Freedom of Information Document Schedule for FOI: File: 701-022-0015

Name:

Re: Establishment and operations of Energy Services Invironmental (ESI), a company which provided dechlorination and recycling services from a site on Dacre Street in Mitchell.

Document Number	Page Number	Description of Document	Date of Document	Status: Full Release, Partial or Exempt	Reason for Exemption: Section 37 (1)(a) Documents affecting enforcement of the law and protection of public safety Section 41(1) Documents relating to personal privacy. Section 43 Documents relating to business affairs	Details
1	1	Plan Assessment Cover Sheet - Fire Safety Section	6/02/2009	Partial Release	Section 41 (1)	Names, Telephone numbers, Facsimile number
2	2	Plan Assessment/Inspection Request Form	9/02/2009	Partial Release	Section 41 (1)	Names, Telephone numbers, Facsimile number, signature
3	3	Email regarding Block 15 of 22 Mitchell	19/02/2009	Partial Release	Section 37 (1)(a)	Names, Business details, Telephone numbers
4	4	Email Delivery Receipt regarding Block 15 of 22 Mitchell	19/02/2009	Partial Release	Section 37 (1)(a)	Names
5	5	Email Read Receipt regarding Block 15 of 22 Mitchell	19/02/2009	Partial Release	Section 37 (1)(a)	Names
6	6-9	ACT Fire Brigade Fire Safety Section Plan Report	19/02/2009	Partial Release	Section 37 (1)(a) Section 41 (1)	Names, Signatures, Telephone numbers, email addresses, business details
7	10	Fax cover sheet - ACT Fire Brigade Fire Safety Section Plan Report	19/02/2009	Partial Release	Section 37 (1)(a) Section 41 (1)	Names, Telephone numbers, facsimile numbers, business details
8	11-21	Preliminary Assessment Evaluation for the Proposed Oil Recylcing Facility (Block 15 Section 22 Mitchell, ACT)	27/08/2008	Partial Release	Section 37 (1)(a) Section 41 (1)	Names, Signatures, Business details
9	22-24	Hydraulic Services First Floor & Roof Plan & Details, Ground Floor Plan, Cover sheet and notes – Block 15, Section 22 Mitchell	10/02/2009	Partial Release	Section 43	Business Details
10	25	Excerpt from Defire – Alternative Solution Report – Block 15, Section 22, Mitchell, ACT Section 22 Mitchell	Undated	Full Release		
11	26-27	Inspection Details	23/12/2009	Partial Release	Section 41 (1)	Names
12	28-43	Alternative Solution Report – Block 15, Section 22, Mitchell, ACT	1/07/2009	Partial Release	Section 41 (1) Section 43	Names, Telephone numbers, facsimile numbers, business details
13	44-47	ACT Fire Brigade Alternate Building Solution Review	12/01/2010	Partial Release	Section 37 (1)(a) Section 41 (1)	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
14	48	Certificate of Compliance - Illuminated exit and directional signs	22/12/2009	Partial Release	Section 41 (1) Section 43	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
15	49	Certificate of Compliance - Emergency lights	22/12/2009	Partial Release	Section 41 (1) Section 43	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
16	50	Fire Hydrant Design Certification	1/02/2010	Partial Release	Section 41 (1) Section 43	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
17	51	Certificate of Compliance for fire hose reels and hydrants	20/01/2010	Partial Release	Section 41 (1) Section 43	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
18	52	Installation Certificate Fire Extinguishers	15/12/2009	Partial Release	Section 41 (1) Section 43	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
19	53-55	Inspection Report	1/02/2010	Partial Release	Section 41 (1) Section 43	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
20	56	Fax cover sheet - ACT Fire Brigade Fire Appliances Approval Certificate	8/02/2010	Partial Release	Section 41 (1)	Names, business details, Facsimile number
21	57-59	ACT Fire Brigade Fire Appliances Approval Certificate	4/02/2010	Partial Release	Section 37 (1)(a) Section 41 (1)	Names, Signatures, Telephone numbers, Facsimile numbers, email addresses, business details
22	60	Email regarding 60 Dacre Street Mitchell, Oil Storage and processing Facility	8/02/2010	Partial Release	Section 37 (1)(a)	Names
Total Documents						
22						

Full = 1
Partial 37 = 9
Partial 41 = 16
Partial 43 = 8

60

From:
Sent: Monday, 8 February 2010 2:37 PM
To:
Cc:
Subject: 60 Dacre st Mitchell, Oil Storage and processing Facility

as discussed last week the fire brigade will be conducting a operation familiarisation inspection of a new oil processing and storage facility at 60 Dacre St Mitchell. The facility will not be fitted out with the processing equipment for about 5 weeks.

I will let you know when the inspection will take place and I hope you will be able to attend.

Regards

Station Officer
ACT Fire Brigade

File
701-022-0015
371
4.11.2011
60 DACRE ST.

Fire Safety Section (ph) fax

ACT FIRE BRIGADE FIRE APPLIANCES APPROVAL CERTIFICATE

Inspection and approval testing of the active fire safety systems (fire appliances) in the scope of building works was conducted in accordance with Schedule 2 Part 2.2 of the Building (General) Regulation 2008. The plan report is provided in accordance with Section 5.4 of the Emergencies Act 2004.

On the basis that the test results were deemed satisfactory at the time of the inspection, please accept this letter as confirmation of the ACT Fire Brigade's approval of the active fire safety systems for the scope of building works.

---

1. Date of Inspection: **4th February 2010**

2. ACTFB Reference: 701-022-0015

3. Building Name: **Oil Recycling Facility**
60 Dacre St. Mitchell

4. Block, Section & Suburb: 15 of 22, Mitchell

5. Scope of Building Works
New Building (including fitout)

6. Building Certifier

7. This ACT Fire Brigade Fire Appliances Approval Certificate is hereby conditional on the following:

(i) The following active fire safety systems (fire appliances) are to be maintained in accordance with 7(ii) and remain operable as designed throughout the life of the building:

- AS1841.1 **Portable fire extinguishers**
  - A 3.5Kg CO_2 or 4.5kg dry chemical powder extinguisher is to be retained beside any fire hose reel and to the requirements of BCA Clause E1.6 & AS2444 Note: The discharge of a dry chemical powder extinguishant may have an adverse affect on sensitive electronic equipment.
  -
- AS2293.3 **Emergency and exit lighting**
  Installed to AS2293.1

- AS2419.1 **External fire hydrant(s)**
  Each hydrant location to be denoted by a blue hydrant indicator that will be readily visible to responding fire brigade crews via the principal access to and around the premise.
- AS1221 **Fire hose reels**
  Installed and located to the requirements of BCA Clause E1.4 & AS2441
- AS1670.1 **Occupant Warning System**

(ii) As required by Section I (Equipment & Safety Installations) of the Building Code of Australia 2009 (As Amended), all of the installed passive and active fire safety systems are deemed by the ACTFB to be essential services and are to be remain functional as designed and maintained in accordance with the provisions of the relevant maintenance Australian Standards, the ACT Emergencies ACT 2004 and any ACTFB policy, throughout the life of the building.

(iii) Full compliance to the fire safety design (including all active and passive fire safety systems) incorporated in any alternative solutions report is maintained throughout the life of the building.

(iv) All of the Management-in-Use Requirements and Emergency Management planning (ie. AS3745 Emergency Control Organisation and procedures in buildings) as detailed in any alternative solution report for the building are implemented throughout the life of the building.

(v) Full compliance to the 'Conditions for ACT Fire Brigade Approval' that have been set in any ACTFB alternative solutions report commentary is maintained throughout the life of the building.

(vi) Any change in the building design or size, its proximity to fire hazards or fire source features, any alternative solution, fire safety measures, occupant classification/mobility, fuel load conditions, or in any changes impacting on fire service response will require further ACTFB consultation and subsequent approval and may affect ACTFB approval of the active fire safety systems for the scope of building works

(vii) At no time, will the owner/manager of the building and/or a person lawfully occupying the building contravene any of the offences listed in the ACT Emergencies ACT 2004.

(viii) The Building Certifier and/or project manager for the building works are to ensure the owner/manager of the building(s) is aware of the directions and recommendations the ACTFB have set for this Fire Appliances Approval Certificate.

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8. To further safeguard building occupants from the effects of a fire emergency, it is highly recommended that a well-managed evacuation management plan and procedures be established, including accredited fire warden training and periodic evacuation drills. (Ref: AS3745 Emergency Control Organisation and procedures for buildings, structures and workplaces).

9. In accordance with Part 5 of the Building Act 2004, final approval of the building works is the responsibility of the Building Certifier.

10. Certification received and placed on file.

Company	**Date**	**Certification**
	1/02/2010	Letter of Support
	20/01/2010	Hydrants/Hosereels
	22/12/2009	Emergency & Exit Lighting
	4/02/2010	Extinguishers

Report Prepared By:	Station Officer		08/02/10
Report Verified By:	Station Officer		08/02/10

For the Chief Officer ACT Fire Brigade

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* * * Memory TX Result Report (8.Feb. 2010 14:33) * * *

ate/Time: 8.Feb. 2010 14:32

le lo.	Mode	Destination	Pg(s)	Result	Page Not Sent
181	Memory TX		P. 3	OK	

Reason for error
E.1) Hang up or line fail
E.2) Busy
E.3) No answer
E.4) No facsimile connection

Fire Safety Section

ACT FIRE BRIGADE
FIRE APPLIANCES
APPROVAL CERTIFICATE

Inspection and approval testing of the active fire safety systems (fire appliances) in the scope of building works was conducted in accordance with Schedule 2 Part 2.2 of the Building (General) Regulation 2008. The plan report is provided in accordance with Section 5.4 of the Emergencies Act 2004.

On the basis that the test results were deemed satisfactory at the time of the inspection, please accept this letter as confirmation of the ACT Fire Brigade's approval of the active fire safety systems for the scope of building works.

1. Date of Inspection: 4th February 2010

2. ACTFB Reference: 701-022-0015

3. Building Name: **Oil Recycling Facility**
60 Dacre St. Mitchell

4. Block, Section & Suburb: 15 of 22, Mitchell

5. Scope of Building Works
New Building (including fitout)

6. Building Certifier

7. This ACT Fire Brigade Fire Appliances Approval Certificate is hereby conditional on the following:

(i) The following active fire safety systems (fire appliances) are to be maintained in accordance with 7(ii) and remain operable as designed throughout the life of the building:

- **AS1841.1 Portable fire extinguishers**
  - A 3.5Kg CO_2 or 4.5kg dry chemical powder extinguisher is to be retained beside any fire hose reel and to the requirements of BCA Clause E1.6 & AS2444 Note; The discharge of a dry chemical powder extinguishant may have an adverse affect on sensitive electronic equipment.
  -
- **AS2293.3 Emergency and exit lighting**
  Installed to AS2293.1

08/02/2010

Inspection report

To					
From		**Job no**	CA090050	**Revision no**	1.0
Date	1 February 2010	**Pages**		3	
Subject	**Block 15, Section 22, Mitchell, ACT**				

Dear

We have prepared this statement following a visual inspection of Block 15, Section 22, Mitchell, ACT by at 2pm on the 20 January 2010 in relation to compliance with alternative solution report CA090050 R1.0 dated July 2009 prepared by

It is our professional opinion that the inspected building is consistent with the recommendations of alternative solution report CA090050 R1.0 dated July 2009 based upon the visual spot checks undertaken during the inspection and the documentation provided by the installers, subject to completion of the following outstanding issues:

has relied upon certification provided by the various installers with regards to the detailed inspections and commissioning tests for the building fire safety systems.

We have not verified the accuracy and/or completeness of the documentation provided by the various installers – other than undertaking of sample testing of the holistic fire safety strategy – and shall not be responsible for any errors or omissions which may be incorporated into this report as a result.

This statement does not relieve other parties of their responsibilities in ensuring compliance of the other parts of the building with relevant statutes and building codes nor should it be construed that the building otherwise complies with the deemed to satisfy provisions of the BCA.

Please contact of f you have any questions regarding this information.

Regards

Senior fire safety engineer

Inspection checklist

The following checklist is our record of the findings of the inspection(s) conducted and the signoff status of each item.

No.	Description of fire safety measure	Consistent with requirement?	Comment
1.	The design must comply with the current DTS provisions of the BCA unless specifically mentioned. This section does not provide a comprehensive list of fire safety measures required by the DTS provisions of the BCA. The fire safety measures listed within this section relate only to the alternative solutions. The fire safety measures must be read in conjunction with the DTS provisions of the BCA.	N/A	Certifier to manage compliance.
2.	This report and the requirements listed in this section are essential services which must be implemented into the design and identified on the essential services maintenance schedule for the building. They must be maintained and certified in accordance with section I of the BCA and relevant Australian standards.	Yes	Essential services letter has been received from I of Energy Services Invironmental dated 20/01/2010. Defire has issued a template letter to be completed.
3.	If there are building alterations or additions, a change in use or changes to the fire safety measures in the future, a reassessment will be needed to verify consistency with the assessment in this report.	Yes	Part of essential services letter.
4.	A fire hydrant system must be installed to provide coverage throughout the building in accordance with the requirements of clause E1.3 of the BCA and AS 2419.1-2005 with the exception that coverage may be achieved by the use of three hose lengths in lieu of two – refer to Figure 1. The following requirements are to allow for the use of three hose lengths:	Yes	Compliance certificate for the design of the fire hydrant system has been received from of Sellick Consultants dated 01/02/2010. Compliance certificate for the installation of the fire hydrant system has been received from of M Leemhuis Plumbing and Gas dated 20/01/2010.
a.	Signage must be provided at the entrance to the building to clearly identify that the use of three hoses is required to achieve full coverage – refer to Figure 2. The signage is to be in 20mm high capital letters in a colour contrasting to the background and say "COVERAGE FROM THE EXTERNAL FIRE HYDRANTS IS ACHIEVED WITH THE USE OF THREE HOSE LENGTHS".	Yes	Defire has inspected the signage.
b.	A hydrant location plan showing the location of the external street hydrants is to be provided as part of or adjacent to the signage referred to in item 4a above. The minimum size of the hydrant location plan is to be A4.	Yes	Defire has inspected the hydrant location plan.
c.	With the exception of coverage, certification must be provided from the hydraulic engineer confirming the external hydrants are provided in accordance with the requirements in AS 2419.1-2005.	Yes	Part of hydrant certification.

d.	Ensure that external hydrants have blue reflective hydrant markers (blue cats eye) installed in the roadways indicating the location of the feed hydrant on Dacre Street. The hydrant markers are to be placed 25mm off the centre of the road, in line and towards the hydrants .	Yes	Defire has inspected the blue reflective markers.
e.	The pressures and flows in the external hydrants must be confirmed by the hydraulic engineer to be at least to the specifications in AS 2419.1-2005.	Yes	Part of hydrant certification.
5.	A fire hose reel system must be installed throughout the building in accordance with the requirements of clause E1.4 of the BCA and AS 2441-2005. In particular, a 36m fire hose reel will be needed within 4m from the northern stairway on the mezzanine level – refer to Figure 1.	Yes	Compliance certificate for the installation of the fire hose reel system has been received from M Leemhuis Plumbing and Gas dated 20/01/2010. Defire has inspected the fire hose reel.

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Attention:

INSTALLATION CERTIFICATE

Building Name	60 DACRE
Building Address	60 DACRE STREET MITCHELL, BLOCK 15, SECTION 22
Part or Whole of Building	WHOLE

ESSENTIAL FIRE SAFETY MEASURE (ESSENTIAL SERVICE)	**STANDARD OF PERFORMANCE** *Australian Standard (and code requirement applicable to original Design, Installation and Performance*	**DATE OF INSTALLATION**
FIRE EXTINGUISHERS	AS 2444-2001	15TH OF DECEMBER 2009

I, _____ OF _____

Certify that each essential fire safety measure specified above has been installed by a properly qualified person and was found, when it was installed, to be capable of performing to a standard not less than that to which the measure was originally designed and implemented.

The information contained in this certificate is, to the best of my knowledge and belief, true and accurate.

Sign: _____ Date: 04/02/2010

20/01/2010
Blk 15 Section 22

Re; ESI Dacre St Mitchell.

Certificate of Compliance for fire hose reels and hydrants.

New firehose reels have been tested and installed in accordance with and comply with the requirements of BCA Clause E1.4,AS/NZS 1221 and AS 2441.
Fire hydrants tested and installed in accordance with and comply with the requirements of BCA Clause E1.3,AS 2419.1

Regards.

Principal for and on behalf of .

Our ref: 80060:BW/ap

Contact:

1 February 2010

BLOCK 15 SECTION 22 MITCHELL ACT
FIRE HYDRANT DESIGN CERTIFICATION

We confirm the design of the Fire Hydrant installation complies with AS2419 as well as the "Alternative Solution Report" prepared by

Should you have any comment or query pertaining to the above, please do not hesitate to contact me.

Yours faithfully,

Director
for

18 Ionsdale Street
Suites 9 & 10 Flowers Court
Braddon ACT 2601

Licence No. *ABN:*

22nd December, 2009

To: Building Controller of ACT

CERTIFICATE OF COMPLIANCE

BLOCK 15, SECTION 22 – MITCHELL, ACT
60 DACRE STREET

We, . hereby certify that emergency lights are installed to serve all areas, at the above premises, in accordance with AS/NZS 2293.1 and BCA Clause E4.2.

Yours Faithfully,

Phone:
Fax:
Mobile:
Email:

Licence No. *ABN:*

22nd December, 2009

To: Building Controller of ACT

CERTIFICATE OF COMPLIANCE

BLOCK 15, SECTION 22 – MITCHELL, ACT
60 DACRE STREET

We, , hereby certify that illuminated exit and directional signs are installed to serve all areas, at the above premises, in accordance with AS/NZS 2293.1 and BCA Clauses E4.5 & E4.6.

Yours Faithfully,

WATSON ACT 2602

Phone:
Fax:
Mobile:
Email:

ACT Fire Brigade

ACT FIRE BRIGADE ALTERNATE BUILDING SOLUTION REVIEW

12 January 2010

Your Reference: **CA090050**

ACT FB Reference: **Oil Recycling Facility I 701-022-00015 I 2009-71**

Dear Sir,

The ACT Fire Brigade has reviewed the proposed alternative building solution that you have submitted in the form of a Alternate Solution Report for the building detailed below. The ACT Fire Brigade undertakes this review in accordance with Section 5.4 of the Emergencies ACT 2004 and as a "referred entity" in accordance with Item 6 of Part 2.2, Schedule 2 of Building (General) Regulation 2008 made under the Building ACT 2004.

The evaluation of the Alternate Solution Report has been undertaken with consideration given to the Building Code of Australia (BCA), the operational requirements of the ACT Fire Brigade and the International Fire Engineering Guidelines.

1. Building Details

Building Name:	Oil Recycling Facility
Address:	Dacre St, MITCHELL
Block / Section / Division:	15/22/701
Building Classification:	8
Type of Construction:	B
Rise in Storeys:	2
Effective Height:	<25m
Development:	New Building

2. Variation from Deemed-to-Satisfy BCA requirements

The Alternate Solution Report identifies two areas of non-compliance and accordingly addresses these through two fire safety assessments. This reply addresses each fire safety assessment individually, with reference to the assessment by a corresponding prefix in sections 2, 3 and 4 of this document. A full description of the variations, non-compliances, and methodologies used to meet the BCA Performance Requirements and Assessment Methods are contained in the Alternate Solution Report CA090050 submitted by Defire.

2.1. The distance from where a fire brigade pumping appliance can park for external hydrant coverage to the mezzanine level may be increased from two lengths to three lengths or to 90m.

**Qualitative analysis. Absolute assessment*
**Provision: Signage provided at the entrance to the building stating that "Coverage from the external fire hydrant is achieved with the use of three hose lengths".*

* Denotes information intended only for Fire Safety Officers in relation to non-compliances. The information provided is not exhaustive and may not cover all aspects of the submitted Alternative Solution Report.

This commentary is limited to the non-compliances contained within the Alternative Solution Report on the assumption that all other aspects of the building comply with the BCA. If other aspects of the building do not meet the DTS provisions of the BCA, a further review of this alternative solution may be required.

3. Relevant BCA Provisions and Performance Requirements

3.1. E1.3 & 2419.1-2005 and Performance Requirement EP1.3

4. Method for Meeting the Performance Requirements

Assessment No	Method for meeting performance requirements	IFEG Sub-system[s] Evaluated	BCA Assessment Method
1	A0.5(b)(i)	Sub-system F	A0.9(b)(ii)
Sub-system A - Fire Initiation and Development Sub-system B - Smoke Development and Spread & Control Sub-system C - Fire Spread and Impact and Control. Sub-system D - Fire Detection, Warning and Suppression Sub-system E - Occupant Evacuation and Control Sub-system F - Fire Brigade Intervention.			

5. Brigade Endorsement for the Alternative Solution

The ACT Fire Brigade is satisfied that the evidence supplied demonstrates the above listed performance criteria have been met. The ACT Fire Brigade is therefore able to provide support for the alternative solution at this time on the condition that the requirements of Section 6 will be fulfilled.

6. Conditions for Brigade Endorsement of the Alternative Solution

6.1. ACT Fire Brigade Final Clearance Inspection

Final ACTFB approval for the alternate solution is dependent on the outcome of a clearance inspection undertaken by the ACTFB at the completion of building works. The clearance inspection examines all aspects of the buildings fire safety measures as required by the Deemed-to-Satisfy and provisioned under the alternate solution. Appropriate certification and documentation will be required for all installed fire safety measures.

6.2. Supporting Documentation

6.2.a. In addition to the supporting documentation required in Section 6.4, the following conditions may be required:

6.2.b. Supporting documentation such as a BCA Audit, stating that all aspects of the building comply with the DTS provisions of the BCA other than those that have been addressed and approved in the Alternate Solution Report.

6.2.c. Independent certification stating that fire safety systems included in the building that are not part of the alternate solution comply with the DTS provisions of the BCA. This is as determined by the Building Certifier or other suitably qualified person.

6.3. Conditional Support

Please be advised that ACTFB support is conditional on all the components of the fire safety strategy being installed or implemented as documented in the Alternate Solution Report, including the following specific design features:

6.3.a. As required by the Alternate Solution Report CA090050.

6.3.b. All aspects of the trial design are considered essential services; as such a list of the essential services is required for the building and is to be incorporated into the management in use policies. A copy of the schedule is to be forwarded to the ACT Fire Brigade for retention on file, the schedule must include all BCA required essential services and any specific essential design features required by the trial design in the alternate solution. The maintenance of essential services is further detailed in Part 6.6 of this report.

6.4. Onsite Inspection & Letter of Support

An onsite inspection and associated inspection report from the consulting fire safety engineer will be required at the completion of building works verifying that:

6.4.a. The construction of the building works is consistent with the approved alternative solution design.

6.4.b. The fire safety features, measures, systems and specifications stipulated in the Alternate Solution Report have been installed and commissioned satisfactorily.

6.4.c. Verification that all aspects of the trial design are installed and implemented as per the design detailed in the approved Alternative Solution Report.

6.4.d. The management in use and maintenance regimes stipulated in the Alternate Solution Report as components of the alternative solution, are in place.

6.5. Change in Use

This endorsement is limited to the building as described in the Alternate Solution Report. If the building is subject to change of use, alterations or additions a reassessment will be required to ensure consistency with the fire safety measures contained within this proposal and the Building Code of Australia.

6.6. Maintenance

The safety of a building depends in part on how the building and its fire safety systems are maintained. The ongoing availability and effectiveness of its fire safety systems is vital. It is a requirement that all fire safety systems included in the building be maintained in accordance with the schedules and recommendations of the systems designer and/or installers and at minimum to the requirements of the BCA and Australian Standards, in particular the AS1851 suite of standards.

6.7. Emergency Control Organisation

To further safeguard building occupants from the effects of a fire emergency, it is requirement that a well-managed evacuation management plan and procedures be established in line with AS3745 Emergency Control Organisation and procedures for buildings, structures and workplaces. This should include accredited fire warden training and periodic evacuation drills.

Report Prepared By:			12/01/10
Report Verified By:			12/01/10

For the Chief Officer ACT Fire Brigade.

Alternative solution report

Block 15, Section 22, Mitchell, ACT

Client

Report number CA090050

Revision R1.0

Report issued July 09

Amendment schedule

Version	Date	Information relating to report			
R1.0	29/07/2009	Reason for issue	Report issued to and the ACT Fire Brigade for review and comment.		
			Prepared by	Reviewed by	Approved by
		Name			
		Signature			
		Reason for issue			
			Prepared by	Reviewed by	Approved by
		Name			
		Signature			
		Reason for issue			
			Prepared by	Reviewed by	Approved by
		Name			
		Signature			
		Reason for issue			
			Prepared by	Reviewed by	Approved by
		Name			
		Signature			

Executive summary

This alternative solution report documents the findings of a fire safety engineering assessment undertaken to determine whether the proposed oil recycling facility at Block 15, Section 22, Mitchell, ACT complies with the relevant performance requirements of the Building Code of Australia 2009 (BCA)[1]. undertook the assessment in accordance with the International Fire Engineering Guidelines (IFEG) [2] at the request of

The project comprises the construction of a new oil recycling building. The building is single storey with a mezzanine and is to be used as an oil recycling facility (class 8). The mezzanine level count towards the building's rise in storeys required allowed in BCA clause C1.2.

The design of the building includes areas which do not comply with the deemed-to-satisfy (DTS) provisions of the BCA. Table 1 describes the BCA requirements associated with the alternative solutions.

No	Description of alternative solutions	DTS provision	Performance requirements (A0.10)	Method of meeting performance requirements (A0.5)	Assessment method (A0.9)
1.	The distance from where a fire brigade pumping appliance can park for external hydrant coverage to the mezzanine level may be increased from two lengths to three lengths or up to 90m.	Clause E1.3 and AS 2419.1-2005	EP1.3	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)

Table 1 BCA requirements associated with the alternative solutions

The fire safety engineering assessment undertaken found that the design of the building achieves compliance with the relevant performance requirements of the BCA, subject to the following recommendations:

- This report and the fire safety measures listed in section 5 are essential services which must be implemented into the design and identified on the essential services maintenance schedule for the building. They must be maintained and certified in accordance with section I of the BCA and relevant Australian standards.
- If there are building alterations or additions, a change in use or changes to the fire safety system in the future, a reassessment will be needed to verify consistency with the assessment contained in this report.

[1] Building Code of Australia 2009, Australian Building Codes Board, Australia, 2009.
[2] International Fire Engineering Guidelines – Edition 2005, Australian Building Codes Board, Australia, 2005.

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1. Introduction

This alternative solution report documents the findings of a fire safety engineering assessment undertaken to determine whether the proposed oil recycling facility at Block 15, Section 22, Mitchell, ACT complies with the relevant performance requirements of the Building Code of Australia 2009 (BCA)[3]. undertook the assessment in accordance with the International Fire Engineering Guidelines (IFEG) [4] at the request of.

2. Fire engineering brief

The purpose of the fire engineering brief (FEB) is to consult with the relevant stakeholders to define the scope of the project, to agree upon the objectives, fire safety measures, methods of analysis and acceptance criteria for the alternative solutions. The IFEG states that the scope of the project and the method by which it will receive regulatory approval dictates the extent of the FEB process required.

The proposed alternative solution is considered to be a simple departure from the deemed-to-satisfy (DTS) provisions of the BCA.

On this basis, the FEB was conducted via email between of the ACT Fire Brigade and on 15 May 2009. The following key points were discussed:

- The distance from where a fire brigade pumping appliance can park for external hydrant coverage to the mezzanine level may be increased from two lengths to three lengths or up to 90m. Signage indicating this requirement is to be provided at the entrance door to the building.

At the conclusion of the discussion it was agreed that the proposed design and alternative solutions were suitable for detailed analysis and that the final alternative solution report will be referred to the stakeholders for comment. The relevant stakeholders identified for this project are listed in Table 2.

Name	Role	Organisation	Contact details
	Builder		
	Hydraulic engineer		
	Private certifier		
	Fire brigade reviewer	ACT fire Brigade	
	Fire safety engineer		

Table 2 Stakeholders

3. Description of the building and alternative solutions

3.1 Building description

The project comprises the construction of a new oil recycling building. The building is single storey with a mezzanine and is to be used as an oil recycling facility (class 8). The mezzanine level count towards the building's rise in storeys required allowed in BCA clause C1.2.

[3] Building Code of Australia 2009, Australian Building Codes Board, Australia, 2009.
[4] International Fire Engineering Guidelines – Edition 2005, Australian Building Codes Board, Australia, 2005.

A description of the main characteristics of the building for the purpose of determining compliance with the BCA is given in Table 3. The proposed use and classification of the building or part in accordance with clause A3.2 of the BCA is described in Table 4.

Characteristic	BCA clause	Description
Effective height	A1.1	Less than 25m
Type of construction required	C1.1	Type B (based on a total floor area of 2,600m^2)
Rise in storeys	C1.2	Two

Table 3 Main building characteristics

Part of building	Use	Classification (A3.2)
Ground floor and mezzanine	Oil recycling facility	8

Table 4 Use and classification

3.2 Preventative and protective measures

The building will be provided with the major fire safety measures required by the DTS provisions of the BCA listed as follows. A comprehensive list of fire safety measures is to be provided by the certifier as part of the building approval process. Additional fire safety measures required as part of the alternative solution are listed within section 5.

- Emergency lighting
- Exit signs
- Fire hose reel system (see section 5)
- Fire hydrant system (see section 5)
- Portable fire extinguishers

3.3 Occupant characteristics

The characteristics of the occupants expected to be in the building are listed in Table 5.

Characteristic	Description
Familiarity	Occupants are expected to be staff who are familiar with the layout of the building.
Awareness	Occupants are expected to be awake and alert to a potential emergency event such as a fire in the building.
Mobility	Occupants are assumed to have the same level of mobility as the general population. This may include a limited proportion of mobility impaired occupants. These occupants may require crutches, a wheelchair or similar to evacuate on their own or need assistance from other occupants.
Age	Occupants of all ages may be present within the building.
Language	Although occupants may have English as their second language, they are expected to understand signs and verbal instructions in English to the degree necessary to not adversely impact upon evacuation.
Occupant load	Population densities used in this assessment are based upon table D1.13 of the BCA which specifies 5m^2/person.

Table 5 Occupant characteristics

3.4 Alternative solutions

The design of the building includes areas that do not comply with the DTS provisions of the BCA. We intend to use a performance-based fire safety engineering approach to develop alternative solutions to the DTS provisions of the BCA. Table 6 describes the BCA requirements associated with the alternative solutions.

No	Description of alternative solutions	DTS provision	Performance requirements (A0.10)	Method of meeting performance requirements (A0.5)	Assessment method (A0.9)
1.	The distance from where a fire brigade pumping appliance can park for external hydrant coverage to the mezzanine level may be increased from two lengths to three lengths or up to 90m.	Clause E1.3 and AS 2419.1-2005	EP1.3	Complies with performance requirements A0.5(b)(i)	Verification method A0.9(b)(ii)

Table 6 BCA requirements associated with the alternative solutions

4. Scope, objective and assumptions

4.1 Scope and objective

- The scope of this report is limited to the alternative solutions described in section 3.4.
- The objective of this report is to demonstrate compliance with the fire safety aspects of the performance requirements of the BCA. Matters such as property protection (other than protection of adjoining property), business interruption, public perception, environmental impacts and broader community issues – such as loss of a major employer and impact on tourism – have not been considered as they are outside the scope of the BCA.
- This report considers single point arson as a source of ignition. Arson involving accelerants or multiple ignition sources is not considered in this assessment as it is outside the scope of the BCA.
- The scope of our works is limited to considering evacuation and fire safety issues for people with disabilities to the same degree as the DTS provisions of the BCA. Specifically, consideration of evacuation from the building by people with disabilities under the provisions of the Disability Discrimination Act 1992 is excluded.
- If there are building alterations or additions, a change in use or changes to the fire safety systems in the future, a reassessment will be needed to verify consistency with the assessment in this report.
- The data, methodologies, calculations and conclusions documented within this report specifically relate to the building and must not be used for any other purpose.
- A number of issues within the BCA are recognised to be interpretive in nature. Where these issues are encountered, interpretations are made that are consistent with standard industry practice and / or Defire policy formulated in regard of each issue.
- The documentation that forms the basis for this report is listed within Appendix A.

- This report has been prepared based upon information provided by others. has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated into this report as a result.

4.2 Assumptions

- The design complies with the current DTS provisions of the BCA except for the specific alternative solutions described within section 3.4.
- All of the fire safety systems are assumed to be designed, installed and operate in accordance with the appropriate Australian standards, other design codes, legislation and regulations relevant to the project unless specifically stated otherwise.
- For a satisfactory level of fire safety to be achieved, regular testing and maintenance of all fire safety systems and measures, including management-in-use systems, is essential and is assumed in the conclusion of this assessment.

5. Fire safety measures

The fire safety measures required as part of the alternative solution are:

5.1 General

1. The design must comply with the current DTS provisions of the BCA unless specifically mentioned. This section does not provide a comprehensive list of fire safety measures required by the DTS provisions of the BCA. The fire safety measures listed within this section relate only to the alternative solutions. The fire safety measures must be read in conjunction with the DTS provisions of the BCA.
2. This report and the requirements listed in this section are essential services which must be implemented into the design and identified on the essential services maintenance schedule for the building. They must be maintained and certified in accordance with section I of the BCA and relevant Australian standards.
3. If there are building alterations or additions, a change in use or changes to the fire safety measures in the future, a reassessment will be needed to verify consistency with the assessment in this report.

5.2 Fire-fighting systems

4. A fire hydrant system must be installed to provide coverage throughout the building in accordance with the requirements of clause E1.3 of the BCA and AS 2419.1-2005 with the exception that coverage may be achieved by the use of three hose lengths in lieu of two – refer to Figure 1. The following requirements are to allow for the use of three hose lengths:
   a. Signage must be provided at the entrance to the building to clearly identify that the use of three hoses is required to achieve full coverage – refer to Figure 2. The signage is to be in 20mm high capital letters in a colour contrasting to the background and say "COVERAGE FROM THE EXTERNAL FIRE HYDRANTS IS ACHIEVED WITH THE USE OF THREE HOSE LENGTHS".
   b. A hydrant location plan showing the location of the external street hydrants is to be provided as part of or adjacent to the signage referred to in item 4a above. The minimum size of the hydrant location plan is to be A4.
   c. With the exception of coverage, certification must be provided from the hydraulic engineer confirming the external hydrants are provided in accordance with the requirements in AS 2419.1-2005.
   d. Ensure that external hydrants have blue reflective hydrant markers (blue cats eye) installed in the roadways indicating the location of the feed hydrant on Dacre Street. The hydrant markers are to be placed 25mm off the centre of the road, in line and towards the hydrants[5].
   e. The pressures and flows in the external hydrants must be confirmed by the hydraulic engineer to be at least to the specifications in AS 2419.1-2005.

[5] ACTEWAGL Water Supply & Sewerage Standards, Release 2, Amendment 1, November 2001

5. A fire hose reel system must be installed throughout the building in accordance with the requirements of clause E1.4 of the BCA and AS 2441-2005. In particular, a 36m fire hose reel will be needed within 4m from the northern stairway on the mezzanine level – refer to Figure 1.

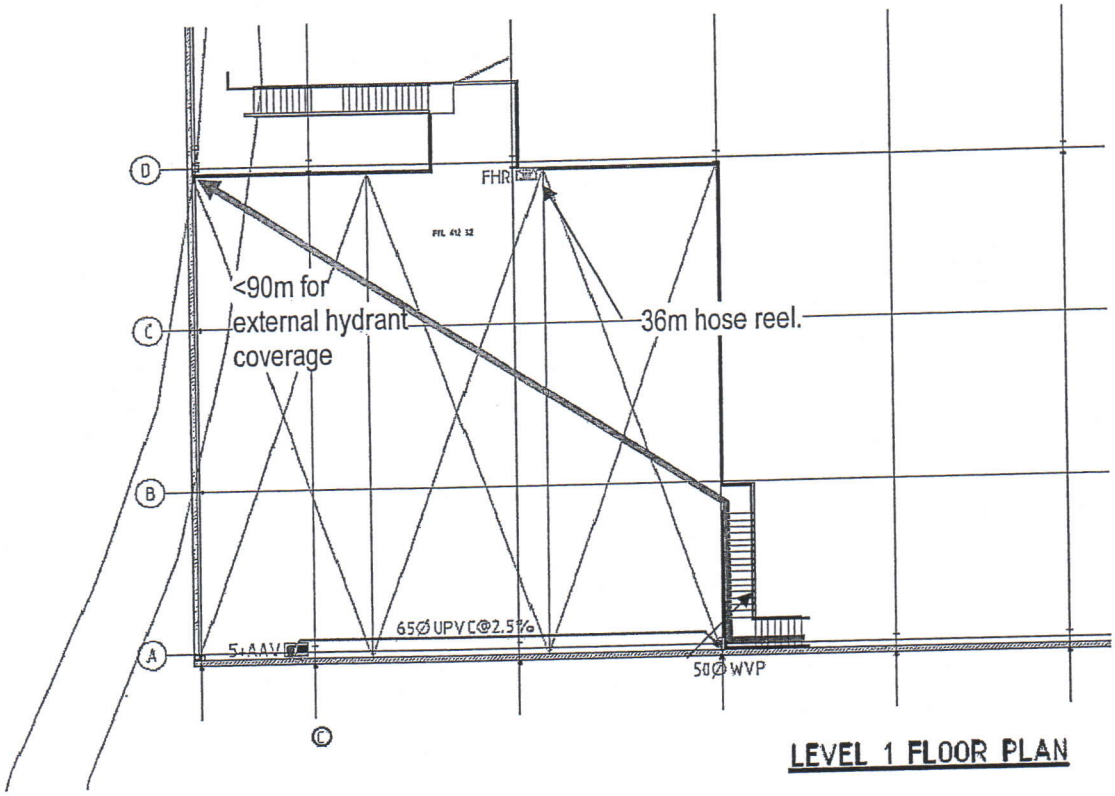

Figure 1 Fire hose reels on the mezzanine level

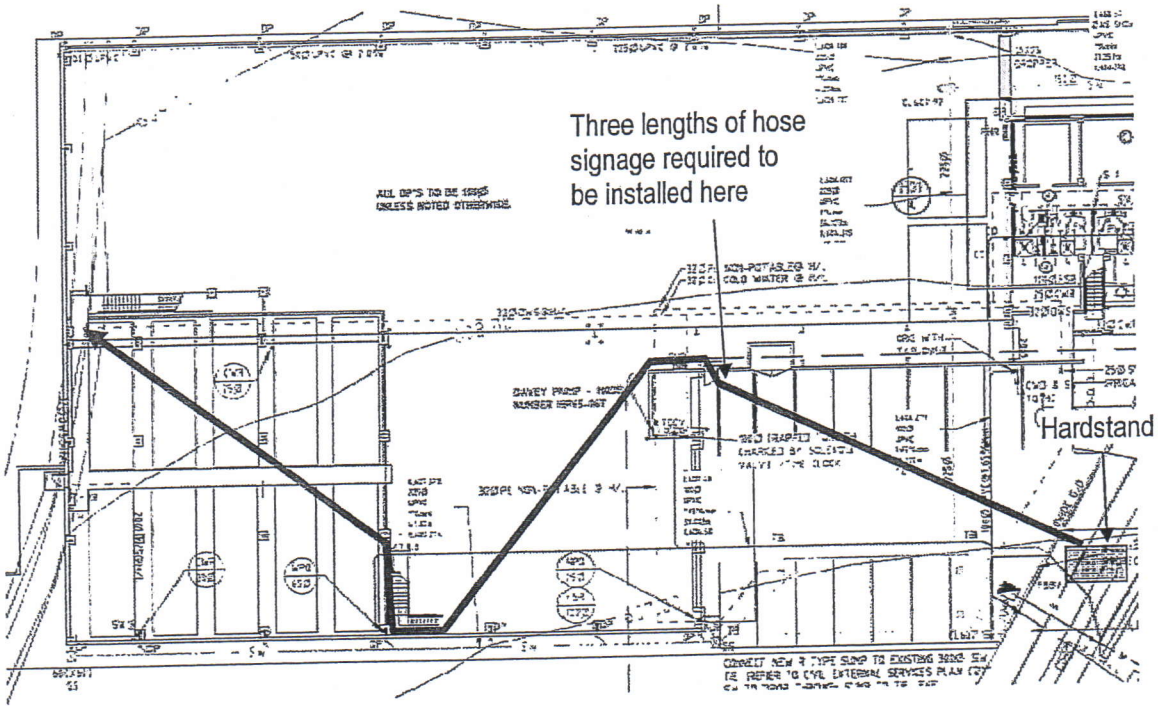

Figure 2 Hardstand location and signage requirements on the ground floor

6. Alternative solution 1 – External fire hydrant coverage

6.1 Introduction

The proposed design includes areas where the external hydrants do not provide full coverage to all points of the building with two 30m hose lengths.

It is proposed to connect three hose lengths together from external hydrants in lieu of internal hydrants located on each floor to achieve full coverage. This design does not comply with AS 2419.1-2005.

This assessment was undertaken to demonstrate that the design complies with performance requirement EP1.3 of the BCA.

6.2 Methodology

The assessment undertaken for the building was a qualitative absolute assessment involving the sub-system F – Fire services intervention.

6.3 Intent of the BCA

The guide to the BCA[6] says that the intent of clause E1.3 is 'to require the installation of suitable fire hydrant systems to facilitate the fire brigade's fire fighting operations.'

6.4 Acceptance criteria

The acceptance criterion for this assessment is that the proposed design adequately facilitates fire brigade intervention.

6.5 Assessment

6.5.1 Australian standard AS 2419.1-2005

Clause E1.3 of the BCA requires compliance with AS 2419.1-2005 which sets out requirements for the design, installation and commission of fire hydrant systems for property protection.

Section 3.2 of the standard outlines requirements for the location of on-site fire hydrants. In the case of external hydrants the standard requires that 'all portions of the building shall be within reach of a 10 m hose stream, issuing from nozzle at the end of a 60m length of hose laid on the ground.' This allows up to two lengths – ie a total of 60m – of hose may be connected to an external fire hydrant in lieu of a single length within the building as less physical restrictions usually exist outside the building.

In accordance with the concession in clause E1.3(b)(ii) of the BCA, those two hose lengths could be allowed from a hydrant at the entrance on ground floor which necessitate the fire brigade to use both lengths inside the building.

6.5.2 Signage requirement

Signage must be provided at the entrance to the building to clearly identify that the use of three hoses is required to achieve full coverage. A hydrant location plan showing the location of the external street hydrant is also required.

[6] Guide to the BCA 2009, Australian Building Codes Board, Australia, 2009.

6.5.3 Fire brigade intervention

AS 2419.1-2005 technically requires the building to be protected by either boosted external on-site attack hydrants or boosted internal hydrants because the external street hydrant does not provide full coverage with a 60m firefighting hose.

The measurement for coverage is required to be taken from either a pumping appliance or a boosted on-site attack hydrant. As such, an external on-site attack hydrant or internal hydrants would also require fire brigade booster facilities. This scenario would require the fire brigade to locate the booster, read the block plan and identify the location of the on-site hydrants.

The set up for on-site attack hydrants is considered more difficult compared to finding a clearly identified external street hydrant, running a line of hose from that hydrant to the fire brigade pumping appliance, and then running a line of hose from the appliance to the fire scene. An analysis of the fire brigade intervention times for the proposed external hydrant system compared to an on-site attack hydrant system showed that the proposed system is faster to set up than an on-site attack hydrant system – refer to Appendix B.

Full coverage of the floor can be achieved by connecting three hoses lengths end to end. This is similar to fire-fighters using an internal ground floor hydrant in a two storey class 5 to 9 building where fire-fighters are required to connect two hose lengths for full coverage. This is considered an important point because the proposed solution does not significantly impact upon the length of hose used inside the building by the fire brigade.

The use of a third hose is on the outside of the building. Therefore the third hose does not have a negative impact on the safety of the fire-fighters. They can operate from a safe location as if the building was provided with an internal hydrant in accordance with the concession in clause E1.3(b)(ii) of the BCA, and coverage achieved by two lengths of hose.

Pressure losses could occur when using extended hose length. The pressure loss is also known to be larger with smaller hoses such as 38mm than with greater dimensions such as 68 or 72mm. The losses are normally a problem related to the height above ground to which the water is required to be pumped, ie, a high building causes pressure losses that must be considered when designing the hydrant system. The pressure loss caused by the third hose used one or two floors above ground is not expected to reduce flows below the required at the fire-fighters nozzle[7].

The connection of a third hose to achieve full hydrant coverage is considered to have a minimal impact on the fire brigade set-up time.

There is no need for fire fighting operations to be undertaken from a floor above the floor of fire origin.

The building is provided with fire hose reels. These can also be operated by the fire brigade personnel.

The use of three hose lengths to achieve coverage has been discussed with the ACT Fire Brigade and in principal support has been given for this particular building.

6.5.4 Floor area of the building

The total floor area of the building is approximately 2,600m^2, therefore the building requires type B construction.

In lieu of providing internal hydrants located within the floor area, full coverage can be achieved through three hoses connected together from an external pumper. The extra length of hose is required externally from the building and only two lengths of hose are required inside the building.

[7] Särdqvist S, Vatten och andra släckmedel, Swedish Rescue Services Agency, 2006

The floor area has no impact on this assessment as the third length of hose can be connected outside of the building.

6.5.5 Fire hazard

The subject building is an oil recycling facility. As such, the fire hazard in the building may be greater than buildings of other uses. It is considered that the setup of three lengths of hose from an external pumper hardstand provides a safer environment for fire-fighters than setup from an internal hydrant within the oil recycling facility – refer to Appendix B.

6.6 Conclusion

The assessment undertaken for the proposed design demonstrates that the hydrant system – incorporating three hose lengths to achieve coverage – facilitates fire brigade intervention to the degree necessary. The proposed design of the building is therefore considered to achieve compliance with performance requirement EP1.3 of the BCA, subject to compliance with the fire safety measures given in section 5.

6.7 Compliance with the performance requirements

A checklist of compliance with the relevant performance requirements of the BCA for the assessment undertaken is listed as follows.

EP1.3- A fire hydrant system must be provided to the degree necessary to facilitate the needs of the fire brigade appropriate to—

Criteria	Compliance
(a) fire-fighting operations; and	Addressed in 6.5.3
(b) the floor area of the building; and	Addressed in 6.5.4
(c) the fire hazard.	Addressed in 6.5.5

Appendix A Drawings and information

Drawing title	Dwg no	Date	Drawn
Hydraulic services – ground floor plan	H101	21/04/2009	
Hydraulic services – first floor plan	H102	21/04/2009	

Appendix B Fire brigade intervention comparison

B.1 Introduction

This appendix documents the results of an analysis of the fire brigade intervention times related to the proposed external hydrant system which utilises one extra length of firefighting hose compared to a DTS compliant boosted on-site external system.

The analysis was conducted in accordance with the methodology described in the Australasian Fire Authorities Council's Fire Brigade Intervention Model (FBIM) [8].

This assessment does not consider overall fire brigade intervention times, but rather those times that are critical to the discussion related to external versus on-site attack hydrants when the distance is exceeded by approximately 16m to the most distance disadvantaged unit. It is acknowledged that a number of fire brigade activities occur concurrently. An 80 percentile is used where appropriate. The set-up times for a 38mm firefighting hose line for the BCA compliant case do not include stairway or horizontal travel times.

B.2 Analysis

B.2.1 BCA compliant hydrant system

Assuming an external on-site hydrant system and booster is used, a fire brigade pumping appliance could utilise the following typical set-up:

- locate the booster, read the block plan and identify the location of the internal hydrant (assumed time 90 seconds).
- 1 x 65mm hose line (1 length) from the feed hydrant to the pumping appliance (86 seconds).
- 1 x 65mm hose line (1 length) from the pumping appliance to the booster (60 seconds).
- Time to gather high rise pack (20 seconds).
- 1 x 38mm hose line (2 lengths charged) from the external on-site hydrant to the most distance disadvantaged unit (112 seconds).

Total time = 368 seconds or 6.1 minutes

It is noted that the use of an external on-site hydrant system may require less hose to be run out from the hydrant, but is likely to require additional time to locate the booster, read the block plan and identify the location of the hydrants. It is considered that an additional time of 90 seconds would be applicable to complete these tasks – ie 60 seconds more than simply locating the clearly identified external street hydrant.

B.2.2 Proposed hydrant system

Pumpers can park within 76m of all parts of the apartments and less than 20m from a hydrant. Thus, if the proposed system is used it could utilise the following set-up:

- Locate external street hydrant less than 30m from appliance set-up (30 seconds)
- 1 x 65mm hose line (1 length) from the feed hydrant to the pumping appliance (86 seconds).

[8] Australasian Fire Authorities Council, *Fire Brigade Intervention* Model, version 2.2, October 2004.

- 1 x 38mm hose line (3 lengths charged) from the pumper to the most distance disadvantaged unit (166 seconds).

  Total time = 282 seconds or 4.7 minutes

B.3 Conclusion

The results show faster fire brigade intervention times for the proposed design which uses of an extra length of hose from an external street hydrant compared to a DTS compliant external on-site boosted hydrant system.

INSPECTION DETAILS

Inspection By	P.S J.W	Date: 23/12/09	Time: 1300
File No:	701 -022- 0015		
Clearance		Child Care		Walk Thru		General Enq	
Building Name:	01 Recycling Facility		
Level		Location:	Tenant:
Address:	60 DACRE ST. MITCHELL		
Site Contact:	Ph:
Invoice Details:	Contact:
Certifier Details:	Contact:

Ring on detection.

COMMENTS – REQUIREMENTS	ACTION	DATE
Exits - OK.	✓	
Emergency lighting :-	✓	
A.R.	✓	
Ext.	✓	
Certs req'd.		
Alt/ext signage - strengths	✓	
(PTO)		

B2, B9, Hazmat to check building

INSPECTION DETAILS

COMMENTS – REQUIREMENTS	ACTION	DATE

EGRESS

Required Exits	☐
DOT	☐
Exit Doors	☐
Door Locks	☐
Exit Signs	☐
Emergency Lights	☐
Signage	☐
FB Access (Keys)	☐

CERTIFICATION

Detection	3786/1670	☐
Sprinklers	2118	☐
Fire/Smoke Doors	1905	☐
Hydrants/ Booster	2419	☐
Fire Hose Reels	2441	☐
Extinguishers	2444	☐
Fire Separation		☐
Penetrations	1530	☐
Mechanical Air	1668	☐
Exhaust Hoods	1668	☐
Rated Glass	1530	☐

Emergency Lights	2293	☐
Alt Sol Support	Engineer	☐

5. Fire safety measures

The fire safety measures required as part of the alternative solution are:

5.1 General

1. The design must comply with the current DTS provisions of the BCA unless specifically mentioned. This section does not provide a comprehensive list of fire safety measures required by the DTS provisions of the BCA. The fire safety measures listed within this section relate only to the alternative solutions. The fire safety measures must be read in conjunction with the DTS provisions of the BCA.
2. This report and the requirements listed in this section are essential services which must be implemented into the design and identified on the essential services maintenance schedule for the building. They must be maintained and certified in accordance with section I of the BCA and relevant Australian standards.
3. If there are building alterations or additions, a change in use or changes to the fire safety measures in the future, a reassessment will be needed to verify consistency with the assessment in this report.

5.2 Fire-fighting systems

4. A fire hydrant system must be installed to provide coverage throughout the building in accordance with the requirements of clause E1.3 of the BCA and AS 2419.1-2005 with the exception that coverage may be achieved by the use of three hose lengths in lieu of two – refer to Figure 1. The following requirements are to allow for the use of three hose lengths:
   a. Signage must be provided at the entrance to the building to clearly identify that the use of three hoses is required to achieve full coverage – refer to Figure 2. The signage is to be in 20mm high capital letters in a colour contrasting to the background and say "COVERAGE FROM THE EXTERNAL FIRE HYDRANTS IS ACHIEVED WITH THE USE OF THREE HOSE LENGTHS".
   b. A hydrant location plan showing the location of the external street hydrants is to be provided as part of or adjacent to the signage referred to in item 4a above. The minimum size of the hydrant location plan is to be A4.
   c. With the exception of coverage, certification must be provided from the hydraulic engineer confirming the external hydrants are provided in accordance with the requirements in AS 2419.1-2005.
   d. Ensure that external hydrants have blue reflective hydrant markers (blue cats eye) installed in the roadways indicating the location of the feed hydrant on Dacre Street. The hydrant markers are to be placed 25mm off the centre of the road, in line and towards the hydrants[5].
   e. The pressures and flows in the external hydrants must be confirmed by the hydraulic engineer to be at least to the specifications in AS 2419.1-2005.

[5] ACTEWAGL Water Supply & Sewerage Standards, Release 2, Amendment 1, November 2001

MINISTER FOR PLANNING

PRELIMINARY ASSESSMENT EVALUATION

for the

Proposed Oil Recycling Facility (Block 15 Section 22 Mitchell, ACT)

PROPONENT: Energy Services Invironmental Pty. Ltd

August 2008

ACT Planning & Land Authority

1.0 Introduction

In order to satisfy the requirements of Section 121(1) of the *Land (Planning and Environment) Act 1991* (the Land Act) the following evaluation has been prepared for the Preliminary Assessment (PA) for the Proposed Oil Recycling Facility Block 15 Section 22 Mitchell.

The purpose of this evaluation is to determine if the identification of environmental impacts in the PA has been adequate, and to determine if further detailed environmental assessment is required.

2.0 Background

On 28 March 2008 s (the Applicant) on behalf of Energy Services Invironmental (the Proponent) lodged a Development Application (DA) with the ACT Planning and Land Authority (ACTPLA) to construct an Oil PCB Dechlorination and Recycling Plant on Block 15 Section 22 Mitchell.

On 9 April 2008 the Applicant was directed to prepare a mandatory PA under Section 113 of the Land Act. The requirement for the PA was triggered by the proposal as it falls under the list of prescribed classes of defined decisions in Appendix II of the Territory Plan that require a mandatory PA.

A notice stating the availability of the PA for public inspection and comment was published in the Canberra Times on Saturday 28 June 2008. Public inspection details were also available on the ACTPLA website and the Act Government Gazette.

Copies of the PA were made available at the ACTPLA shopfront during normal business hours. A copy was also delivered to the Conservation Council of the South East Region and Canberra.

The proposed building will be used as regional head office for Energy Services Invironmental (ESI). It will replace two locations that the company is currently operating in Mitchell area.

3.0 Adequacy in Identifying the Range of Possible Impacts of the Proposal on the Physical, Natural and Human Environments

The PA satisfactorily identifies the range of possible impacts arising from the proposal. The issues identified in the PA fall into the following three categories:

i) Impacts on the physical environment – soil contamination, air quality, surface water, waste, transport of product, storage and handling of flammable and combustible liquids, bunds and compounds, possible emergency events, security, signs and notices, transport of product and tank vehicle transfer location, operating procedure and training, record keeping.

ii) Impacts on the human environment – traffic impact, noise, other facilities and services, visual impact, socio-economic impacts.

iii) Impacts on the health and safety.

4.0 Technical Evaluation of Identified Impacts

4.1 Impacts on the Physical Environment

The site is located in the Mitchell Business Park which is zoned for general Industrial use. The neighbouring blocks are vacant. The buildings in the neighbourhood vary in scale and share similar setbacks. There is a significant slope across the block. The site is required to be cut & filled. Asset Acceptance has identified this as a potential issue which is discussed further in section 6.4 of this evaluation.

Section 3.1 of the PA discusses the potential impacts of the proposal on the physical environment. Issues fall under the following categories:

4.1.1 Soil contamination

During the operational phase of the facility oil spill may occur. The PA provides procedures for management and handling of the waste oils in Appendix 7 and an oil spill response procedure is outlined in Appendix 5.

The PA states that there is no requirement to remove any vegetation on the site for the proposed development. The verge surrounding the site is also free of trees and vegetation. Asset Acceptance made comments about the trees on verges, as discussed in section 6.4 of this evaluation.

4.1.2 Air Quality

Point Source Air Emission – ESI have an Environmental Protection Agreement (May 2002) concerning the treatment, processing and reprocessing of materials (Appendix D of the PA). The aim of this agreement is to manage discharges to air from the treatment of mineral oils.

The PA identifies the following three air pollution control devices which ensure the exhaust gases meet the various regulatory limits:

- a condenser/reactor is used to trap oil vapour carry-over in the exhaust and pre-treat gases;
- an activated charcoal filter is used to limit nuisance gases; and
- exhaust gases are heated and discharged through catalytic converter units.

The PA affirms that all pollutants are within the regulatory limit specified by Environment ACT in accordance with Schedule 1 of the Agreement. The Environment

Protection Authority supports this matter which is described below in section 6.7 of this evaluation.

Motor Vehicle Emission – A preventive maintenance programme is stated in the PA to control any gaseous emission from facility vehicles.

4.1.3 Surface Water

The drawings of the proposed development show the direction and discharge of stormwater flow. A 25000L rainwater tank is proposed at the rear of the building. This will capture the runoff from the roof and store it for use on-site for landscape drip irrigation and toilet flushing. Overflow from the tank will be into the existing stormwater drainage system which exists along Dacre Street.

All hazardous material storage tanks are adequately bunded in accordance with the relevant requirements of the *Dangerous Goods (Storage and Handling) Regulations 1989* and Australian Standard 1940.The PA also mentions that all material handling procedures will be undertake indoors in a full bunded facility.

The PA concludes that stormwater management on the site will meet all required regulatory requirements. This matter can be satisfactorily addressed through conditioning and monitoring of the DA.

4.1.4 Waste

The PA states that all waste generated from this activity will be collected and transferred to licensed waste treatment facilities. The standard operating procedures of the plant describes the process for managing and handling of the following waste products from both Fluidex PCB Dechlorination plant and Fluidex oil reclamation plant.

Exhaust gas emission – small quantities of gases are given off during the processing of PCB contaminated transformer oil and during the reactivation cycle. Air dispersion analysis studies carried out by Consulting Australia show that the air emissions have low impact and are well within the regulatory limits.

Liquid waste – The liquids are caustic/ water mixture with a small amount of oil and sump oil which will be removed by licensed waste disposal companies to an approved waste treatment or disposal facility. The PA provides the necessary licences to dispose of the generated waste in Appendix 12.

Used filter elements – These PCB solid wastes will be disposed of through appropriately licensed destruction facilities.

Water – The PA mentions that all water from the drain points will not be discharged onto land, into a watercourse or stormwater drain.

Used oil cleanup materials and Activated carbon waste will be stored in the bunded area and then transported to treatment facilities by a reputable and licensed waste management contractor.

The PA states that this will satisfy the waste management procedure (Appendix 7 of the PA) for this plant during its operational phase.

4.1.5 Transport of Product

The PA provides reference to the *Australian Code of Transport of Dangerous Goods by road and Rail (ADG Code)* for transferring bulk tankers. All waste transportation will be carried out in accordance with the requirements for transportation of waste or hazardous materials.

The PA declares that the vehicle and driver must be licensed under Part 18 (*Road and Transport Reform Regulation*) to transport the goods (Appendix 12 of the PA).

4.1.6 The Storage and Handling of Flammable and Combustible Liquids

The PA states in section 3.1.6 that the storage and handling of the liquids will meet the criteria specified in Australian Standard 1940 (AS 1940).

4.1.7 Bunds and Compounds

The PA indicates that the design and construction of the compound will meet the clause 5.9.3 AS 1940. Ramsey Howard & Associates has been engaged to undertake design work associated with the tanks and bunding. The larger tanks require licensing for storage purposes after installation.

4.1.8 Possible Emergency Events

The PA states that the proposed development complies with the preventative measures for three possible emergency events – major oil spill, fire in the treatment plant or other equipment, and medical emergency.

The proposed fire protection system will be in accordance with AS 1940. Fire extinguishers will be located as appropriate in accordance with AS 2444 to optimise access in an emergency.

4.1.9 Security Signs and Notices

The PA indicates that the site will be securely fenced and will be locked outside operating hours. This will occur via an 1800mm high wire fence. Signs and notices for the restricted area will be displayed at each point of access.

4.1.10 Transfer of Product and tank vehicle transfer location

The building has been designed to allow semi-trailer trucks to drive through the site and do all loading and unloading within the building, and will exit the site in a forward direction. Safe filling and discharging procedures will be implemented in accordance with AS 1940.

4.1.11 Operating Procedure

The PA states that all employees will be trained appropriately for specific jobs. The premises will be complying with signage, notices and relevant safety instructions.

4.1.12 Record Keeping

Record keeping includes training and retraining, equipment tests; maintenance and repairs; and incident reports. It will enable tracking of PCBs from the point of pick up, handling, transport, storage, treatment and final destruction or disposal.

4.2 Impacts on Human Environment

4.2.1 Traffic Impact

Section 3.2.1 of the PA describes the traffic impact and road safety. There will be no additional impacts on the current traffic situation. Sufficient parking is available on site and loading and unloading will be conducted fully within the boundary of the property and under cover of the building.

The site has been designed to allow articulated vehicles to enter and exit the site in a forward direction with minimal interruption to traffic, and in adherence to traffic laws.

4.2.2 Noise

The PA includes an acoustic analysis prepared by the Acoustics and Vibration unit of the UNSW (Appendix 6 of the PA). This analysis concluded that noise levels at the boundary will not exceed the daytime criterion of 65dB(A).

It may exceed the night time criterion if the roller door is open, but will be below the criterion under normal operating conditions when the roller door is closed.

It also states in the PA that the main noise source of the proposed development will be vehicles entering and leaving the site. As this facility will be open five days a week the increase in the noise level with traffic movement will be negligible.

4.2.3 Other Facilities and services

The proposed recycling plant would have no impact on community facilities. The site has existing infrastructure services for stormwater drainage, water supply, power, gas and telephone service.

4.2.4 Visual Impact

The PA concludes that the proposal does not have significant impacts on the visual amenity of the area. Furthermore the bulk storage tank and the plant are inside the building which is designed to meet planning requirements. The building will be consistent with the size and style of other buildings in the area.

4.2.5 Socio-economic Impact

The PA states that land values are not affected by this development and the operational phase will generate employment opportunities for the ACT region. This is questionable given the specific technical skills involved in this type of work. However it is not an issue that requires the PA to undergo further assessment.

4.3 Health and Safety

Section 3.3 of the PA identifies the risk associated with the Fluidex Transformer oil PCB Dechlorination and recycling plant. Health risk from the chemicals used during the process is considered low. PCBs are of low risk and the reagent will be kept in a stable safe form. Table 3.5 of the PA demonstrates the hazardous environment, assessed risk (controlled and uncontrolled) and control measures related with this plant.

4.4 Potentially Beneficial Impacts

The PA states the potentially beneficial impacts of the proposed recycling plant include saving energy, commitment to sustainable waste management, opportunities for resource recovery, creating environment for developing innovative solutions, employment opportunity, meeting goals of the PCB management plan.

5.0 Public Notification and Comments

No submissions or comments were received from the public during the notification period.

6.0 Referral Agency Comments

The following agencies were notified and invited to make comment on the PA. Where a response was received this is recorded below the name of the agency.

6.1 Commissioner for Sustainability and the Environment

E-mail response received 7 July 2008.
Advised that the Commissioner will not be commenting at this stage on the PA.

6.2 Australian Federal Police

E-mail response received 22 July 2008.
Advised that no issues were identified.

6.3 Conservation Council of South East region and Canberra

No response received to date.

6.4 Asset Acceptance

E-mail response received 15 July 2008.
Advised as bellow:

- The proposed location for the eastern driveway conflicts with a nature strip tree.
- Ensure that there is sufficient space between the proposed western driveway and an existing streetlight to its west.
- There are new trees planted on the verges, eastern side of the Decre St if any of these developing trees (in the way of proposed driveway) are damaged during the development of the site they be relocated, or removed and replaced.
- Because of the slope of the block, the developer will need to put adequate erosion protection in place during excavation and construction. Asst Acceptance wants to monitor this.

6.5 ACT Emergency Services Agency

No response received to date.

6.6 ACT Health

Written response received 15 August 2008.
The Health Protection Services does not agree with the Proponent about their statement of "PCBs are low risk to human". They advised that PCBs are known carcinogenic materials, are highly toxic, persistent in nature and have a potential for bioaccumulation.

However the Health Protection Service is satisfied that the business is operated in accordance with the environment ACT authorisation therefore potential public health will be appropriately managed. The Service requests that the development includes monitoring and incident reporting requirements that provides notification to the Health Protection Service, where incidents occur.

6.7 ACT Environment Protection

E-mail response received 21 July 2008.
Advised that the activity is currently authorised under the EP Act (Environmental Authorisation No 400). The proposal will allow for the construction of a purpose built facility to house all treatment and storage operations which are currently undertaken on two separate sites in Mitchell. All operations are to be undertaken indoors in a fully bunded facility. Air emissions will be treated as per current Environmental Authorisation and be vented through a forced air extraction system.

7.0 Evaluation of need for Further Assessment

7.1 Compliance with Requirements of the Land Act

The PA meets the requirements of the Land Act in respect to Gazettal and public notification. The PA is in accordance with Schedule 3 of the Land Act.

7.2 Unresolved issues or impacts in community submissions or Ministers evaluation which are of significance to warrant further assessment.

The PA identifies and provides assessment of the potential impacts of the proposal on the natural, physical and human environments. Areas that are deficient have been detailed above and can be either resolved by using statutory controls and guidelines or will be considered during the construction phase. None of these issues were of significance to warrant further environmental assessment.

Resolution: No further assessment is required.

7.3 Issues or impacts requiring further analysis necessary to attain a level of confidence in the prediction of outcomes appropriate to the potential significance of the impact.

No issues were raised which could not be evaluated from material included in the PA or from material available for evaluation.

Resolution: No further assessment is required.

7.4 Situations where actions required to limit or ameliorate impacts are not covered by existing administrative or statutory controls, and consequently there is a need to use the provision of further Assessment under the Land Act to impose conditions subject to which the development maybe approved.

All amelioration measures required for the proposal are covered by existing administrative or statutory controls.

Resolution: No further assessment is required.

8.0 Conclusion

From the above technical evaluation it is concluded that there are minor environmental issues in relation to the development of the recycling plant that are not completely resolved. However, these issues can be unravelled by the implementation of the following recommendations, and conditioning and monitoring of the DA. Therefore no further impact assessment will be required.

9.0 Recommendation

No further environmental assessment is required for the proposal. Any future construction should be subject to the following recommendations:

i) The PA states the proposed facility will replace two existing sites in Mitchell. While the site at 20 Winchcombe Court is listed, the other location is not. Demolition or commissioning of the existing plant is not covered by this evaluation nor the associated DA and PA. A separate DA will be required for demolition of the existing plant.

ii) The Proponent should develop a mitigation strategy for erosion and sediment control protection measures. These measures will be required to be to the satisfaction of the Environment Protection Agency as required under the *Environment Protection Act 1997.*

iii) Appendix 9 refers to emission tests on a mobile plant and Appendix 8 refers to emission tests 10 years ago on a fixed plant in Queensland, not on the proposed site. The DA needs a statement clarifying that the equipment proposed to be used in the new development is identical to the plant tested in Appendix 8 & 9, for the appendixes to be relevant.

iv) Appendix 8 refers to 'stack dimensions'. However the drawings for this proposal do not indicate any exhaust stacks. It is assumed that the exhaust system will be fixed directly to the equipment. The gases should not be discharged into the interior of the building, and removed by a general building exhaust

system. If stacks are to be used, the diameter and height are required to be stated on the drawings submitted with the DA.

v) All construction and ground works undertaken on the site be limited to normal construction hours and must comply with the requirements of the *Environmental Protection Act 1997*. The proponent should also follow the guidelines set out in AS2436 – *Guide to Noise Control on Construction, Maintenance and Demolition Sites*.

vi) Existing trees on the verges must be protected from construction impacts. If any damage occurs in the construction period the trees need to be replaced at the proponent cost.

vii) The downpipes indicated on the external face of the northern wall must be located on the inside face of the building. If the downpipes are kept on the outside face they will be inaccessible if a building on the adjacent block is also built to this boundary.

viii) The PA does not cover the energy use and type of energy used for the proposed development. The DA must be submitted with a statement clarifying the Energy efficiency of the proposed development. The interior of the building will largely rely on artificial lighting. Providing a reasonable amount of translucent roof sheeting, subject to BCA requirements, will reduce the power requirements.

Director, Development Services
Environment Minister's Delegate
27 August 2008

10

ACT FIRE BRIGADE
FIRE SAFETY SECTION
PLAN REPORT

This plan report provides advice from the ACTFB following a review of the building design plans furnished to the ACT Fire Brigade, in accordance with Schedule 2 Part 2.2 Item 7 of the Building (General) Regulation 2008. The plan report is provided in accordance with Section 5.4 of the Emergencies Act 2004.

1. **Date of Report:** 19 February 2009
2. **ACTFB Reference:** 701-022-0015 (FS No. - 2009/012)
3. **Building Name:** **Oil Recycling Facility**
   60 Dacre St Mitchell
4. **Block, Section & Suburb:** 15 of 22, MITCHELL
5. **Type of Construction:** B
6. **Rise in Storeys:** 2
7. **Classification:** 5, 8.
8. **Scope of Building Works:**
   New building (Including Fitout)
9. **Building Certifier:**

10.FIRE APPLIANCES TO BE INSTALLED

Pursuant to Part 5.4 of the ACT Emergencies Act 2004, the owner of the building is hereby directed to install the following fire appliances in the building to the requirements of the most recent edition of both the BCA and the stipulated Australian Standard (AS):

- **AS1841.1 Portable fire extinguishers**

  A 3.5Kg CO_2 or 4.5kg dry chemical powder extinguisher is to be installed beside any fire hose reel and to the requirements of BCA Clause E1.6 & AS2444 Note: The discharge of a dry chemical powder extinguishant may have an adverse affect on sensitive electronic equipment.

Reason for error
E.1) Hang up or line fail
E.2) Busy
E.3) No answer
E.4) No facsimile connection

P.

* * * Memory TX Result Report (19.Feb. 2009 13:12) * * *

/Time: 19.Feb. 2009 13:11

Page
Not Sent

. Mode | Destination | Pg (S) | Result

) Memory TX | P. 4 | OK

Fire Safety section (ph) 0

ACT FIRE BRIGADE
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- **AS1221** **Fire hose reels**
  The hose reels are to be installed and located to the requirements of BCA Clause E1.4 & AS2441.

  Note: AS2441 part 6.5 - *Internal pipework,* requires compliance with AS2419.1, of which part 8.2.1(a) states: *plastic pipes and pipe fittings shall not be used.*

  ** The locations shown on submitted plans appears to provide acceptable coverage. Check coverage on site to the upper floor processing area.*

- **AS2293.3** **Emergency and exit lighting**

  Installed and located to the requirements of BCA Part E4 and AS2293.1

  All Disabled WC's to be provided with emergency lighting.

- **AS2419.1** **External fire hydrant(s)**

  Locations of existing hydrants not indicated on submitted plan.

  **** External Hydrants are to be located in accordance with AS2419.1,*** *specifically 3.2.2.2 (c)-*

  (i) all portions of the building shall be within reach of a 10m hose stream, issuing from a nozzle at the end of a 60m length of hose laid on the ground; and

  (ii) a minimum of 1m of hose shall extend into any room served.

  Each hydrant location to be denoted by a blue hydrant indicator that will be readily visible to responding fire brigade crews via the principal access route(s) to and around the premise. Attack Hydrants to be marked 'AH'.

- **AS2419.1** **Internal fire hydrants**
  The hydrants are to be installed & located to the requirements of BCA Clause E1.3 & AS2419.

- **AS1670.1** **Smoke detection system (standard)**
  ** Noted that there is a FIB located in the Reception*

Note: A person to whom a direction is given under the Fire Brigade Regulations may within 21 days from the date of the direction, appeal to the Supreme Court from the direction.

In accordance with Section 35 (b) of the Building (General) Regulation 2008 and the ACT Emergencies Act Part 5.4, all the fire safety systems listed above are required to be inspected by the ACTFB on completion of the building works (and commissioning & certification of fire safety systems) and prior to a Certificate of Completion of Works being issued by the Building Certifier.

11.FURTHER PLAN REVIEW OBSERVATIONS AND COMMENTS

After undertaking a review of the building plans for the purposes of stipulating the fire safety systems required by the ACTFB as listed in Section 10 of this report, the following issues were identified and will need to be addressed prior to the ACTFB carrying out an inspection of the fire appliances in the scope of building works at the completion of construction and commissioning:

SECTION D – ACCESS & EGRESS

- **BCA D1.10 Discharge from exits**
  **The eastern exits adjacent the waste enclosure and the roller door must be provided with suitable barriers to prevent vehicles blocking the exit.*
  **The exit path from western exit needs to comply with D1.10 and D2.20 of the BCA. Where the above exit path passes by car park 10 a suitable barrier may be required to prevent vehicles blocking the path to ensure compliance.*

You are hereby required to address these concerns to the satisfaction of the ACTFB prior to the ACTFB Clearance Inspection at the post construction stage, which is required under Section 35 (b) of the ACT Building (General) Regulation 2008 and part 5.4 of the ACT Emergencies ACT 2004.

RECOMMENDATION

- PRELIMINARY ASSESSMENT EVALUATION
  The preliminary assessment evaluation stated the facility was to comply with AS 1940 for the storage of combustible liquids. It is recommended that ACT Workcover be consulted to check for compliance with AS 1940-2004. The contact at ACT Workcover is phone and the postal address is GPO Box 158 CANBERRA CITY 2601.

12.BUILDING DESIGN & CONSTRUCTION

The design and construction of the relevant building works as well as its fire safety features, inclusions and systems are to comply with the most recent amendment to the Building Code of Australia 2008 (BCA) or any ACTFB endorsed alternative solution including the accompanied ACTFB conditions for the endorsement.

Note: In accordance with Section 48, Division 3.6 of the ACT Building Act 2004, final approval of the building works is the responsibility of the Building Certifier.

Report Prepared By:	**Station Officer**		19/2/09
Report Verified By:	**Station Officer**		19/2/09

For the Chief Officer ACT Fire Brigade

5

From:
To:
Sent: Thursday, 19 February 2009 2:11 PM
Subject: Read: Block 15 of 22 Mitchell

Your message

To:
Subject: Block 15 of 22 Mitchell
Sent: 19/02/2009 1:28 PM

was read on 19/02/2009 2:11 PM.

4

From: System Administrator
To:
Sent: Thursday, 19 February 2009 1:28 PM
Subject: Delivered: Block 15 of 22 Mitchell

Your message

To:
Subject: Block 15 of 22 Mitchell
Sent: 19/02/2009 1:28 PM

was delivered to the following recipient(s):

on 19/02/2009 1:28 PM

From:
Sent: Thursday, 19 February 2009 1:28 PM
To:
Subject: Block 15 of 22 Mitchell

I had a telephone conversation with this morning regarding a proposed transformer oil recycling facility to be located at Block 15 of 22 Mitchell. From the plans and information supplied to the ACT Fire Brigade by the certifier the facility will have between 500000 litres to 600000 litres of Class C1 or C2 combustible liquids stored in tanks indoors. The facility will also have a tanker transfer area and the liquids may contain PCB's.

While reviewing the plans for compliance with the fire safety components of the Building Code of Australia I noticed that the facility would not comply with the requirements of AS 1940-2004. The can be contacted on If you require any further information please call me on

Regards

Station Officer
ACT Fire Brigade

Tracking:

Recipient	Delivery
	Delivered: 19/02/2009 1:28 PM

9/2/09 701-022-0015 FS09/01

2

Plan Assessment/Inspection Request Form

Fax to the Fire Safety Section

Fax Ph

Postal Address : PO Box 104 Curtin ACT 2605

Service Requested :

Plan Assessment & Report ☑

Note: Copies of all relevant plans required.

Alternative Solution Report Commentary ☐

Note: Refer to Fire Safety Policy FS02 available from
http://www.firebrigade.act.gov.au/Prevention/Fire_Safety_policies/index.html

Inspection and Clearance ☐

Note: All copies of Compliance Certificates required at Final Inspection.

Inspections/ Site information:

Note: Fill out applicable sections

Inspection Date : ---------- **Time :** ----------

Inspection/site Address : ----------

Block : ---------- **Section :** ---------- **Suburb :** ----------

[Fire Safety File Number - Office use only] : ----------

Inspection Requested By :

Company : ---------- **Contact :** ----------

Mobile No : ---------- **Attention :** ----------

Invoice To :

Company : CERTIFIED BUILDING SOLUTIONS P/L.

Contact Name : ---------- **Phone / Fax :** ----------

Address : UNIT 1 25 BUCKLAND ST **Suburb :** MITCHELL.

Post Box : P.O. BOX 76 MITCHELL A/ **Post Code :** ~~254~~ 2911

Signed ----------

Plan Assessment Cover Sheet
Fire Safety Section

Ph 62078370 - Fax 62078387
Postal Address: PO Box 104 Curtin ACT 2605

Date Lodged : 6/2/2009.

Project Name : OIL RECYCLING FACILITY (WAREHOUSE/OFFICE)

Site Address : 60 DACRE STREET MITCHELL ACT. 2911

Certifier/Company : CERTIFIED BUILDING SOLUTIONS PTY LTD.

Certifier/Contact : P F M

Building Classification/s : 5 & 8

Number of Fire Compartments : 1

Proposed Type of Construction : B

Total Floor Area : 2700 m^2

Rise in Storeys : 2.

Proposed Fire Safety Systems

Proposed *active* fire safety systems :

1 FIRE HOSE REELS
2 FIRE HYDRANT COVERAGE.
3 EMERGENCY LIGHTING / EXIT SIGNS.
4
5
6

Proposed *passive* fire protection :

1 INTERNAL STEEL COLUMNS FIRE
2 RATED TO 240/240/240 MAX
3 TO 240/60/-
4
5
6

Proposed engineered/alternative solution/s :

NOT APPLICABLE.

General comments :

NEW OIL RECYCLING FACILITY (OFFICE/WAREHOUSE) TYPE 'B' CONSTRUCTION AS COMPARTMENT SIZE IS OVER 2000m^2. FIRE HYDRANT COVERAGE IS BEEN CHECKED & VERIFIED BY CONSULTANT.
10 NO STORAGE OIL TANKS.

Relevant Plans:
Note: All plans must be to scale.

- ✓ Floor plans
- ✓ Elevations
- ✓ Site plan for Fire Brigade access.
- Hydraulics in relation to fire services
- Electrical such as: Emergency lighting, exit signage.
- Mechanical, smoke management systems
- Fire Services such as: sprinklers, smoke detection.

SEWERAGE

1. ALL SEWERAGE SHALL COMPLY WITH AUSTRALIAN STANDARD AS3500, BCA, AND OTHER AUTHORITIES OR REGULATIONS HAVING JURISDICTION OVER THE INSTALLATION. MAKE ALL NECESSARY APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES.
2. CO-ORDINATE WITH OTHER SERVICES CONTRACTORS BEFORE COMMENCING TO DETERMINE THE CORRECT CONSTRUCTION SEQUENCE.
3. CONFIRM THE LOCATION AND LEVEL OF THE NOMINATED OUTLET BEFORE LAYING ANY DRAINS.
4. PIPE WORK SHALL BE DN100mm UNLESS NOTED OTHERWISE. ALL PIPE WORK SHALL BE EQUAL TO OR GREATER THAN THE NOMINATED OUTLET SIZE OF THE FIXTURE, APPLIANCE OR TUNDISH.
5. WASTE PIPES OF DN100 SHALL BE GRADED AT 1.65% AND ALL OTHER PIPE WORK SHALL BE GRADED AT 2.5%. VENTS SHALL BE GRADED AT 1.25%.
6. THE INSPECTION SHAFT AT THE PROPERTY BOUNDARY IS TO BE IN ACCORDANCE WITH PLUMBING NOTE 3.
7. ORG LEVELS ARE TO BE IN ACCORDANCE WITH AS3500.2.2 CLAUSE 4.6.6.6 & 4.6.6.7 AND ACTPLA PLUMBING NOTE 22.
8. UNPLASTICISED POLYVINAL CHLORIDE (UPVC) PIPE DRAINS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH AS2023 AND THE CANBERRA SEWEAGE AND WATER SUPPLY REGULATIONS.
9. PIPE WORK RECEIVING HOT DISCHARGES SHALL BE CONSTRUCTED OF BRASS OR HIGH DENSITY POLYETHYLENE (HDPE).
10. WHERE PIPE WORK PENETRATES FIRE RATED WALLS, CEILINGS OR FLOORS, A FIRE STOP COLLAR SHALL BE INSTALLED. ALL WORK SHALL BE STRICTLY INSTALLED TO THE MANUFACTURERS RECOMMENDATIONS. REFER TO THE SPECIFICATION FOR FURTHER DETAILS.
11. ALL PIPE WORK SHALL BE ADEQUATELY SUPPORTED SYSTEM SHALL BE DESIGNED TO SAFELY AND COMPLETELY SUPPORT THE WEIGHT OF PIPE WORK AND ASSOCIATED WORK. SUPPORT SYSTEM SHALL BE INSTALLED IMMEDIATELY ON PIPE INSTALLATION AND ALLOWANCE FOR EXPANSION PROVIDED.
12. ALL PIPE WORK SHALL BE CONCEALED IN WALL, VOID SPACE OR DUCTS UNLESS NOTED OTHERWISE.
13. PIPE WORK SHALL BE PRESSURE TESTED PROGRESSIVELY TO ENSURE NO LEAKS.
14. WHERE FLOOR WASTE GULLIES ARE INDICATED, THE FLOORS SHALL BE GRADED TOWARDS THE OUTLET.
15. TUNDISHES SHALL BE INSTALLED TO RECEIVE MECHANICAL PLANT WASTE IN LOCATIONS NOMINATED BY MECHANICAL ENGINEER. THESE TUNDISHES SHALL BE CONNECTED ABOVE THE TRAP SEAL OF THE NEAREST WASTE FIXTURE. THERE MUST BE AN AIR GAP OF 25mm FROM THE END OF THE DISCHARGE PIPE TO THE TOP OF THE TUNDISH AND THEY MUST BE LOCATED IN AN ACCESSIBLE POSITION.

HEALTH AND SAFETY

1. THE MAIN CONTRACTOR AND ALL SUB-CONTRACTORS SHALL COMPLY WILL APPLICABLE HEALTH AND SAFETY CODES OF PRACTICE, GUIDANCE NOTES, AUSTRALIAN STANDARDS AND OTHER RELEVANT DOCUMENTATION.
2. CURRENT LEGISLATION REQUIRES THAT ALL PERSONS ARE TO CONSIDER THEIR ACTIONS OR LACK OF ACTION ON THE HEALTH AND SAFETY OF THEMSELVES AND OTHERS. ADVICE ON SAFETY LEGISLATION IS AVAILABLE FROM THE HEALTH AND SAFETY EXECUTIVE OFFICER NOMINATED FOR THE PROJECT.
3. THE MAIN CONTRACTOR AND ALL SUB-CONTRACTORS SHALL IDENTIFY HAZARDS OR WORK SEQUENCES THAT MAY BE A RISK TO THE HEATH AND SAFETY OF CONSTRUCTION WORKERS. IF POSSIBLE, AVOID THE RISK COMPLETELY, IF NOT, ADVISE THE SITE MANAGEMENT FOR INCLUSION IN THE HEALTH AND SAFETY PLAN
4. THE MAIN CONTRACTOR AND ALL SUB-CONTRACTORS SHALL CARRY OUT RISK ASSESSMENTS FOR ALL OF THEIR ACTIVITIES AND WHERE NECESSARY INTRODUCE SUITABLE CONTROL MEASURES, OR PROVIDE PROTECTIVE CLOTHING TO MINIMISE THOSE RISKS. COPIES OF RISK ASSESSMENTS MUST BE PROVIDED TO THE SITE MANAGEMENT FOR INSPECTION.

FIRE HYDRANT / FIRE HOSE REEL

1. FIRE HOSE REELS ARE TO BE INSTALLED IN ACCORDANCE WITH AS2441.
2. FIRE HYDRANT SERVICE AND FIRE BRIGADE BOOSTER ASSEMBLY TO BE INSTALLED IN ACCORDANCE WITH AS2419.
3. CONTRACTOR TO ENSURE THAT ANY VALVE THAT CAN PREVENT FLOW OF WATER TO A FIRE HOSE REEL SHALL BE SECURED AND PADLOCKED IN THE OPEN POSITION. IT SHALL BE MARKED ON AN ATTACHED CORROSION-RESISTANT AND DURABLE TAG, WITH THE FOLLOWING IN 8mm UPPER CASE TEXT: FIRE SERVICE VALVE CLOSE ONLY TO SERVICE FIRE HOSE REELS.
4. IN ACCORDANCE WITH AS2419.1 NO PLASTIC PIPES OR PIPE FITTINGS SHALL BE USED FOR WATER SERVICES ABOVE GROUND SERVICING FIRE HOSE REELS AND FIRE HYDRANTS.

WATER REUSE

1. WHERE TREATED GREY WATER OR CAPTURED RAIN WATER IS TO BE REUSED A TESTABLE DOUBLE CHECK VALVE MUST BE INSTALLED AT THE PROPERTY BOUNDARY (PREFERABLY WITHIN THE WATER METER PIT). ALSO, A NON-TESTABLE DOUBLE CHECK VALVE IS TO BE INSTALLED ON THE DOMESTIC WATER SUPPLY PIPE FOR TANK TOP-UP.

MINIMUM INTERNAL DIMENSIONS STORMWATER AND INLET PITS

Depth to invert of outlet	Minimum internal dimensions		
	Rectangular		Circular
	Width	Length	Diameter
<600	450	450	600
>600 <900	600	600	900
>900 <1200	600	900	1000
>1200	900	900	1000

AS3500.3.2 Table 8.2

GENERAL WATER SUPPLY NOTES

1. ALL WATER SUPPLY SHALL COMPLY WITH AUSTRALIAN STANDARD AS3500, THE BUILDING CODE OF AUSTRALIA AND OTHER AUTHORITIES OR REGULATIONS HAVING JURISDICTION OVER THE INSTALLATION. MAKE ALL APPLICATIONS AND PAY ALL ASSOCIATED FEES AND CHARGES.
2. ALL COPPER PIPE WORK SHALL BE HARD DRAWN COPPER TUBING TYPE 'B' CONFORMING TO AS1432.
3. CROSSLINKED POYETHLENE TUBING MAY BE USED AS AN ALTERNATIVE TO COPPER TUBE EXCEPT FOR ANY PIPING EXPOSED EXTERNALLY, THE LAST ONE METRE AT THE HOT WATER UNIT OR PENETRATIONS THROUGH FIRE RATED ELEMENTS. EQUIVALENT PIPE SIZES SHALL BE USED IN ACCORDANCE WITH AS3500.
4. ALL PIPE WORK SHALL BE CONCEALED. WHERE PIPE WORK IS EXPOSED IT SHALL BE CHROME PLATED.
5. ALL PIPE WORK THROUGH FIRE RATED WALLS, FLOORS OR CEILING SHALL BE FIRE STOPPED.
6. PIPE SUPPORTS SHALL BE INSTALLED PROGRESSIVELY AS PIPES ARE INSTALLED. SUPPORT SYSTEM SHALL BE DESIGNED FOR SAFETY AND COMPLETELY SUPPORT THE WEIGHT AND THRUST OF PIPE WORK AND ASSOCIATED WORK. PIPE WORK SHALL BE ADEQUATELY ANCHORED AT THRUST POINTS.
7. ALL PIPE WORK SHALL BE DN20mm WITH DN15mm BRANCHES TO INDIVIDUAL FIXTURES UNLESS NOTED OTHER WISE. MAXIMUM LENGTH OF DN15mm BRANCHES SHALL BE 2.0m
8. DO NOT INSTALL PIPE WORK INTO SOUND INSULATED WALLS UNLESS OTHERWISE NOTED.
9. PAN CISTERNS SHALL BE PROVIDED WITH CHROME PLATED ISOLATION VALVES.
10. WHERE WATER PIPE IS IN CONTACT WITH DISSIMILAR METALS, THE METALS SHALL BE INSULATED AGAINST BI-METAL CORROSION.
11. ALL ISOLATION VALVES SHALL BE POSITIONED IN APPROVED ACCESSIBLE LOCATIONS. VALVES LOCATED IN DUCTS OR WALLS SHALL BE POSITIONED WITH APPROVED TYPE ACCESS COVERS.
12. HOSE COCKS SHALL BE 600mm ABOVE FINISHED SURFACE LEVEL AND SHALL BE 20mm IN SIZE, AND FITTED WITH ANTI-VANDAL TAPS AND APPROVED VACUUM BREAKERS.

HOT WATER

1. ALL ISOLATION VALVES AND THERMOSTATIC MIXING VALVES SHALL BE POSITIONED IN APPROVED ACCESSIBLE LOCATIONS. VALVES LOCATED IN DUCTS OR WALLS SHALL BE POSITIONED WITH APPROVED TYPE ACCESS COVERS.
2. HOT WATER INSTALLATIONS TO PERSONAL HYGIENE FIXTURES SHALL BE SET AT MAX. 50° CELSIUS BY USE OF TEMPERING VALVES.
3. HOT WATER INSTALLATION TO PERSONAL HYGIENE FIXTURES IN DISABLED AMENITIES IS TO BE VIA A THERMOSTATIC MIXING VALVE SET AT 43° CELCIUS.
4. HOT WATER INSTALLATIONS TO ALL KITCHEN AND TEA ROOM SINKS SHALL BE SET AT MAX. 60° CELSIUS DELIVERY. HAND BASINS IN THESE AREAS ARE TO BE FITTED WITH TEMPERING VALVES SET AT MAX. 50° CELSIUS
5. HOT WATER STORAGE UNITS SHALL BE SET TO STORE AT A MINIMUM OF 60° CELSIUS.

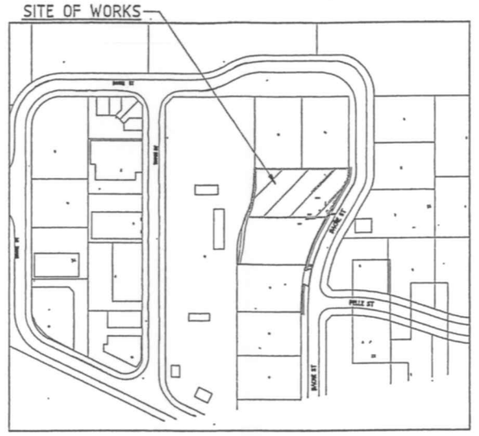
GENERAL NOTES

1. CONTRACTOR SHALL ENSURE THAT LOCATION OF ALL UNDERGROUND SERVICES ARE IDENTIFIED AND CO-ORDINATED PRIOR TO COMMENCEMENT OF WORKS AND EXCAVATIONS.
2. THIS PLAN IS TO BE READ IN CONJUNTION WITH ALL RELEVANT APPROVED ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS, SPECIFICATIONS AND ANY WRITTEN INSTRUCTIONS ISSUES DURING THE COURSE OF THE CONTRACT. DISCREPANCIES SHALL BE REFERRED TO THE PROJECT MANAGER FOR DECISION BEFORE PROCEEDING WITH WORK.
3. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THESE DRAWINGS. REFER TO THE ARCHITECTURAL DIMENSIONED DRAWINGS. VERIFY ALL DIMENSIONS ON SITE BEFORE PREPARATION OF SHOP DRAWINGS.
4. MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, THE CURRENT REVISION OF ALL RELEVANT SAA & AS CODES, THE REQUIREMENTS OF THE CANBERRA SEWERAGE AND WATER SUPPLY REGULATIONS, THE BUILDING CODE OF AUSTRALIA, LOCAL AUTHORITIES AND PROVISIONS OF THE CURRENT OCCUPATIONAL HEALTH AND SAFETY ACT.
5. THESE DRAWINGS INDICATE THE GENERAL HYDRAULIC SERVICES LAYOUT AND ARE DIAGRAMMATIC ONLY. THE CONTRACTOR MUST ALLOW FOR DIVERSIONS AND MINOR ADJUSTMENTS AS MAY BE NECESSARY TO PROVIDE AN INSTALLATION WHICH IS COMPLETE AND COMPLYING WITH THE SCOPE, ITS INTENT AND ALL CODES AND STANDARDS.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE BEFORE SUBMITTING A TENDER, TO VERIFY EXISTING CONDITIONS AND ANY ISSUES WHICH MAY IMPACT ON THE CONTRACT.
7. THESE DRAWINGS ARE STRICTLY COPYRIGHT AND SHALL NOT BE COPIED OR AMENDED WITHOUT THE WRITTEN CONSENT OF SELLICK CONSULTANTS PTY LTD.
8. UNLESS NOTED OTHERWISE ON A PARTICULAR DRAWING THESE NOTES SHALL APPLY TO ALL DRAWINGS IN THE SET.
9. THE NOTES ON THIS DRAWING ARE SUPPLEMENTARY TO AND DO NOT REPLACE THE SPECIFICATION TO WHICH THE CONTRACTOR MUST CONFORM.
10. FOR PENETRATIONS THROUGH BEAMS AND FOOTINGS REFER TO STRUCTURE ENGINEER'S DETAILS. ALL PENETRATIONS THROUGH FIRE RATED WALLS OR FLOORS SHALL BE APPROVED FIRE STOPPED. PROVIDE FIRE COLLARS TO ALL PENETRATIONS THROUGH PARTY WALLS, DUCTS, FLOORS, ETC.
11. PRIOR TO FORMING OR LORING ANY PENETRATIONS, THE HYDRAULIC SERVICES CONTRACTOR SHALL COORDINATE AND CONFIRM WITH THE BUILDER, STRUCTURAL CONCRETE CONTRACTOR AND ALL OTHER TRADES FOR THE LOCATION OF ALL PENETRATIONS.
12. CONTRACTOR SHALL PROVIDE "WORK AS EXECUTED" DRAWINGS AND PAY ALL ASSOCIATED FEES AT THE COMPLETION OF THE HYDRAULIC WORKS.

SANITARY FIXTURES

FIXT. No.	FIXTURE NAME	No. OFF	FU	FU TOTAL	LU	LU TOTAL
1	WATER CLOSET	4	4	16	2	8
2	BATH	-	4	-	8	-
3	BASIN	4	1	4	1	4
4	SHOWER	3	2	6	2	6
5	KITCHEN SINK	1	3	3	3	3
6	LAUNDRY TUB	-	-	-	-	-
7	URINAL	-	-	-	-	-
8	CLEANER'S SINK	-	-	-	-	-
TOTALS		12		29FU		21LU
PROBABLE SIMILTANEOUS FLOW						0.39L/s

SITE OF WORKS



LOCALITY PLAN

NOT TO SCALE

metres 0 2 4 6 8 10 12 14 16 18 20

Scale 1:200

Ⓐ STIEBEL ELTRON DHB-E27 3 PHASE ELECTRIC WATER HEATER IN CEILING SPACE. (SET AT 43.5°C).

Ⓑ STIEBEL ELTRON DHB-E18 3 PHASE ELECTRIC WATER HEATER IN CEILING SPACE. (SET AT 60°C WITH TMV SET AT 37.5°C).

Ⓒ STIEBEL ELTRON SNU-10S UNDER SINK SINGLE PHASE ELECTRIC WATER HEATER.

DRAINAGE PLAN NUMBER:

PLAN OF SANITARY DRAINAGE

DESIGNED TO AS3500

OWNER OWNER

BLOCK 15 SECTION 22

SUBURB MITCHELL

LEGEND

- SEWER MAIN
- STORMWATER MAIN
- WATER MAIN
- ABANDOND LINES
- EXISTING SEWER LINES
- EXISTING STORMWATER LINES
- EXISTING DOMESTIC WATER
- EXISTING FIRE SERVICE
- SEWER LINES
- SEWER VENT
- STORMWATER LINES
- DOMESTIC WATER
- NON-POTABLE WATER SUPPLY
- HOT WATER
- FIRE SERVICE
- TRADE WASTE
- FOP — 100Ø AGRICULTURAL PIPE IN FILTER SOCK CONNECTED TO STORMWATER. FLUSHOUT POINT AT END. SEE DETAIL
- BV — BALANCING VALVE
- REMOTE READOUT HOT WATER METER
- THERMOSTATIC MIXING VALVE
- DIRECTION OF FLOW
- FHR / DVC
- H — STANDARD STREET HYDRANT
- SC — STOP COCK
- WM — WATER METER
- DROPPER
- RISER
- IC — INSPECTION CHAMBER WITH LID, CLASS D CI COVER
- GS — GRATED SUMP WITH HD CLASS D CI GRATE + FRAME IN ACCORDANCE WITH AS3500.3 TABLE 8.2

REFERENCE

AAV	AIR ADMITTANCE VALVE
BT	BUCKET TRAP
CO	CLEAR OUT
CWR/D	COLD WATER RISER/DROPPER
DCV	DOUBLE CHECK VALVE
DICL	DUCTILE IRON CEMENT LINED
DT	DISCONNECTOR TRAP
FHR	FIRE HOSE REEL
FOP	FLUSH OUT POINT
FU	FIXTURE UNIT
FW	FLOOR WASTE
GMS	GALVANISED MILD STEEL
GSD	GRATED SPOON DRAIN
H	HYDRANT
H/L	HIGH LEVEL
HC	HOSE COCK
HDPE	HEAVY DUTY POLYETHELENE
IO	INSPECTION OPENING
IS	INSPECTION SHAFT
O/F	OVERFLOW
ORG	OVERFLOW RELIEF GULLY
PBD	PLANTER BOX DRAIN
PRV	PRESSURE REDUCTION VALVE
RPZD	REDUCED PRESSURE ZONE DEVICE
SC	STOP COCK
SMH	SEWER MANHOLE
SRM	SEWER RISING MAIN
SS	SOIL STACK
ST	SILT TRAP
SVP	SOIL VENT PIPE
SWRM	STORMWATER RISING MAIN
SV	STOP VALVE
TD	TUNDISH
TG	TEST GATE
TTD	TRAPPED TUNDISH
UPVC	UNPLASTICISED POLYVINAL CHLORIDE
VC	VITRIFIED CLAY
VJU	VERTICAL JUMP UP
VP	VENT PIPE
WM	WATER METER
WS	WASTE STACK

PLUMBING PLAN APPROVED

APPROVED BY _____

REG. NUMBER _____

DATE _____

ISSUE	AMEND	DESCRIPTION	DATE	DRAWN
C		REISSUED FOR REVIEW	10.02.09	CMA
B		FOR REVIEW	09.02.09	CMA
A		FOR INFORMATION	02.02.09	MB

CLIENT: ESI

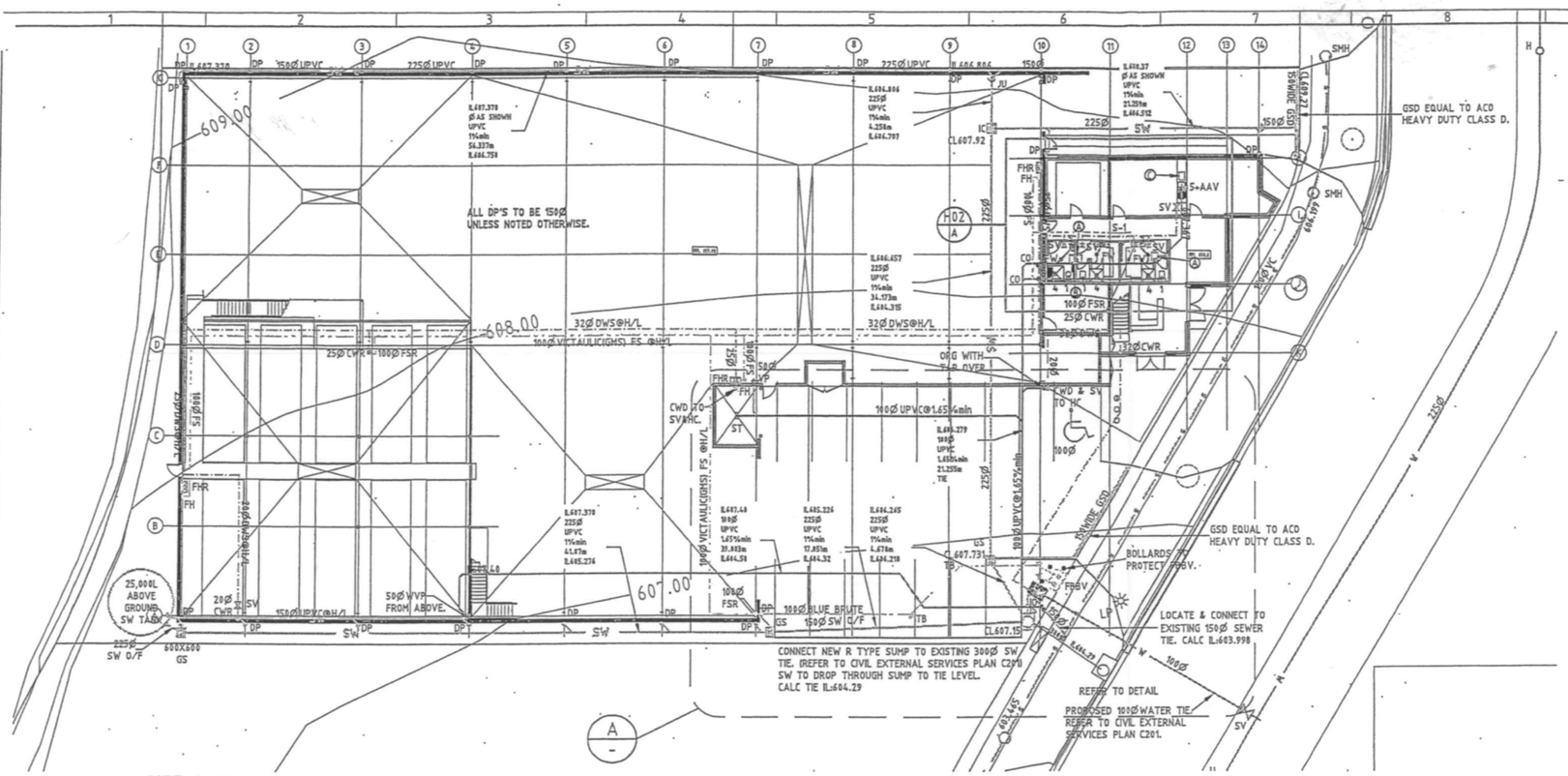
PROJECT TITLE: PROPOSED OIL RECYCLING FACILITY

DESIGNED BY: IK
CHECKED BY: GF
AUTHORISED BY:
DATE:

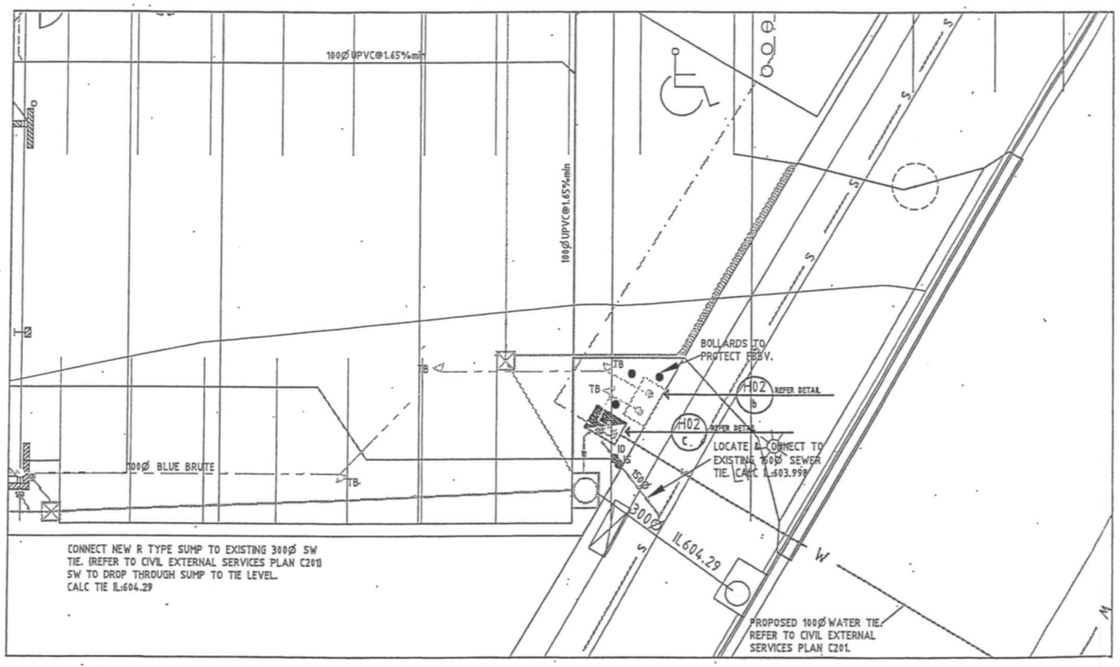
DRAWING TITLE: HYDRAULIC SERVICES COVER SHEET & NOTES

PROJECT LOCATION: BLOCK 15 SECTION 22 MITCHELL

SCALE: AS SHOWN
JOB NO.: 80060
DRAWING NO.: H01



SITE & GROUND FLOOR PLAN
SCALE 1:200



INSERT A
SCALE 1:100

metres 0 2 4 6 8 10 12 14 16 18 20
Scale 1:200

DRAINAGE PLAN NUMBER:

PLAN OF SANITARY DRAINAGE
DESIGNED TO AS3500

OWNER OWNER
BLOCK 15 SECTION 22
SUBURB MITCHELL

LEGEND

- SEWER MAIN
- STORMWATER MAIN
- WATER MAIN
- ABANDOND LINES
- EXISTING SEWER LINES
- EXISTING STORMWATER LINES
- EXISTING DOMESTIC WATER
- EXISTING FIRE SERVICE
- SEWER LINES
- SEWER VENT
- STORMWATER LINES
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- NON-POTABLE WATER SUPPLY
- HOT WATER
- FIRE SERVICE
- TRADE WASTE
- FOP — 100Ø AGRICULTURAL PIPE IN FILTER SOCK CONNECTED TO STORMWATER. FLUSHOUT POINT AT END. SEE DETAIL
- BV — BALANCING VALVE
- REMOTE READOUT HOT WATER METER
- THERMOSTATIC MIXING VALVE
- DIRECTION OF FLOW
- DVC FHR — FHR WITH TESTABLE DOUBLE CHECK VALVE WITH LOCKING DEVICE
- H — STANDARD STREET HYDRANT
- SC — STOP COCK
- WM — WATER METER
- DROPPER
- RISER
- IC — INSPECTION CHAMBER WITH LID, CLASS D CI COVER
- GS — GRATED SUMP WITH HD CLASS D CI GRATE + FRAME IN ACCORDANCE WITH AS3500.3 TABLE 8.2

REFERENCE

AAV	AIR ADMITTANCE VALVE
BT	BUCKET TRAP
CO	CLEAR OUT
CWR/D	COLD WATER RISER/DROPPER
DCV	DOUBLE CHECK VALVE
DICL	DUCTILE IRON CEMENT LINED
DT	DISCONNECTOR TRAP
FHR	FIRE HOSE REEL
FOP	FLUSH OUT POINT
FU	FIXTURE UNIT
FW	FLOOR WASTE
GMS	GALVANISED MILD STEEL
GSD	GRATED SPOON DRAIN
H	HYDRANT
H/L	HIGH LEVEL
HC	HOSE COCK
HDPE	HEAVY DUTY POLYETHELENE
IO	INSPECTION OPENING
IS	INSPECTION SHAFT.
O/F	OVERFLOW
ORG	OVERFLOW RELIEF GULLY
PBD	PLANTER BOX DRAIN
PRV	PRESSURE REDUCTION VALVE
RPZD	REDUCED PRESSURE ZONE DEVICE
SC	STOP COCK
SMH	SEWER MANHOLE
SRM	SEWER RISING MAIN
SS	SOIL STACK
ST	SILT TRAP
SVP	SOIL VENT PIPE
SWRM	STORMWATER RISING MAIN
SV	STOP VALVE
TD	TUNDISH
TG	TEST GATE
TTD	TRAPPED TUNDISH
UPVC	UNPLASTICISED POLYVINAL CHLORIDE
VC	VITRIFIED CLAY
VJU	VERTICAL JUMP UP
VP	VENT PIPE
WM	WATER METER
WS	WASTE STACK

(A) STIEBEL ELTRON DHB-E27 3 PHASE ELECTRIC WATER HEATER IN CEILING SPACE. (SET AT 43.5°C).

(B) STIEBEL ELTRON DHB-E18 3 PHASE ELECTRIC WATER HEATER IN CEILING SPACE. (SET AT 60°C WITH TMV SET AT 37.5°C).

(C) STIEBEL ELTRON SNU-10S UNDER SINK SINGLE PHASE ELECTRIC WATER HEATER.

PLUMBING PLAN APPROVED
APPROVED BY
REG. NUMBER
DATE

ISSUE	AMEND	DESCRIPTION	DATE	DRAWN
C		REISSUED FOR REVIEW	10.02.09	CMA
B		FOR REVIEW	09.02.09	CMA
A		FOR INFORMATION	02.02.09	MB

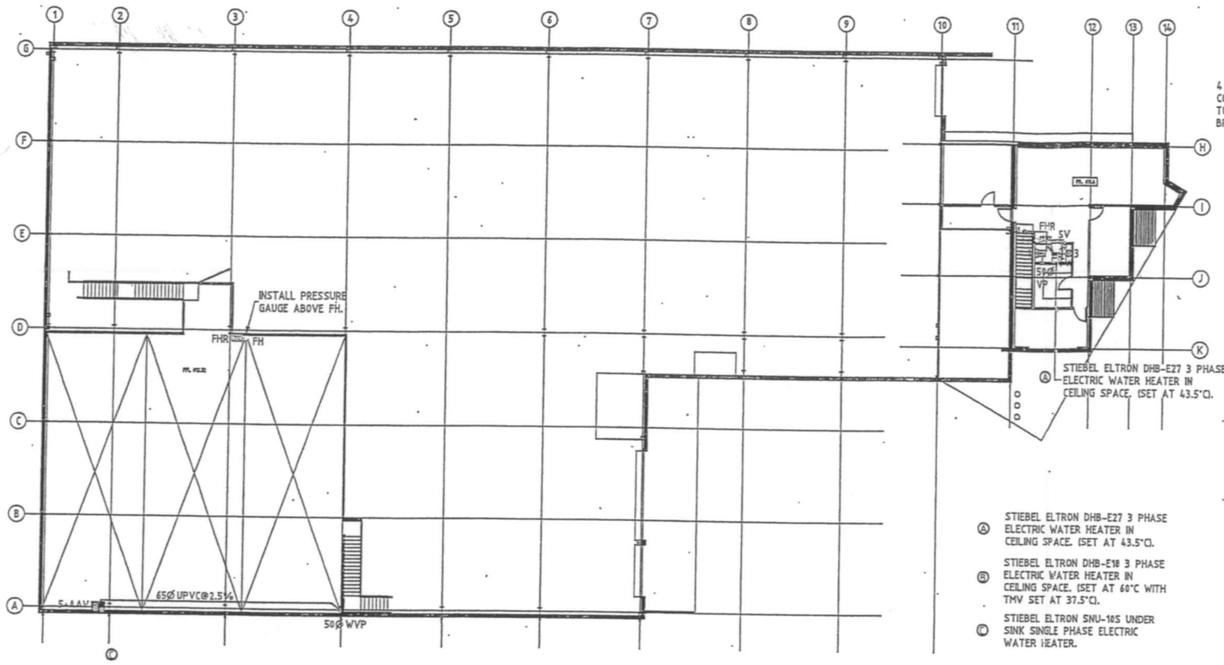
CLIENT: ESI
PROJECT TITLE: PROPOSED OIL RECYCLING FACILITY
DESIGNED BY: IK
CHECKED BY: GF
AUTHORISED BY:
DATE:
DRAWING TITLE: HYDRAULIC SERVICES GROUND FLOOR PLAN
PROJECT LOCATION: BLOCK 15 SECTION 22 MITCHELL
SCALE: AS SHOWN
JOB NO.: B0060
DRAWING NO.: H01.1

DRAINAGE PLAN NUMBER:

PLAN OF SANITARY DRAINAGE

DESIGNED TO AS3500

OWNER OWNER
BLOCK 15 SECTION 22
SUBURB MITCHELL

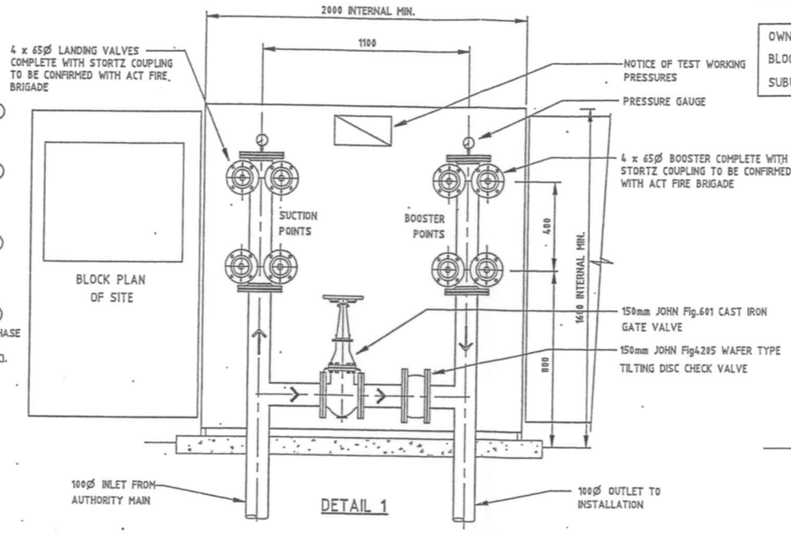


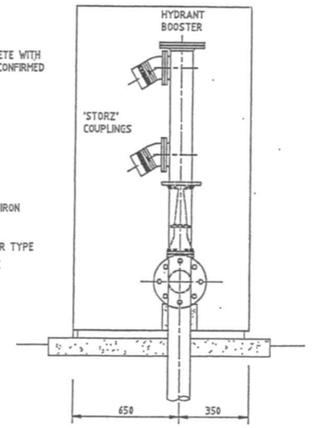
LEVEL 1 FLOOR PLAN
SCALE 1:200

Ⓐ STIEBEL ELTRON DHB-E27 3 PHASE ELECTRIC WATER HEATER IN CEILING SPACE. (SET AT 43.5°C).

Ⓑ STIEBEL ELTRON DHB-E18 3 PHASE ELECTRIC WATER HEATER IN CEILING SPACE. (SET AT 60°C WITH TMV SET AT 37.5°C).

Ⓒ STIEBEL ELTRON SNU-16S UNDER SINK SINGLE PHASE ELECTRIC WATER HEATER.





SIDE VIEW

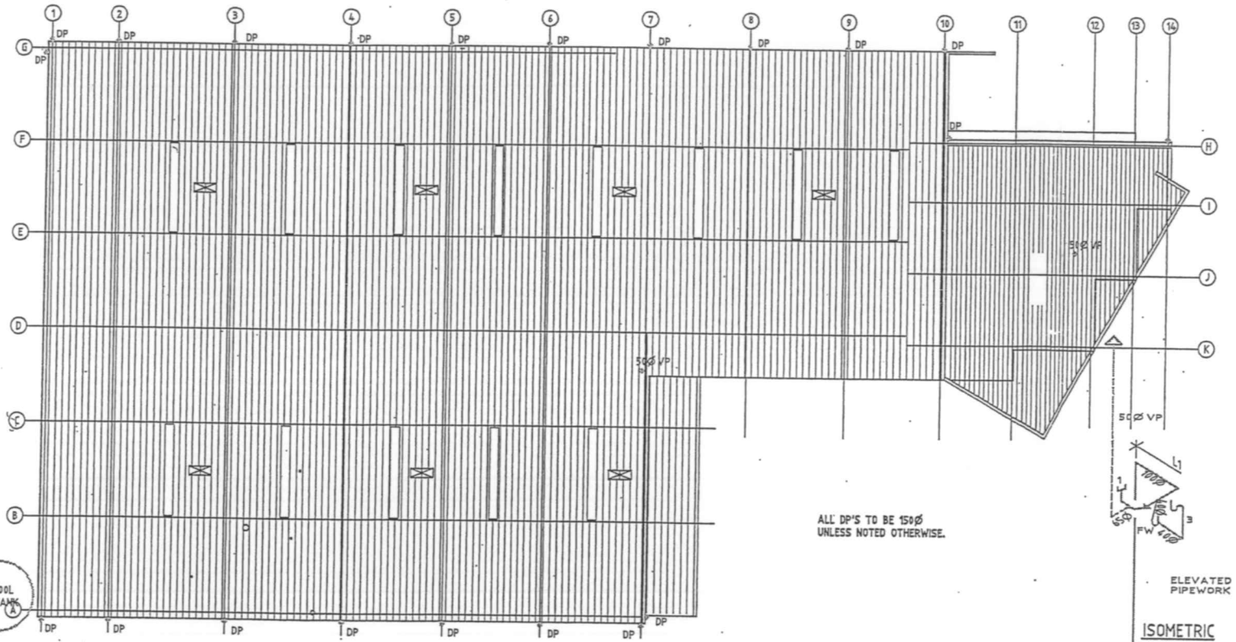
H01 B — 4 POINT FIRE BRIGADE BOOSTER VALVE ASSEMBLY IN LOCKABLE CABINET

NOT TO SCALE

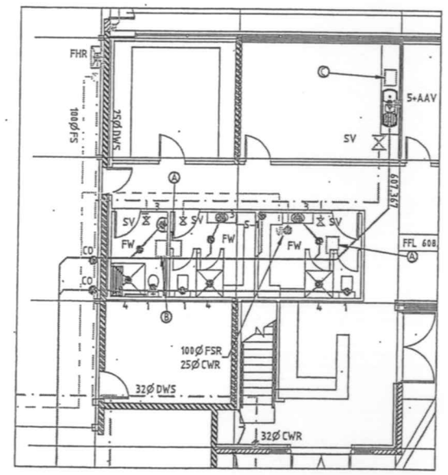
NOTE: ALL PIEWORK TO BE HOT DIPPED GALVANIZED. ALL FLANGES TO BE TABLE 'E'

CABINET TO BE CONSTRUCTED IN ACCORDANCE WITH AS2419.1 SECTION 5 FOR EXTERNAL CABINETS.

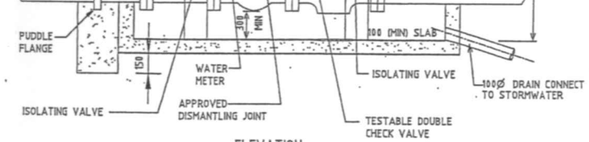
DOORS TO BE SECURED SHUT BY A LOCK OBTAINED BY ACT FIRE BRIGADE.



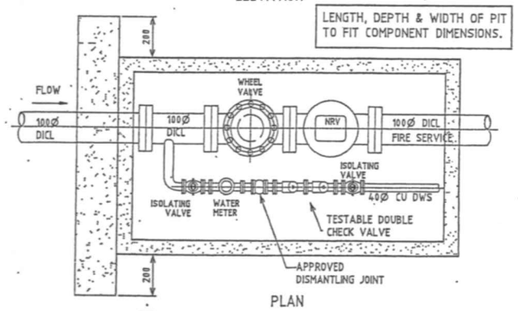
ROOF PLAN
SCALE 1:200



H01 A — GROUND FLOOR WET AREA LAYOUT
SCALE 1:100



ELEVATION



PLAN

H01 C — WATER METER PIT DETAIL
SCALE 1:100

metres 0 2 4 6 8 10 12 14 16 18 20
Scale 1:200

PLUMBING PLAN APPROVED
APPROVED BY
REG. NUMBER
DATE

ISSUE	AMEND	DESCRIPTION	DATE	DRAWN
C		REISSUED FOR REVIEW	10.02.09	CMA
B		FOR REVIEW	09.02.09	CMA
A		FOR INFORMATION	02.02.09	MB

CLIENT: ESI

PROJECT TITLE: PROPOSED OIL RECYCLING FACILITY

DESIGNED BY: IK
CHECKED BY: GF
AUTHORISED BY:
DATE:

DRAWING TITLE: HYDRAULIC SERVICES FIRST FLOOR & ROOF PLAN & DETAILS

PROJECT LOCATION: BLOCK 15 SECTION 22 MITCHELL

SCALE: AS SHOWN
JOB NO.: 80060
DRAWING NO.: H02