the Middle East.

Holmes Fire is committed to providing superior service and value to our clients. This is done by finding innovative safety solutions that complement the architectural designs of buildings and meet the needs of Clients, Emergency Services, Approval Authorities and the building users. Holmes Fire believes in communicating effectively with all stakeholders and establishing ongoing relationships.

EXECUTIVE SUMMARY

This report addresses the proposed development to be located at 78–88 Tench Avenue, Jamisontown, NSW, for compliance with the relevant Performance Requirements of the Building Code of Australia (BCA), Volume One of the National Construction Code of Australia 2016. The proposed development will contain both one and two storey Class 6 retail tenancies and comprise Type C construction.

The area of design requiring a Performance Solution relates to the omission of onsite water storage for the hydrant system. It has been demonstrated that the connection of the suction point of the fire brigade hydrant booster connection direct to the mains prior to a backflow device will allow for adequate fire brigade intervention.

A performance based assessment has been carried out on this aspect of design, with the objective being satisfaction of the relevant Performance Requirements of the BCA, this being EP1.3. It has been established that this objective will be met by the proposed design of the building, with the completion of the items listed in the Schedule of Works. Comments raised by stakeholders during the fire engineering brief process have been incorporated into this report.

Ongoing compliance of the building with this report can be achieved by compliance with the following conditions:

- i. The Schedule of Works specified within Section 1.4 of this report is implemented and maintained; and
- ii. The Assumptions and Limitations specified within Sections 1.5 and 1.6 of this report are considered.

This report is provided in accordance with the fee proposal (132052SJR.F001, 16 September 2016) and 'Agreement for the Provision of Consulting Engineering Services', dated 20 September 2016, as executed between Holmes Fire LP and the Client. No obligations in contract exist between Holmes Fire LP and any other party.

It is assumed that the schedule of works, assumptions and limitations of this report are read, understood and implemented. Holmes Fire should be contacted if there are any queries in regards to the content. Holmes Fire takes no responsibility for the misinterpretation by others.

Where building alterations or a change of occupancy occurs, subsequent to the measures mentioned above being provided, the validity of this fire safety engineering analysis may be compromised and further analysis will be required.

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1. INTRODUCTION

1.1 Report Purpose

This report addresses the proposed retail development to be located at 78–88 Tench Avenue, Jamisontown, NSW for compliance with the relevant Performance Requirements of Building Code of Australia (BCA)^[1], Volume One of the National Construction Code of Australia 2016. The proposed development will contain one and two storey Class 6 retail tenancies and be of Type C construction.

The area of design requiring a Performance Solution relates to the omission of onsite water storage for the hydrant system. The Performance Solution proposed within this report complies with the relevant Performance Requirements of the BCA and has been undertaken in accordance with the guidelines set out in the International Fire Engineering Guidelines^[2] and the Engineers Australia Code of Ethics^[3]. Reference is made to the Guide to the BCA^[4] regarding the interpretation and intent of any BCA Clauses and Performance Requirements.

An inspection was not undertaken to investigate this issue of non-compliance due to the proposed nature of the development.

1.2 Relevant Stakeholders

The relevant stakeholders for the subject project are listed in Table 1-1.

Table 1-1: Relevant Stakeholders

Name	Company	Role
Steven & Charles Sentas	-	Client
Craig Squires	Penrith City Council	Certifying Authority
Ivica Djuric	Morson Group	Architect
Paul McDonald	InLine	Hydraulic Services
Sarnia Rusbridge	Holmes Fire	Fire Engineer

1.3 Fire Engineering Brief

Due to the type and extent of the non-compliances involved, a formal Fire Engineering Brief has not been undertaken. Telephone discussions with the relevant stakeholders were held prior to commencing the Fire Engineering Report.

Additional objectives relating to business continuity, property protection, or availability of insurances outside of BCA requirements were not raised during the Fire Engineering Brief stage. The objectives as relates to the fire brigade are to allow sufficient time to facilitate and undertake fire fighting and rescue operations.

1.4 Schedule of Works

The following works in Table 1-2 are to be implemented within the building to satisfy the requirements of this fire safety engineering assessment. Note that the nominated relevant party is an indicative guide only.

Table 1-2: Schedule of Works

Item	Description of Works Required	Relevant Party(s)
Services		
1 – Fire hydrant system	<p>The hydrant system is to comply with AS 2419.1-2005 other than in relation to:</p> <ul style="list-style-type: none"> • An onsite storage tank is not required. • The suction point of the fire brigade hydrant booster is to be connected direct to the town mains prior to the backflow device. 	Fire / hydraulic consultant
Signage		
2 – Hydrant signage	<p>Signage is to be provided at the booster near the suction point stating:</p> <p>“SUCTION DIRECT FROM MAINS”</p> <p>The sign is to be permanently and securely mounted and of appropriate construction to be suitable for the environment in which it is located. Laminated signs are not acceptable. The lettering is to be in capitals, no less than 30 mm in height and in a colour contrasting with the background. The block plan is to clear show the location of all points and valves.</p>	Fire / hydraulic consultant
Management		
2 – Performance Solution Notice	<p>A permanent notice is to be provided adjacent to the Annual Fire Safety Statement, advising that the building is subject to a performance based design. The sign, see Appendix A, is to be printed to at least A4 size, and be securely mounted.</p> <p>Note that this sign is not to be mounted to a fire rated or smoke proof element in a manner which may compromise that element.</p>	Owner
3 – Fire Safety Schedule	This Fire Engineering Report is to be specifically listed on the Interim and / or Final Fire Safety Schedule.	Principal Certifying Authority
4 – Annual Fire Safety Statement	This Fire Engineering Report is to be specifically and continuously listed on the Annual Fire Safety Statement.	Owner

1.5 Assumptions

1.5.1 Building Code of Australia Compliance

The primary assumption of this report is that, with the exception of the non-compliance addressed within, the remainder of the design for the building complies with the Deemed-to-Satisfy Provisions of BCA 2016 for fire safety.

The implementation of the “Schedule of Works” detailed in Section 1.4 will allow the proposed design to satisfy the relevant Performance Requirements of the BCA with respect to the addressed non-compliances.

The assessment undertaken has demonstrated that the Performance Solution complies with the BCA and therefore achieves an acceptable level of fire safety. Performance and Deemed-to-Satisfy Solutions do not, and cannot, provide an absolute level of fire safety.

This Fire Engineering Report has been prepared based upon information provided to Holmes Fire. Holmes Fire has not verified the accuracy or completeness of this information and assumes that the information provided is accurate and complete. Holmes Fire shall not be responsible for any errors or omissions which may be incorporated into this report as a result.

1.5.2 Generally

It is assumed that the schedule of works, limitations and assumptions of this report are read, understood and implemented. Holmes Fire should be contacted if there are any queries in regards to the content. Holmes Fire takes no responsibility for the misinterpretation by others.

Statements within this report such as 'adequate safety will be provided' or 'the level of safety / risk will not be reduced', and the like, are considered to be definitive statements only to the degree expected in all reasonable likelihood. Such statements are subject to the assumptions and limitations within this report and the possibility of the converse statement is not excluded.

1.6 Limitations

1.6.1 Regulatory Requirements

A number of issues within the BCA are recognised to be interpretive. Where these issues are encountered, interpretations have been made consistent with Holmes Fire policy which is believed to be in accordance with standard industry practice.

1.6.2 Beyond Regulatory Requirements

The design proposed herein complies with the Performance Requirements of the BCA, as applicable to fire safety, which is primarily concerned with life safety, protection of neighbouring properties and fire brigade intervention. Note that tenable conditions may not be maintained close to the fire.

Unless specifically requested by the client or stated in this report, issues above and beyond the BCA fire safety requirements have not been considered. This may include, but not be limited to, property protection, business continuance, egress for persons with disabilities, and extent or availability of insurance. Other legislative requirements which have not been considered include the Disability Discrimination Act, and Work Health & Safety and Dangerous Goods legislation. It is assumed that these and all other legislative requirements are satisfied as applicable and that occupants persons with disabilities have appropriate person evacuation plans that give consideration to the fire services in the building.

Multiple fires, explosion, malicious acts and acts of terrorism have not been addressed within this report as they are not considered to be a reasonable scenario in this instance.

1.6.3 Generally

Where building alterations or a change of occupancy occurs, the validity of this fire safety engineering analysis may be compromised and further analysis will be required. The data, methodologies, calculations and conclusions within this report relate to the subject building and must not be used for any other purpose.

This report specifies a Schedule of Works. The detailed design, then construction, of items and systems identified in that schedule is the responsibility of others. To increase the likelihood that 'as built' components of the Schedule of Works are constructed as specified, it is our recommendation that construction review be provided by ourselves. Unless Holmes Fire is commissioned to provide those services, we are not liable for any shortcomings of construction. If we are engaged for construction review, our liability is as set out in the associated agreement for professional services.

2. BUILDING CHARACTERISTICS

2.1 Description of Building

The building is a proposed retail development with the tenancies located in two blocks separated by approximately 6 m. The development will include the existing Coffee Club tenancy, with additional retail tenancies on either side. One tenancy (T4) will have an internal stair connecting to an upper storey. A common amenities and waste room area will be provided at the rear of the building. External on grade parking is provided to the rear of the site.

The general description of the building under the Deemed-to-Satisfy Provisions of BCA 2016 is as indicated in Table 2-1.

Table 2-1: BCA General Description

BCA Clause	Description
A1.1 Effective Height	3 m
A3.2 Classification	Class 6 – Retail
C1.1 Type of Construction Required	Type C construction
C1.2 Rise in Storeys	2, with 2 storeys contained
C2.2 Floor Area and Volume Limitations	<p>Class 6</p> <p>Maximum floor area: 2,000 m²</p> <p>Maximum volume: 12,000 m³</p> <p>These size limitations for the fire compartment is not exceeded based on the southern block having an area of ~ 1,450 m² and the northern block having an area of ~ 1,150 m².</p>

2.2 Location of Building

The subject development will be located in a semi-rural area to the south of Nepean River. The surrounding area contains farmland and residential houses. Regentville Fire Brigade is located on Jeanette Street, approximately 2.9 km by road from the subject building. One other fire station is located less than 5 km by road from the subject building; being Penrith (4.7 km).

2.3 Fire Safety Provisions

The building is to be provided with the required BCA Deemed-to-Satisfy compliant fire safety measures, with additional or modified fire safety measures as required by this Fire Engineering Report. It is the Certifying Authority's responsibility to determine the complete list of fire safety measures. The fire safety measures listed in Table 2-2 are generally additional to, or modifications of, the Deemed-to-Satisfy compliant measures. It is assumed that all of these systems will be suitably operable and appropriately maintained. Note that this list is provided for general information only and does not cover all essential fire safety measures within the building.

Table 2-2: Fire Safety Provisions

Fire Safety Provisions	Standard of Performance
Fire Engineering Report	Fire Engineering Report 132052.FER01b, dated 30 September 2016, prepared by Holmes Fire
Fire hydrant system	BCA 2016 Clause E1.3, AS 2419.1-2005, Holmes Fire Report

3. OCCUPANT AND BUILDING CHARACTERISTICS

3.1 Description of Occupants

The characteristics of occupants in a building can have a significant impact on the evacuation behaviour and the total evacuation time for a building.

Occupants within the tenancies will be made up of staff and customers who may consist of adults, elderly and children. Occupants can consist of people from a wide range of cultural, educational, demographic and religious backgrounds. The diversity in backgrounds can result in different behaviours and actions in the event of a fire. People with disabilities may also be present to the same proportion as expected within the general population.

If a fire occurs within the tenancies, all occupants are assumed to perceive the fire alarm, but most customers, unless intimate with the fire, are not likely to commence evacuation until encouraged by staff or instructed by a voice alarm^[5, 6]. Under WH&S legislation the building is required to have an evacuation plan, such that it is assumed that some individuals within the building will take on an active role for initiating and facilitating the evacuation movements and reporting. Research has shown that the normal roles of occupants are critical in a successful evacuation^[7] and that occupants in the social setting of a retail or restaurant area are likely to react in a similar way to those around them^[5] so as not to appear out of place. This reinforces the need for effective staff intervention in initiating the evacuation of customers.

At the time of the fire occupants are assumed to be awake and either sitting or standing. Staff and customers, other than those within a restaurant area, are not expected to be intoxicated by alcohol or other substances. Occupants may delay initiating their evacuation whilst they meet up with family members or friends, complete their purchase, finish their food, pay for their food, secure stock and / or cash and or investigate and possibly attempt to fight the fire.

Occupants are more likely to choose exits they are familiar with, especially the way in which they entered^[5]. Customers may not be familiar with the layout of the entire building, but as each tenancy is small and provided with an exit directly to outside, occupants are expected to be able to locate the exit. The staff within the tenancies are expected to be familiar with their portion of the building and are expected to 'sweep' the tenancy and ensure all customers have evacuated prior to initiating their own evacuation.

3.2 Number of Occupants

Based on the occupant density specified within Table D1.13 of the BCA for a shop occupancy (at a level entered directly from the open air), that being 3 m² per person, or a restaurant, that being 1 m² per person, the occupant load for the building is assumed to be between 630 – 1,891 occupants.

Note that no allowance has been made for the provision of back-of-house areas, therefore the occupant numbers provided are considered to be highly conservative.

3.3 Building Design

The building is to comprise Type C construction, and as the external walls are more than 3 m from any boundary, there is no requirement to fire rate any building elements. The building will contain multiple tenancies separated by non-fire rated construction. Each tenancy will contain large amounts of glazing and will be provided with egress directly to an open space. The largest fire compartment is expected to be under 1,500 m² in total area.

The use of the building, as understood by Holmes Fire, is not anticipated to result in an increased risk from that ordinarily expected of a Class 6 use.

4. PROPOSED ASSESSMENT SUMMARY

4.1 Compliance with BCA Part A0

Table 4-1 outlines the issue of non-compliance with the BCA Deemed-to-Satisfy Provisions that is the subject of this Fire Engineering Report. The Performance Solution is to satisfy the relevant Performance Requirements of the BCA. Consideration has been given to the requirements of Clause A0.10 in determining the relevant Performance Requirements.

Table 4-1: Fire Hydrant System Non-Compliance

Fire Hydrant System Non-Compliance Summary	
Relevant BCA Clause	Clause E1.3
Deemed-to-Satisfy Non-Compliance	The building is required to be provided with a fire hydrant system in accordance with AS 2419.1-2005. Due to the pressures provided by the street mains, on-site water storage is required. An on-site water storage tank is proposed to be omitted from the development.
Relevant BCA Performance Requirement	EP1.3
Assessment Method	The Performance Solution is to comply with the BCA by way of BCA Clause A0.3(a)(i) 'complies with the Performance Requirements'. Assessment is to be via BCA Clause A0.5(b)(ii) 'other verification methods', by way of a deterministic qualitative assessment.
Subsystems	Sub-system F (Fire Services intervention) will be considered.
Acceptance Criteria	Adequate facilities are to be provided to allow for fire brigade intervention.
Performance Solution	As the town mains provides adequate flows, it is proposed to connect the suction side of the fire hydrant booster connection directly to the town mains, before the backflow valve, so that adequate pressure can be achieved by the system.

5. ANALYSIS OF FIRE HYDRANT SYSTEM

5.1 Introduction

The building is required to be provided with a fire hydrant system in accordance with AS 2419.1-2005. Due to the pressure provided in the street mains, on-site water storage is required. An on-site water storage tank is proposed to be omitted from the development.

5.2 Analysis Approach

The qualitative analysis of the fire hydrant system has been undertaken with consideration to sub-system F (Fire Services intervention).

An absolute approach has been undertaken. In this approach the results of the subject analysis are matched, using the agreed acceptance criteria, against the Performance Requirements without comparison to Deemed-to-Satisfy designs.

Where the fire safety performance achieved by the Performance Solution is established as meeting the relevant acceptance criteria, the Performance Solution has been shown to be acceptable. As a result, the BCA Performance Requirement that corresponds with the Deemed-to-Satisfy non-compliance (EP1.3) is satisfied.

5.3 Deemed-to-Satisfy Provisions

BCA Clause E1.3(b) states:

“The fire hydrant system must be installed in accordance with AS 2419.1”

The Guide to the BCA states that the intent of this Clause is to require the installation of suitable fire hydrant systems to facilitate the fire brigade’s firefighting operations.

5.4 Performance Requirements

Performance Requirement EP1.3 states:

“A fire hydrant system must be provided to the degree necessary to facilitate the needs of the fire brigade appropriate to-

- (a) fire-fighting operations; and*
- (b) the floor area of the building; and*
- (c) the fire hazard.”*

The Guide to the BCA states that the intent of installing a fire hydrant system is to provide adequate water, under sufficient pressure and flow, to allow the fire brigade to fight fires.

As set out in EP1.3, a fire hydrant system must be installed when necessary, and be appropriate to a number of factors, including:

- the need to meet the requirements of the local fire brigade (because of the pressures and flows), fire hydrants should only be used by the fire brigade;
- the floor area of the building which is a measure of the size of any potential fire; and
- the fire hazard which means the danger in terms of potential harm and degree of exposure arising from the start and spread of fire, and the smoke and gases generated by a fire.

Clause E1.3 provides a number of examples where fire hydrants must be installed if the proposal being considered involves a Building Solution which uses the Deemed-to-Satisfy Provisions. If an Alternative Solution is used, it may be appropriate to assess it using Clause E1.3 for guidance purposes. However it is stressed that compliance with Clause E1.3 is not compulsory if alternative means can be found to satisfy the appropriate authority that the Performance Requirements will be achieved.

5.5 Fire Scenarios

A single fire will be assumed to occur in one location at one time only. Multiple fires are not considered.

Fires are anticipated to initially be smouldering, developing to a flaming fire. Should occupant intervention not extinguish the fire, it is assumed that the fire may progress to a flashover scenario. For this assessment, fires are assumed to occur anywhere within the building requiring fire brigade intervention.

5.6 Acceptance Criteria

Adequate facilities are to be provided to allow for fire brigade intervention.

5.7 Analysis

Table 2.2 of AS 2419.1 requires feed hydrants to achieve an unassisted flow of 10 L/s at 150 kPa. Two hydrants are required to flow simultaneously based on the size of the fire compartments, meaning the system is required to provide a minimum flow of 20 L/s. External fire hydrants are to be provided around the building to achieve compliant coverage as attack hydrants, with the required pressures achieved by a pump. The booster is considered to also be a feed hydrant, and so needs to achieve the required flows and pressures.

Based on the Statement of Available Pressure and Flow from Sydney Water dated 20 August 2016, the 100 mm mains in Tench Avenue achieves an 80 kPa pressure to achieve the required 20 L/s flow. A backflow device is required to be installed between the street mains and the booster, thereby reducing the pressure to 10 kPa. As the required pressure is not available at the booster, an on-site water storage tank is required for fire brigade supply.

A Class 6 fire compartment with an area of less than 500 m² is only required to have one hydrant outlet discharging at any time. For an area greater than 500 m² and up to 5,000 m², two hydrants are required to discharge simultaneously. The largest tenancy (T1) has an area of 400 m². All tenancies and common areas are separated by lightweight steel stud walls, with the two blocks separated by 6 m. Due to the physical and spatial separation of the tenancies, it is unlikely that the entire building would be involved in fire at once, and therefore the fire area is expected to be well under 5,000 m². As the fire area at any one time is expected to be fairly small, brigades may only require one hydrant to control the fire.

The first attending appliance is expected to connect directly to an external hydrant and initially use it as a feed hydrant, running one or two lines from the appliance. In this scenario, adequate pressures and flows will be achieved by the onsite pump and the appliance. A subsequent appliance may connect to the booster, to further pressurise the system and convert the external feed hydrants to attack hydrants. Due to the requirement for a backflow device, the appliance at the booster may not have enough pressure from the mains to be able to draw the required water to then boost the system. It is therefore proposed to take the feed directly from the mains, prior to the backflow device, as shown schematically in Figure 5-1.

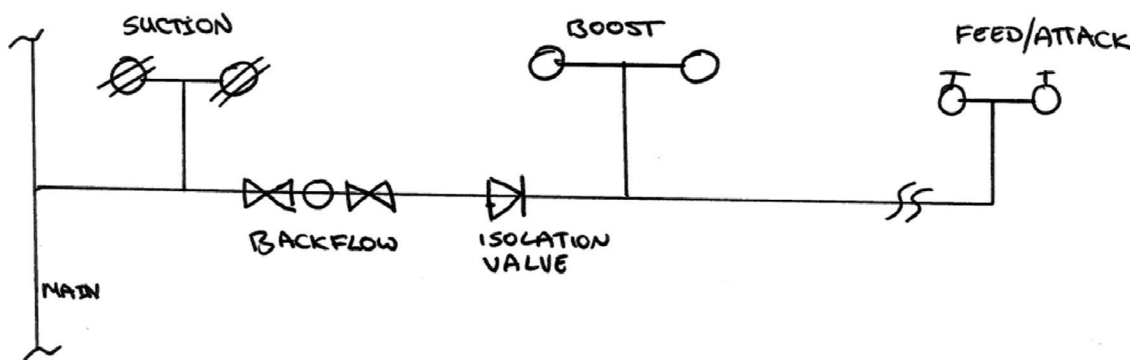


Figure 5-1: Hydrant Schematic

Signage is to be provided at the booster near the suction point stating:

“SUCTION DIRECT FROM MAINS”

The sign is to be permanently and securely mounted and of appropriate construction to be suitable for the environment in which it is located. Laminated signs are not acceptable. The lettering is to be in capitals, no less than 30 mm in height and in a colour contrasting with the background. The block plan is to clearly show the location of all points and valves.

The provision of a suction point directly into the mains is no different than what would occur for a building with no onsite hydrant system. In this design, brigades would connect a standpipe directly into the mains, which would then act as the suction point for fire fighting activities. Therefore the impact of the proposed system is no different than for many other buildings.

5.8 Summary

This assessment has demonstrated that the proposed fire hydrant booster suction connecting directly to the town mains provides a level of fire safety that complies with the Performance Requirements in relation to fire brigade intervention.

As a result, EP1.3, the relevant BCA Performance Requirement, is satisfied by the Performance Solution through application of Clause A0.3(a)(i) and consideration of sub-system F, based on the implementation of the Schedule of Works in Section 1.4 of this report.

‘Compliance with the NCC is achieved by satisfying the Performance Requirements by a Performance Solution that complies with the Performance Requirements.’

Table 5-1: Satisfaction of Performance Requirement EP1.3

Performance Requirement	Performance Solution
A fire hydrant system must be provided to the degree necessary to facilitate the needs of the fire brigade appropriate to –	
(a) Fire-fighting operations; and	The provision of a suction point direct from the town mains will provide adequate water for fire brigade personnel to undertake fire fighting activities.
(b) The floor area of the building; and	
(c) The fire hazard.	

6. BUILDING FIRE SAFETY COMPLIANCE

The design of a building is only one element of the process of achieving an appropriate level of fire safety over the life of the building. The following sub-sections list areas for consideration beyond the design stage.

6.1 Construction, Commissioning and Approval

For construction compliance the works required in Table 1-2 to satisfy the Performance Solutions are to be appropriately designed, installed and commissioned prior to issue of an Occupation Certificate. It is the responsibility of the Certifying Authority to ensure these works are completed. To ensure these works are appropriately completed, it is recommended that Holmes Fire be engaged to undertake inspections of the building prior to occupation.

A visual inspection of the active and passive measures, in addition to witnessing of active systems, listed within the Schedule of Works will be required to be undertaken. Certification will be required from designers, suppliers and installers confirming compliance with the requirements of this report. Holmes Fire will provide a detailed list of the inspection, witnessing and certification requirements prior to commencing construction inspections. Holmes Fire can also undertake a review of design documentation for consistency with the requirements of the Fire Engineering Report. This will not be a detailed review of compliance with the BCA Deemed-to-Satisfy Provision or Australian Standards and will not include the provision of a Compliance Certificate for these works.

6.2 Ongoing Fire Safety Compliance

Ongoing compliance over the life of the building requires regular maintenance and testing of essential fire safety measures by appropriate persons. It is a requirement of EP&A Regulation Clause 177 that owners provide documentation to the Council and the Fire Commissioner each year, in the form of an Annual Fire Safety Statement, to record required testing and maintenance of essential building systems. Holmes Fire can offer our consultancy services to assist building owners ensure fire safety is maintained on the premises, and hence meet legislative requirements.

7. REPORT BASIS INFORMATION

The report is based on the following:

- i. Statement of Available Pressure and Flow from Sydney Water dated 20 August 2016;
- ii. Hydraulic services Ground Floor Plan, H02/P2, 28 September 2016, prepared by Inline Hydraulic Services; and
- iii. Architectural drawings, prepared by Morson Group and as listed in Table 7-1.

Table 7-1: Referenced Architectural Drawings

Dwg no.	Title	Date	Issue
A002	Site Plan	29 Sep 2016	B
A101	Proposed Ground Floor Plan	29 Sep 2016	B
A102	Proposed Roof & Upper Level Floor Plan	29 Sep 2016	B
A201	Proposed Elevations + Sections	29 Sep 2016	B

8. CONCLUSION

This report has assessed the provision of fire safety of the proposed retail building at 78–88 Tench Avenue, Jamisontown, NSW, in relation to fire hydrant requirements.

The objective for the design, Performance Requirement EP1.3 of BCA 2016, has been satisfied. In order that the building design can satisfy the assumptions made in this analysis, the items listed in the Schedule of Works section are to be implemented in the building.

Where building alterations or a change of occupancy occurs, the validity of this fire engineering analysis may be compromised and further analysis will be required.

9. REFERENCES

1. Australian Building Codes Board, *National Construction Code Series 2016, Volume 1, Building Code of Australia, Class 2 to Class 9 Buildings*. Australian Building Codes Board, CAN, Australia, 2016.
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APPENDIX A PERFORMANCE SOLUTIONS NOTICE



78–88 TENCH AVENUE, JAMISONTOWN, NSW

A PERFORMANCE SOLUTION HAS BEEN APPLIED TO THIS BUILDING.

This relates to the fire hydrant system and the omission of an on-site water storage tank.

Refer to Fire Engineering Report, 132052.FER01b, Version B, 30 September 2016 September 2016, by Holmes Fire.

This report specifies building works and services which are required to be inspected as part of the Annual Fire Safety Certification process.

Where building alterations or a change of occupancy occurs, the validity of this fire safety analysis may be compromised.

Please contact Holmes Fire prior to undertaking any alterations and to assist with the annual certification process.

SYDNEY

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