Peter J Boyce & Associates

Accredited Building Surveyors

Planning NSW Accreditation No: BPB0043
ABN: 92 616 124 481

t 9868 2855 | f 9868 2655
e info@boycecorp.com.au

PO Box 375, Strathfield NSW 2135
Suite 405, 51 Rawson Street, Epping NSW 2121

30 October 2016

Pittwater Council
Attention: The General Manager
PO Box 882
MONA VALE NSW 1660

Dear Sir / Madam

88 Cabbage Tree Road, Bayview
Submission of Modified Construction Certificate BP15149(M)

I have received application for a Modified Construction Certificate ("Modified CC") in respect of the above property in relation to Development Consent DAN0105/14; DAN0105/14/S96/1. The Modified CC has been approved.

As such, please find enclosed:

1. Modified CC
2. Cheque for $36 for the registration of the Modified CC
3. Completed application form
4. Section 96 Amendment – Septic Upgrade
5. Urban Waterways & Wetlands statement in relation to proposed modification works
6. NSW Gov. Health Cert. of Accreditation
7. BPAD Bushfire planning & Design Level 3
8. Architects Statement/Schedule of Modification
9. On-Site Sewer Management Report – Revision 2
10. JCL Dev. Solutions Onsite Sewerage Management System Assessment
11. Site Stormwater Management

Should any of the above documents not be received please advise me immediately.

Yours faithfully

Peter Boyce

Rec: 403412 2/11/2016 PRVC $36

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Modified Construction Certificate

Certificate No.
BP15149(M)

SECTION A. The Application

1. Details of the Applicant

Name
Jan Page & Graham Page

Address
c/- Peter Stutchbury Architects
5/364 Barrenjoey Road

Suburb or town	State	Postcode
Newport	NSW	2107

2. Details of the Property

Unit/Street no.	Street name
88	Cabbage Tree Road

Suburb or town	State	Postcode
Bayview	NSW	2104

Lot no.	Section	DP / SP no.	Volume/folio
Lot 8		DP 19161	

3. Description of the proposed development

Demolition of existing dwelling and construction of a new single dwelling, pool and storage structure - Modified - Upgrade of existing septic system

4. Development Consent

Date of Development Consent	8 August 2016
Development Consent reference no.	DAN0105/14; DAN0105/14/S96/1
Name of Council	Pittwater Council

5. Date of the application for Modified Construction Certificate

29 September 2016

6. Date Application received by the Certifying Authority

4 October 2016

SECTION B. Certifying Authority

Name

Peter Boyce

Accreditation no.

BPB0043

Address

Suite 405, 51 Rawson Street, Epping NSW 2121

SECTION C. Class of building

Class of the proposed building under the Building Code of Australia.
Note: If parts of the building will have different classes, include all classes.

1a, 10a, 10b

SECTION D. Conditions

☐ This certificate is subject to the conditions set out in the attached Schedule of Conditions (indicate if applicable)

SECTION E. Attachments (indicate as appropriate)

☐ Conditions schedule ☐ Fire safety schedule ☐ Fire link conversion schedule

SECTION F. Date

Date of this Certificate

31 OCT 2016

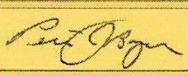
SECTION G. Certification

I certify that work completed in accordance with the documentation accompanying the Application for this Certificate (with such modifications, if any, verified by me as may be shown on that documentation) will comply with the requirements of the *Environmental Planning & Assessment Regulation 2000* as referred to in s.81A(5) of the *Environmental Planning & Assessment Act 1979*.

The documents listed below accompanied the Application for this Certificate.
Note: The Certificate is to be endorsed upon all relevant plans and specifications.

JCL Development Solutions drawing no 2013-P45 sheet nos. H01 and H02; Peter Stutchbury Architecture drawing no. CC 100;

SECTION H. Signature*



* Must only be signed by the Certifying Authority

Peter J Boyce & Associates

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PO Box 375, Strathfield NSW 2135
Suite 405, 51 Rawson Street, Epping NSW 2121

Application for a Modified Construction Certificate

RECEIVED 4 OCT 2016

Information for the Applicant

- This form may be used to apply for a Modified Construction Certificate to carry out building work under your development consent from Council.
- To minimise delay in receiving a decision about the Application, please fill in all sections and ensure all relevant information and documents are provided.
- Once completed, this Application form should be submitted to Peter J Boyce & Associates for determination.
- A Modified Construction Certificate has no effect if it is issued after the building work or subdivision work to which it relates is physically commenced on the land to which the relevant development consent applies.

SECTION A. Details of the Applicant*

**An application for a Modified Construction Certificate may only be made by a person who has the benefit of the development consent. An application may not be made by person who will carry out the building work or subdivision work unless that person owns the land on which the work is to be carried out.*

1. Applicant name:

i) Where the Applicant is a natural person or persons:

Mr ☐ Ms ☐ Mrs ☒ Dr ☐ Other _____

First name: Jan

Family name: Page

Mr ☒ Ms ☐ Mrs ☐ Dr ☐ Other _____

First name: Graeme

Family name: Page

ii) Where the Applicant is a corporate entity:

Company (if applicable):

ABN (if applicable):

2. Applicant contact details:

Unit/Street no.: 3/30

Street Name / Postal Address: Bonner Ave

Suburb or town: Manly

State: NSW

Postcode: 2095

Daytime telephone: 0438 114 933

Fax:

Mobile:

Email: janpage150@hotmail.com

SECTION B. Location and title details of the land where the building work or subdivision work is to be carried out

Unit/Street no.	Street Name
88	Cabbage Tree Road

Suburb or town	State	Postcode
Bayview	NSW	2104

Lot no.	Section
8	

DP / SP no.	Volume/folio
19161	

SECTION C. Description of the building work or subdivision work to be carried out

Briefly describe the development. For example, if a dwelling is proposed, include information such as the type of building (house, townhouse, villa etc), the number of floors, the number of bedrooms, the major building material (brick, brick veneer, timber clad etc).

Upgrade to existing septic system

Class(s) of building(s) under the Building Code of Australia: ~~N/A~~ 1a, 10a, 10b

SECTION D. Estimated cost of the development

$ **24,000**

The contract price, or if there is no contract a genuine and accurate estimate, for all labour and material costs associated with all demolition and construction required for the development, including the cost of construction of any building and the preparation of a building for the purpose for which it is to be used (such as the costs of installing plant, fittings, fixtures and equipment). GST is also to be included.

SECTION E. Development Consent

Date of Development Consent (if already granted)	**8 August 2016**
Development Consent reference no.:	**N0105/14/S96/1**
Name of consent authority:	**Pittwater Council**
Name of applicant for Development Consent:	**Emma Trask (architect)**

Provide:

A copy of the Development Consent, including:

- approved plans endorsed by the consent authority
- conditions of development consent
- other documents referenced by the development consent that are relevant to this Application.

SECTION F. Planning agreements

If the development or the land upon which the development is to be carried out is subject to a planning agreement as referred to in section 93F EP&A Act, provide a copy of the planning agreement.

SECTION G. Attachments relating to the proposed development

Applicants must provide the documents listed below that are relevant to the type of development that is proposed. Please place a cross in the appropriate box(s) to indicate the type of development involved. Confirm with our office how many copies of each document are required prior to lodging this Application.

1. Does the Application relate ONLY to a FIRE LINK CONVERSION? ☐ *Yes* ☒ *No*

If Yes-provide:

A document that describes the design and construction and mode of operation of the new fire alarm communication link.

2. Does the development involve SUBDIVISION WORK? ☐ *Yes* ☒ *No*

If Yes-provide:

Appropriate subdivision work plans and specifications, which include copies of:

(a) details of the existing and proposed subdivision pattern (including the number of lots and the location of roads)
(b) details as to which public authorities have been consulted with as to the provision of utility services to the land concerned
(c) detailed engineering plans as to the following matters:
  (i) earthworks
  (ii) roadworks
  (iii) road pavement
  (iv) road furnishings
  (v) stormwater drainage
  (vi) water supply works
  (vii) sewerage works
  (viii) landscaping works
  (ix) erosion control works
(d) copies of any compliance certificates to be relied on.

3. BUILDINGS

3.1 Does the development involve building work (including in relation to a dwelling house or building or structure ancillary to a dwelling house)? ☒ *Yes* ☐ *No*

If Yes-provide:

(1) A detailed description of the development, indicating:

(a) for each proposed new building:
  (i) the number of storeys (including underground storeys) in the building
  (ii) the gross floor area of the building (in square metres)
  (iii) the gross site area of the land on which the building is to be erected (in square metres)

(b) for each proposed new residential building:
  (i) the number of existing dwellings on the land on which the new building is to be erected
  (ii) the number of those existing dwellings that are to be demolished in connection with the erection of the new building
  (iii) the number of dwellings to be included in the new building
  (iv) whether the new building is to be attached to any existing building
  (v) whether the new building is to be attached to any other new building
  (vi) whether the land contains a dual occupancy
  (vii) the materials to be used in the construction of the new building by completing the table in **SECTION M**

(2) Appropriate building work plans and specifications, which include copies of:

(a) detailed plans, drawn to a suitable scale and consisting of a block plan and a general plan, that show:

(i) a plan of each floor section
(ii) a plan of each elevation of the building
(iii) the levels of the lowest floor and of any yard or unbuilt on area belonging to that floor and the levels of the adjacent ground
(iv) the height, design, construction and provision for fire safety and fire resistance (if any)

(b) specifications for the development:
(i) that describe the construction and materials of which the building is to be built and the method of drainage, sewerage and water supply, and
(ii) that state whether the materials to be used are new or second-hand and (in the case of second-hand materials) give particulars of the materials to be used

(c) a statement as to how the performance requirements of the *Building Code of Australia* are to be complied with (if an alternative solution, to meet the performance requirements, is to be used)

(d) a description of any accredited building product or system sought to be relied on for the purposes of section 79C(4) of the *Environmental Planning and Assessment Act 1979* (EP&A Act)*

(e) copies of any compliance certificate to be relied on

(f) if the development involves building work to alter, expand or rebuild an existing building, a scaled plan of the existing building

(g) if a BASIX certificate has been obtained for the development, such others matters as the BASIX certificate requires to be included in the plans and specifications.

** S.79C(4) EP&A Act provides that a consent authority must not refuse to grant consent to development on the ground that any building product or system relating to the development does not comply with a requirement of the Building Code of Australia if the building product or system is accredited in respect of that requirement in accordance with the EP&A regulation 2000.*

3.2 Does the development involve building work (other than work in relation to a dwelling-house or a building or structure that is ancillary to a dwelling-house or work that relates only to fire link conversion)? ☐ *Yes* ☒ *No*

If Yes-provide:

(a) A list of any existing fire safety measures provided in relation to the land or any existing building on the land.

(b) A list of the proposed fire safety measures to be provided in relation to the land and any building on the land as a consequence of the building work.

3.3 Does the development involve an alternative solution under the Building Code of Australia ("BCA") in respect of a fire safety requirement? ☐ *Yes* ☒ *No*

If Yes-provide:

Either or both of the following from a ***"fire safety engineer"*** (a private accredited certifier holding Category C10 accreditation):

(a) A compliance certificate (as referred to in s.109C(1)(a)(v) EP&A Act) that certifies that the alternative solution complies with the relevant performance requirements of the BCA.

(b) A written report that includes a statement that the alternative solution complies with the relevant requirements of the BCA.

Note: The above requirement only applies to building work in respect of:
(a) a class 9a building that is proposed to have a total floor area of 2000 square metres or more
(b) any building (other than a class 9a building) that is proposed to have:
(i) a fire compartment with a total floor area of more than 2000 square metres or
(ii) a total floor area of more than 6000 square metres
that involves an alternative solution under the BCA in respect of the requirements set out in EP1.4, EP2.1, EP2.2, DP4 and DP5 in Volume 1 of the BCA.

3.4 Does the Application relate to a residential flat development for which the development application was required under Clause 50(1A) of the EP&A Regulation to be accompanied by a design verification from a qualified designer? ☐ *Yes* ☒ *No*

If Yes-provide:

A statement from a qualified designer which verifies that the plans and specifications achieve or improve the design quality of the development for which development consent was granted, having regard to the design quality principles set out in Part 2 of *State Environmental Planning Policy No. 65: Design Quality of Residential Flat Development* (SEPP 65)

Note: If the development application was also required to be accompanied by a BASIX certificate with respect to any building, the statement need not verify the design quality principles set out in SEPP 65 to the extent to which they aim to
- *reduce consumption of mains-supplied potable water, or reduce emissions of greenhouse gases, in the building or in the use of the land that it is built on, or*
- *improve the thermal performance of the building.*

3.5 Has the Fire Commissioner granted an exemption under clause 188 EP&A Regulation from compliance with any specified Category 3 fire safety provision?

☐ Yes ☒ No

If Yes-provide:

A copy of the exemption together with any conditions imposed.

3.6 Is any long service payment levy payable under s.34 of the Building and Construction Industry Long Service Payments Act 1986? ☐ Yes ☒ No

If Yes-provide:

A copy of a receipt for any long service payment levy that has been made (or, where such a levy is payable by instalments, a receipt for the first instalment of the levy).

Where a council is the certifying authority, the levy may be made to the council when this Application is lodged.

3.7 Does the Application involve a BASIX affected development, or a BASIX optional development for which a BASIX certificate has been obtained? ☒ Yes ☐ No

If Yes-provide:

The BASIX certificate(s) for the development (being either the BASIX certificate issued when the development consent was granted or some other BASIX certificate(s) that have been issued no earlier than three months before the date of the Application being made), and such other documents as the BASIX certificate(s) for the development requires to accompany the Application.

BASIX (the Building and Sustainability Index) ensures homes are built to be more energy and water efficient. BASIX uses an online program to assess a building's design and compares it against energy and water reduction targets. The design must meet these targets before a BASIX certificate can be printed. Any changes made to a building's design after a BASIX certificate has been issued requires another BASIX assessment and new BASIX certificate. ***"BASIX affected buildings"*** *contain one or more dwellings (but do not include hotels or motels).*

A BASIX certificate ***MUST*** *be obtained for every "****BASIX affected development"****, which are any of the following (other than development that is "****BASIX excluded development"****):*

- *(a) development that involves the erection (but not the relocation) of a BASIX affected building*
- *(b) development that involves a change of building use by which a building becomes a BASIX affected building*
- *(c) development that involves the alteration, enlargement or extension of a BASIX affected building, where the estimated construction cost of the development is $50,000 or more*
- *(d) development for the purpose of a swimming pool or spa, or combination of swimming pools and spas, that services or service only one dwelling and that has a capacity, or combined capacity, of 40,000 litres or more.*

"BASIX excluded development" *is*

- *(a) development for the purpose of a garage, storeroom, car port, gazebo, verandah or awning*
- *(b) alterations, enlargements or extensions to a building listed on the State Heritage Register under the Heritage Act 1977*
- *(c) alterations, enlargements or extensions that result in a space that cannot be fully enclosed (for example, a veranda that is open or enclosed by screens, mesh or other materials that permit the free and uncontrolled flow of air), other than a space can be fully enclosed but for a vent needed for the safe operation of a gas appliance*
- *(d) alterations, enlargements or extensions that the Director-General has declared, by order published in the Gazette, to be BASIX excluded development.*

A BASIX Certificate ***MAY*** *be obtained for certain developments by an Applicant even though there is no obligation to do so. This is called* ***"BASIX optional development"****. "****BASIX optional development"*** *means any of the following development that is not BASIX excluded development:*

- *(a) development that involves the alteration, enlargement or extension of a BASIX affected building, where the estimate of the construction cost of the development is less than $50,000*
- *(b) development for the purpose of a swimming pool or spa, or combination of swimming pools and spas, that services or service only one dwelling and that has a capacity, or combined capacity, of less than 40,000 litres.*

If the proposed development involves the alteration, enlargement or extension of a BASIX affected building that contains more than one dwelling, a separate BASIX certificate is required for each dwelling concerned.

Further information about BASIX and to obtain a BASIX Certificate, go to http://www.basix.nsw.gov.au.

SECTION H. List of documents

Prepare and attach a list of all of the documents to be provided under SECTIONS E, F and G above and as may otherwise be advised as required.

SECTION I. Authority to enter and inspect land

A certifying authority must not issue a Modified Construction Certificate for development on a site which affects an existing building unless the certifying authority, or an accredited certifier, council or consent authority on behalf of the certifying authority, has carried out an inspection of the site of the development.

If the Applicant is the owner of the land, by signing this Application authority is given to the certifying authority, or an accredited certifier, council or consent authority, to enter the subject property at any reasonable time for the purpose of carrying out an inspection in connection with the assessment of this Application. The Applicant undertakes to take all necessary steps make access available to the property to enable the inspection to be carried out.

If the Applicant is not the owner of the land, the owner(s) must sign the following statement.

As the owner(s) of the above property, I/we consent to the certifying authority, or an accredited certifier, council or consent authority, to enter the subject property at any reasonable time for the purpose of carrying out an inspection in connection with the assessment of this Application. I/we undertake to take all necessary steps make access available to the property to enable the inspection to be carried out.

Owners Signature(s)

Name(s)

Jan Page, Graeme Page

Date

29.09.16

SECTION J. Delivery of the Application

Applications for construction certificates must be delivered by hand, by post or transmitted electronically to this office at:

- Suite 405, 51 Rawson Street, Epping NSW 2121; or
- PO Box 375, Strathfield NSW 2135; or
- info@boycecorp.com.au

Applications MAY NOT be sent by facsimile transmission.

SECTION K. Signature of Applicant(s)

Signature of Applicant(s)

Name(s)

~~Emma Trask~~

Date

~~29.09.16~~

SECTION L. Date of Receipt of Application

To be completed by the certifying authority **immediately** after receiving this Application.

This Application was received on 4 OCT 2016 (insert date).

SECTION M. Development statistics

Place a cross in each appropriate box.

	Walls	Code		Roof	Code		Floor	Code		Frame	Code
☐	Brick (double)	11	☐	Tiles	10	☐	Concrete/slate	20	☐	Timber	40
☐	Brick (veneer)	12	☐	Concrete/slate	20	☐	Timber	40	☐	Steel	60
☐	Concrete/stone	20	☐	Fibre cement	30	☐	Other	80	☐	Aluminium	70
☐	Fibre cement	30	☐	Steel	60	☐	Not specified	90	☐	Other	80
☐	Timber	40	☐	Aluminium	70				☐	Not specified	90
☐	Curtain glass	50	☐	Other	80						
☐	Steel	60	☐	Not specified	90						
☐	Aluminium cladding	70									
☐	Timber/ weatherboard	40									
☐	Other	80									
☐	Not specified	90									

Gross site area (m^2)		Number of dwellings to be demolished	
Gross floor area of existing building (m^2)		Number of dwellings to be constructed	
Gross floor area of new building work (m^2)		Will the new building be attached to an existing building	
Number of pre-existing dwellings on the site		Does the site contain a dual occupancy	
How many storeys will the building have			
What are the current uses of the building			
What will be the new building uses (if changed)			

Douglas Partners
Geotechnics I Environment I Groundwater

Douglas Partners Pty Ltd
ABN 75 053 980 117
www.douglaspartners.com.au
96 Hermitage Road
West Ryde NSW 2114
PO Box 472
West Ryde NSW 1685
Phone (02) 9809 0666
Fax (02) 9809 4095

Project 73665.01
29 February 2016
DEM:pc

Graeme and Jan Page
C/- Peter Stutchbury Architects
5/364 Barrenjoey Road
NEWPORT NSW 2106

Attention: Ms Emma Trask

Dear Emma

Section 96 Amendment – Septic Upgrade
88 Cabbage Tree Road, Bayview

Further to our previous report Project No. 73665.00 dated 25 October 2013, Douglas Partners Pty Ltd (DP) has been asked to comment on the geotechnical issues relating to a Section 96 amendment to the Development Application (DA No. 1015/14) for the above property.

The following design documents have been provided:

- Drawing 2013-P45/H02 - Site Stormwater and OSSM Plan (Issue 5 dated 15 February 2016) by JCL Development Solutions;
- Drawing DA 100 - Site Demolition Plan (Issue 2 dated 24 February 2016) by Peter Stutchbury Architects

The drawings indicate that the existing septic tank is to be removed and replaced by a buried dispersion and treatment system located diagonally upslope and south-east of the new residence.

In general, the proposed changes to the septic system are considered to be acceptable from a geotechnical perspective. All retaining structures located directly downslope of the new buried dispersion system however, should be founded on bedrock, and designed to resist potential soil creep and full hydrostatic pressures arising from saturation of the over-burden soils.

Note that construction inspections undertaken by DP to date have indicated that footing excavations for the new residence have been taken to and socketed into bedrock.

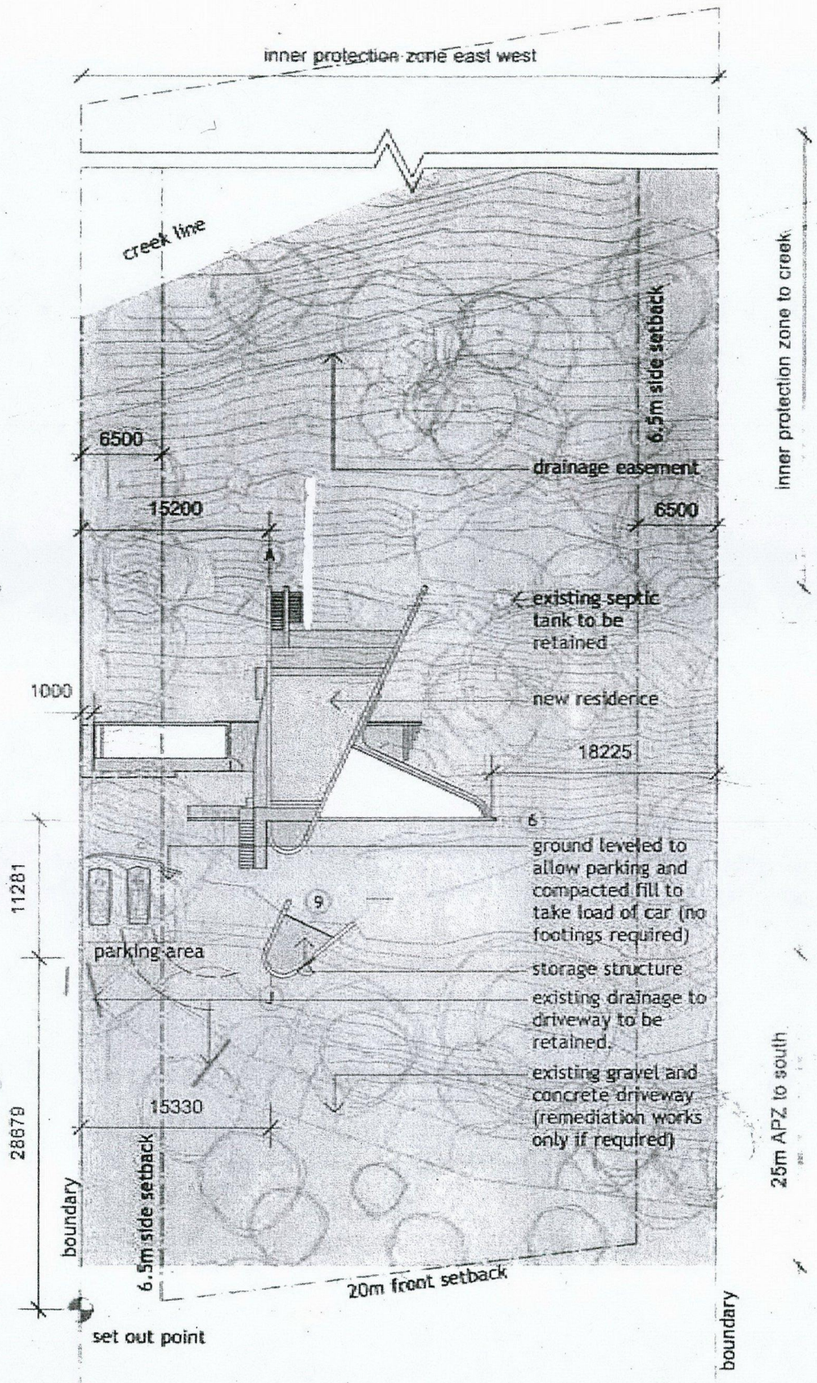
We trust that these comments are sufficient for your present requirements. If further assistance is required, please do not hesitate to contact the undersigned.

Yours faithfully
Douglas Partners Pty Ltd

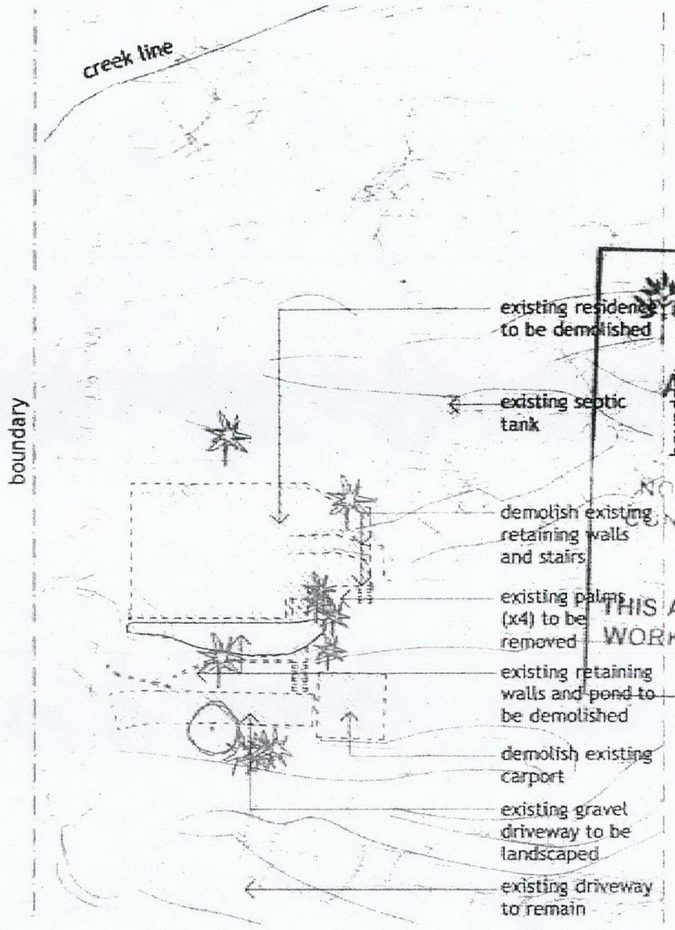
David Murray
Senior Associate

Reviewed by

Geoff Young
Principal



site plan
1:500



demolition plan
1:500

*refer landscape plan for detailed landscape design

PLOT DATE 15 Apr 2014
FILE NAME CT plans.vwx
DRAWING ISSUE
1 DA Submission 15.04.14

NOTES

LANDSCAPE

TREE TO BE DEMOLISHED

EXISTING TREE TO BE RETAINED

DEMOLITION

brk	brick - 110mm
dbrk	double brick (with cavity) - 270mm
cbwk	concrete blockwork - 190mm
conc	concrete
fg	fixed glazing
insc	insitu concrete - 200mm
	100mm concrete
	power trowel finish

Project
Cabbage Tree House

Proprietor
Jan & Graeme Page

Project Address
Lot B
DP 19161
88 Cabbage Tree Road
Bayview, NSW 2104

N

Architect

PETER STUTCHBURY ARCHITECTURE
5 / 364 Barrenjoey Road
Newport NSW 2107
p. 9979 5030
f. 9979 5367
e. admin@peterstutchbury.com.au

0 5 10 25m
Scale **1:500** @ A3

Drawing Name
SITE & DEMOLITION PLAN

Issue **1**
Drawing Number **DA 100**

Statement in relation to proposed modification to works at 88 Cabbage Tree Road.

DA: No. 1015/14

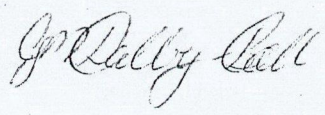
Statement of Authorship

This report and site inspection was undertaken by Geraldene Dalby-Ball or Ecological Consultants Australia whose qualifications are BSc. majoring in Ecology and Botany with over 20 years' experience in this field.

Limitations Statement

Information presented in this report is based on updated plans and site visit Feb 2016. .

Signed: Mia Dalby-Ball – Director of Ecological Consultants Australia



Proposed is a summary of the modification – for details see plans (Peter Stutchbury Architecture Feb 2016).

Septic Upgrade

The current development application states the new dwelling is to use the existing septic system. The modification to DA No 1015/14 is a proposal for upgrading the existing septic system.

The existing septic tank has been regularly inspected and is generally functional. However, during construction, the absorption trench was found to be compromised. Replacing the absorption trench/septic tank in its current location will not meet current code.

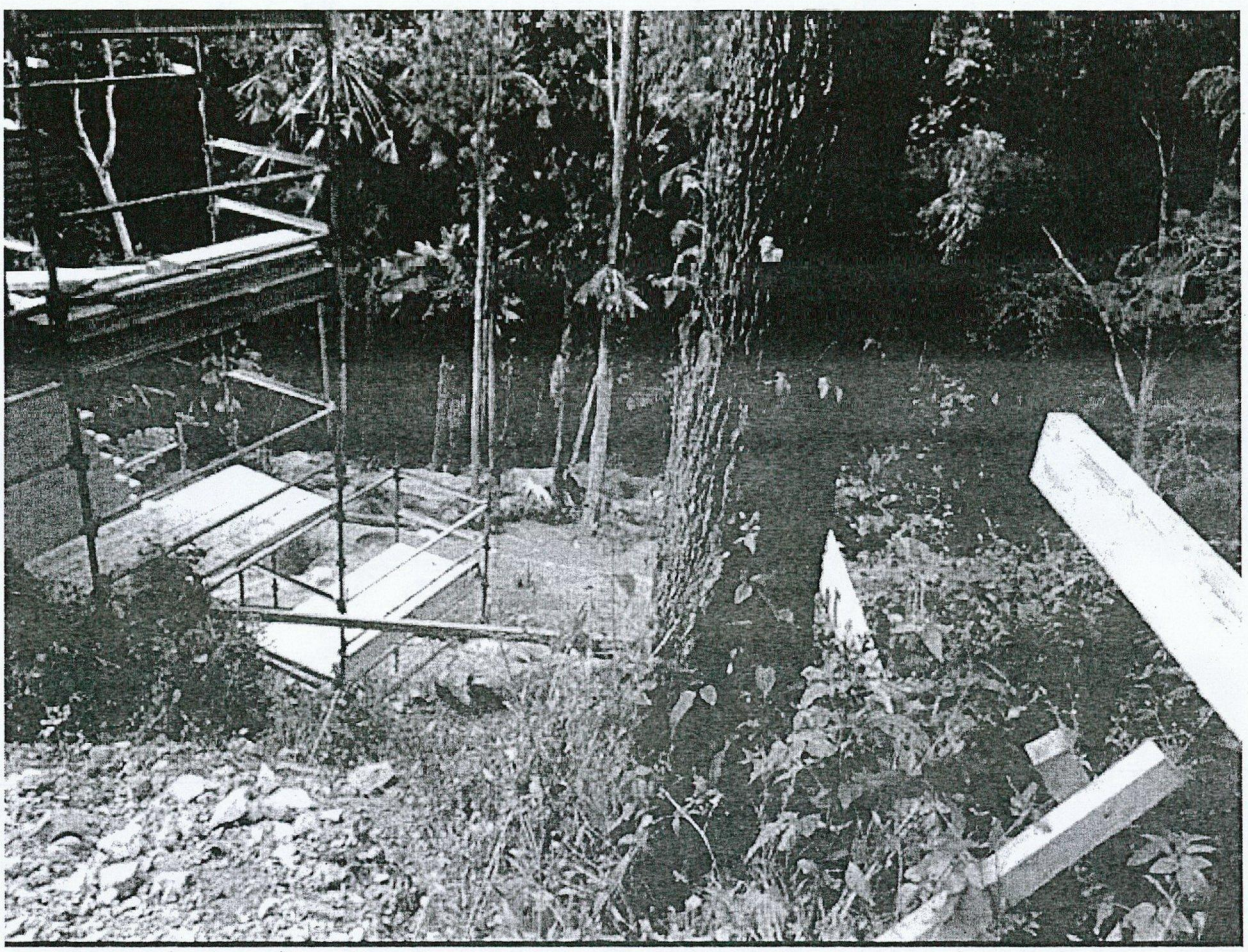
An upgrade to the septic system includes an advanced secondary wastewater treatment system and subsurface irrigation. This provides the following improvements over the current system:

- Cleaner effluent
- Long term sustainable solution for septic treatment
- Larger disposal area
- Treatment system compliant with current code
- Increased number of inspections
- Minimises any risk to flora and fauna
- Improved protection of creek due to location of disposal area
- New location minimises excavation (as within current building works site)
- New location provides easier access for maintenance/any tank failure
- Better views for neighbours (proposed system underground)

A site visit was made with applicants and Emma, Architect from Peter Stutchbury Architecture for this project.

Ecological matters were assessed and potential impacts on trees. It is noted the that this modification does not change the overall conclusions and recommendations of the original Ecology report written by myself. While there are no trees proposed for removal I note here that if the Forest Oak closets to the house had to be removed this would be acceptable from an environmental perspective. The tree is a male tree and thus not providing cones that are fed upon

by Glossy Black cockatoos. Additional Forest She-oaks are already being planted as part of this DA.



Forest Oak near the proposed Septic System.

If you have any questions please contact me

Mia Dalby-Ball

Director

Ecological Consultants Australia

Urban Waterways and Wetlands | Environmental Monitoring and Reporting | Environmental Training and Education

Head Office: Studio 1 - 30 Palmgrove Road Avalon Sydney 2107

NSW GOVERNMENT | Health

Certificate of Accreditation

Sewage Management Facility
Aerated Wastewater Treatment System

This Certificate of Accreditation is issued by the Secretary of the NSW Ministry of Health pursuant to Clause 41(1) of the Local Government (General) Regulation 2005.

System: ***Fuji Clean CE1500EX***

Manufacturer: ***Fuji Clean Australia Pty Ltd***

Of: ***16 Waterway Drive, Coomera, QLD, 4210***

The Fuji Clean CE1500EX AWTS as described in Schedule 1 has been accredited as a sewage management facility for use in single domestic premises in NSW. This accreditation is subject to the conditions of accreditation and permitted uses specified in Schedule 2.

Director, Environmental Health
for Secretary (delegation PH335)

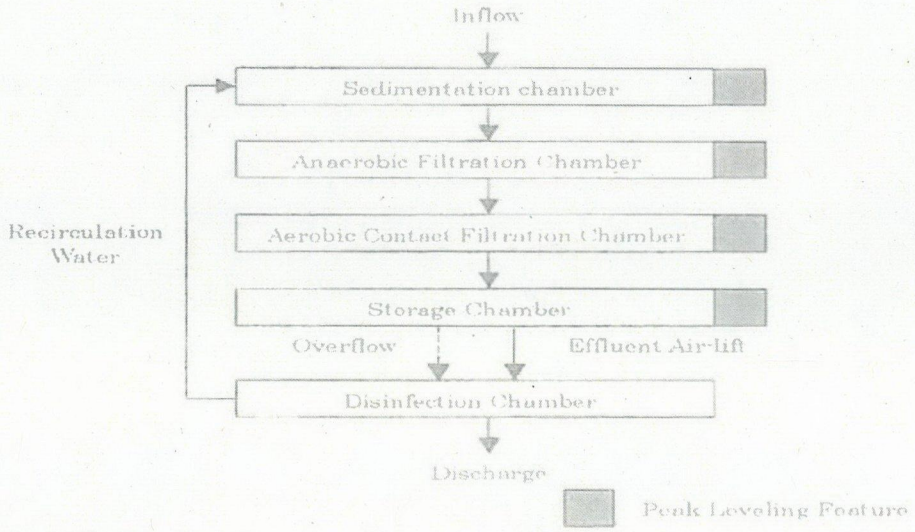
Issued: *23 December 2014*
Certificate No: *AWTS 033*
Expires: *31 December 2016*

Fuji Clean model CE1500EX AWTS

Schedule 1: Specification

Description of the Fuji Clean model CE1500EX system

The Fuji Clean model CE1500EX is designed to treat the wastewaters from a residential dwelling occupied by a maximum of 10 persons. The Fuji Clean model CE1500EX system is contained in a single horizontal axis type cylindrical fibreglass reinforced plastic septic tank/collection well with a design capacity of 4359 litres and manufactured by Fuji Clean Co Ltd. The treatment tank of the Fuji Clean model CE1500EX system contains the following components:



Primary Treatment

- Sedimentation Chamber – Effective volume of the chamber is 1114 litres. The chamber is designed to physically separate foreign material such as fat, grease or scum from the incoming wastewater.
- Anaerobic Filtration Chamber – Effective volume of the chamber is 982 litres. This chamber contains spherical-skeleton shaped filter media with packing ratio of 31-36% of the effective volume in the chamber. Micro-organisms grown on the surface of the filter media assist the biological anaerobic treatment process and capture suspended solids. At the same time denitrification of the nitrogen oxides in the wastewater occur during the treatment process. The gasses generated by the treatment are vented out of the system.

Secondary Treatment

- Aerobic Contact Filtration Chamber – Effective volume of the chamber is 580 litres. The upper section of the chamber is filled with board type filter media with packing of 14-17% of the effective volume in the chamber. The lower section is filled with hollow, mesh, cylindrical filter media with packing ratio of 52-57% of the effective volume of the chamber. Aeration is continuous over the whole of the media through the air diffusers located at the bottom of the chamber. Biological aeration treatment takes place with the assistance of micro-organisms in the wastewater and bacterial growth on the filter media. Solids are captured in the lower section of the chamber. Solids are returned to the sedimentation chamber at regular intervals.
- Storage Chamber – Effective volume of the chamber is 281 litres. The chamber is designed to temporarily store treated effluent that is processed in the contact filtration chamber.
- Disinfection chamber – Effective volume of the chamber is 308 litres. The treated effluent makes contact with the solid chlorine tablets stored in the polyethylene canister. Contact with the chlorine tablets can be controlled by adjusting the cylinder's opening area.
- Air is supplied to the aerobic contact filtration chamber by an aerator model MAC 80N with a nominal capacity of 80 litres/minute, manufactured by Fuji Clean Co Ltd.
- Disinfection/Emergency Storage Tank – This chamber is included in the main treatment tank and has an effective volume of 308 litres. The chamber provides for the storage of the final effluent prior to the discharge to the land application system. Part of the chamber is utilised to maximise the chlorine contact time. The upper part of the tank is set aside as an emergency storage space. A Davey model D25-A submersible pump or equivalent is provided in the storage tank to direct treated effluent to the land application system.

Schedule 2: Conditions of Accreditation

1.0 General

1.1 For each installation the owner/occupier of the premises shall make an application to the Local Authority to install a Fuji Clean model CE1500EX AWTS as a waste management facility in accordance with Section 68, Part C of the Local Government Act 1993 and Clause 26 of the Local Government (General) Regulation 2005.

1.2 The Fuji Clean model CE1500EX AWTS shall be supplied, constructed and installed in accordance with the design as submitted and accredited by the NSW Ministry of Health.

1.3 Any modification or variations to the accredited design of the Fuji Clean model CE1500EX AWTS shall be submitted for separate consideration and variation of the Certificate of Accreditation by the Secretary of the NSW Ministry of Health.

1.4 Each Fuji Clean model CE1500EX AWTS shall be permanently and legibly marked on a non-corrosive metal plaque or equivalent, attached to the lid with the following information:

- The brand name of the system;
- The manufacturer's name or registered trademark;
- The month and year of manufacture.

1.5 The manufacturer shall supply with each Fuji Clean model CE1500EX AWTS an owner's manual, which sets out the care, operation, and maintenance and on-going management requirements of the system.

1.6 The manufacturer shall provide the following information to each local authority where it is intended to install an AWTS in their area once Departmental accreditation has been obtained:

- Statement of warranty
- Statement of service life
- Quality Assurance Certification
- Installation Manual
- Service Manual
- Owner's Manual
- Service Report Form
- Engineering Drawings on A3 format
- Detailed Specifications
- A4 Plans
- Accreditation documentation from NSW Health.

2.0 Installation and Commissioning

2.1 The Council should require that on completion of the installation of the Fuji Clean model CE1500EX AWTS, the system is inspected and checked by the manufacturer or the manufacturer's agent. The manufacturer or the agent is to certify that the system has been installed and commissioned in accordance with its design, conditions of accreditation and any additional requirements of the Council.

2.2 The Council should require that all electrical work must be carried out by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.

3.0 Maintenance

3.1 The Council shall require the owner/occupier of a premises to enter into an annual service contract with a representative of Fuji Clean Australia Pty Ltd.

3.2 The Fuji Clean model CE1500EX AWTS shall be serviced at three monthly intervals in accordance with the details set out in the owner's and service manual.

3.3 Each three monthly service shall include a check on all mechanical, electrical and functioning parts of the system including:

- Pump and air blower,
- The control panel and alarm system,
- Slime growth on the filter media,
- Operation of the sludge return system,
- Sludge build up in the Sedimentation Chamber,
- Chlorine disinfection unit
- The effluent irrigation area,
- On-site testing for free residual chlorine and dissolved oxygen.

3.4 The Council should require that a service report sheet, in triplicate, is completed for each service. The original shall be given to the owner, the duplicate forwarded to the Council and the triplicate retained by the service contractor.

4.0 On-going Management

4.1 The owner's manual prepared by the manufacturer shall contain a plan for the on-going management of the Fuji Clean model CE1500EX AWTS. The plan shall include details of:

- the treatment process,
- procedures to be followed in the event of a system failure,
- emergency contact numbers,
- maintenance requirements,
- inspection and sampling procedures to be followed as part of the on-going monitoring program developed by the local authority.

4.2 At each anniversary of the accreditation date the manufacturer shall submit to NSW Ministry of Health a list of all Fuji Clean model CE1500EX AWTS installed in NSW during the previous twelve months. NSW Health will randomly select up to 10% of the installed Fuji Clean model CE1500EX AWTS from each year of installation. The manufacturer, at its own cost, shall arrange for the selected Fuji Clean model CE1500EX AWTS to be inspected and sampled. Sampling is to be organised by an independent JAS/ANZ accredited agency. Samples for BOD5, TSS, and Thermotolerant coliforms are to be determined by a NATA registered laboratory, and samples for disinfectant concentration, if applicable, are to be determined on site. The results are to be reported to NSW Ministry of Health by:

- address of premises,
- date inspected and sampled,
- sample identification number,
- BOD5,
- TSS,
- Thermotolerant coliforms,
- disinfectant concentration (if applicable), and
- service history (if available)

4.3 Effluent from the Fuji Clean model CE1500EX AWTS taken in any random grab sample shall comply with the following standard:

• BOD^5	less than 30 mg/L
• TSS	less than 45 mg/L
• Thermotolerant coliforms	less than 100 cfu/100 ml
• Free residual chlorine	greater than 0.2 and less than 2.0 mg/L, where chlorination is the disinfection process.

5.0 Permitted uses

5.1 The effluent is suitable for re-use for garden purposes by way of any of the forms of irrigation as described in AS/NZS 1547:2000:

- above ground spray irrigation; or
- surface drip irrigation covered by mulch; or
- sub-surface drip irrigation installed at around 100 mm depth.

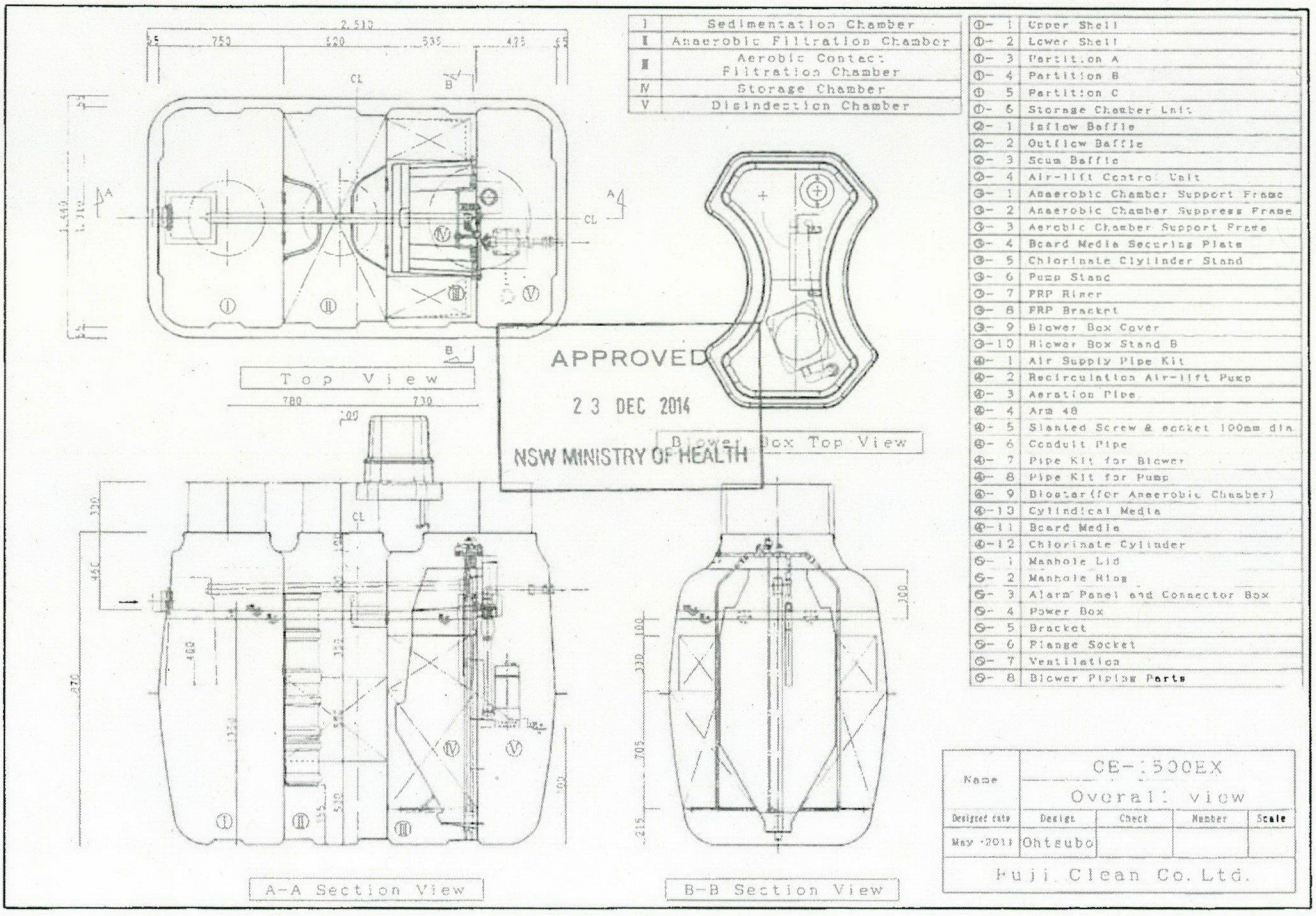
Each of the three forms of irrigation is subject to the approval of the Council.

6.0 Reduction in nutrient levels

During the testing of the Fuji Clean model CE1500EX AWTS the treated effluent was tested for total N (TN) and total P (TP) concentrations.

The treatment process has the capacity to reduce the above concentrations as follows:

- Total N from an average of 39.6 mg/l to 18.11 mg/l which represent a reduction by 54.3 %;
- Total P from an average of 10.89 mg/l to 1.33 mg/l which represent a reduction by 87.8 %.



I	Sedimentation Chamber
II	Anaerobic Filtration Chamber
III	Aerobic Contact Filtration Chamber
IV	Storage Chamber
V	Disinfection Chamber

①-	1	Upper Shell
①-	2	Lower Shell
①-	3	Partition A
①-	4	Partition B
①	5	Partition C
①-	6	Storage Chamber Unit
②-	1	Inflow Baffle
②-	2	Outflow Baffle
②-	3	Scum Baffle
②-	4	Air-lift Control Unit
③-	1	Anaerobic Chamber Support Frame
③-	2	Anaerobic Chamber Suppress Frame
③-	3	Aerobic Chamber Support Frame
③-	4	Board Media Securing Plate
③-	5	Chlorinate Clylinder Stand
③-	6	Pump Stand
③-	7	FRP Riser
③-	8	FRP Bracket
③-	9	Blower Box Cover
③-10		Blower Box Stand B
④-	1	Air Supply Pipe Kit
④-	2	Recirculation Air-lift Pump
④-	3	Aeration Pipe
④-	4	Arm 48
④-	5	Slanted Screw & socket 100mm dia
④-	6	Conduit Pipe
④-	7	Pipe Kit for Blower
④-	8	Pipe Kit for Pump
④-	9	Diostar(for Anaerobic Chamber)
④-10		Cylindical Media
④-11		Board Media
④-12		Chlorinate Cylinder
⑤-	1	Manhole Lid
⑤-	2	Manhole Ring
⑤-	3	Alarm Panel and Connector Box
⑤-	4	Power Box
⑤-	5	Bracket
⑤-	6	Plange Socket
⑤-	7	Ventilation
⑤-	8	Blower Piping Parts

Name	CE-1500EX			
	Overall view			
Designed date	Design	Check	Member	Scale
May -2011	Ohtsubo			
Fuji Clean Co. Ltd.				

BPAD
Bushfire
Planning & Design
Accredited Practitioner
Level 3

Bush Fire Planning Services

Member of the Fire Protection Association of Australia

Wednesday, 24 February 2016

- ***Purpose;*** Advice to support a section 96 application with regard to the bushfire aspect of previously issued conditions of consent.
- ***Address;*** *88 Cabbage Tree Road Bayview*
- ***Lot and DP number;*** *lot 8, DP 19161*
- ***Referenced documents;*** *Original bushfire risk assessment dated 5/3/2014, DA No105/14, revised plans supplied by Peter Stutchbury Architects.*
- ***Proposed works;*** *Replacement of septic tank.*

The General Manager, Pittwater Council

Dear Sir.

This letter is to provide support for the proposed section 96 application to Council for the alterations of the plans that were used in the original bushfire risk assessment for the subject lot.

The proposed new works are for the construction of a new septic.

It is my considered opinion as a person recognised by the New South Wales Rural Fire Service as a qualified consultant in Bushfire Risk Assessment that this revised proposal does not adversely affect the results of the original bushfire assessment and therefore alterations to the conditions of consent are not considered warranted.

Should any further clarification be necessary please do not hesitate to contact me.

Yours Sincerely

Matthew Willis
Grad Dip Planning for Bushfire Prone Areas ***(FPAA BPAD 3 BPD-PA 09337)***
Bushfire Planning Services Pty Limited.

STATEMENT/SCHEDULE OF MODIFICATION

88 Cabbage Tree Road

Septic Upgrade

The current development application states the new dwelling is to use the existing septic system. The modification to DA No 105/14 is a proposal for upgrading the existing septic system.

The existing septic tank has been regularly inspected and is generally functional. However, during construction, the absorption trench was found to be compromised. Replacing the absorption trench/septic tank in its current location will not meet current code.

An upgrade to the septic system includes an advanced secondary wastewater treatment system and subsurface irrigation. This provides the following improvements over the current system:

- Cleaner effluent
- Long term sustainable solution for septic treatment
- Larger disposal area
- Treatment system compliant with current code
- Increased number of inspections
- Minimises any risk to flora and fauna
- Improved protection of creek due to location of disposal area
- New location minimises excavation (as within current building works site)
- New location provides easier access for maintenance/any tank failure
- Better views for neighbours (proposed system underground)

Revision of Statement of Environmental Effects

The currently submitted Statement of Environmental Effects does not require revision as the only mention of sewage or septic refers to the Hydraulic Drawings and Report. The updated Hydraulic Drawing and Report have been included in this Section 96 Modification.

Revision of BASIX

This proposal does not affect the BASIX certificate.

Revision of finishes schedule

This proposal does not affect the finishes schedule.

Note: The installation of the septic tank upon approval is to be completed by Kerry Flanagan from Kerry Flanagan Wastewater, CET certified and license number 162101C/L10163. He is also a AWTS Inspection Provider.

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JCL DEVELOPMENT SOLUTIONS

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Ph: 02 44 742 401
02 44 744 104
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ABN 67 595 094 102

10th June 2014

Peter Stutchbury Architecture
5/364 Barrenjoey Road
NEWPORT NSW 2106

Attn: Emma Task Ward

RE: 88 CABBAGE TREE ROAD, BAYVIEW

JCL REF: 2013/P-45

ON-SITE SEWER MANAGEMENT REPORT – REVISION 2

1. Existing Residence & System

Currently the system includes a septic tank (approximately 2,500 litre capacity) which discharges to an absorption trench. This system is regularly inspected by a licensed plumber to certify performance (last inspected February 2014). These inspection reports confirm that the system is not indicating any failure of performance and continues to service the properties hydraulic loading. The existing residence is a three bedroom dwelling and is currently a rental property.

2. Proposed Dwelling

A new single bedroom dwelling is proposed to replace the existing 3 bedroom residence. Based on an assessed reduction in potential hydraulic loading of 450 litres per day it is proposed to maintain the existing system including the following works.

- Install a new sanitary drainage system extending from existing septic tank to all new fixtures.
- Check existing septic tank for potential leaks in the area of lid and discharge pipe and repair if required.
- Inspect the sludge level of tank and pump out if required.

3. Hydraulic Loading Analysis

- Existing 3 bedroom dwelling, reticulated water supply. From table H1-AS 1547:2012. Total 5 people @ 150 litres per day = 750^{L}/day.
- Proposed new single bedroom dwelling maintaining reticulated waters supply. From table H1-AS 1547:2012. Total 2 people @ 150 litres per day = 300^{L}/day.
- Total potential hydraulic loading reduction = 450^{L}/day.

- Proposed swimming pool operation statement.

All water associated with the swimming pool is to be contained within the pool zone including:

- Pool basin
- Pool balance tank
- Pool deck areas.

Pool maintenance filtration is to be based on installation of a re-usable cartridge filtration system. As this system includes filter elements that are contained in a sealed chamber and able to be removed for maintenance cleaning there is no backwash of pool proposed.

The advised maintenance regime of proposed cartridge filter system requires removal of cartridge filter element annually and washing of filter in a controlled environment (laundry trough). After soaking in a product similar to Napisan to loosen entrapped matter the filter is washed with clean water and returned to cartridge chamber.

This process allows the pool water environment to be maintained at an acceptable quality without the requirement for backwash of pool. Therefore there is no proposed additional hydraulic load from pool discharge to existing septic tank.

Report prepared by: James P. Olive
Accredited CET. OSSM Designer.

JCL DEVELOPMENT SOLUTIONS

ONSITE SEWERAGE MANAGEMENT SYSTEM ASSESSMENT

REPORT NO: 2013/P-45

NOTE: Report to be read in conjunction with plan set no. 2013/P-45-H02, H08

New Development System Upgrade ✓ Existing System	Date: 15-02-2016 Auditor James. P. Olive

PROPERTY DETAILS

PROPERTY ADDRESS:	Lot 8 DP 19161 88 Cabbage Tree Rd, BAYVIEW
Slope (%)	9% - 11%
Water Source	Town Water
Aspect (N, S, E, W)	South/East

CLIENT: Jan & Graham Page	
No. Bedrooms	2
Nearest House (m)	3
Rental Property	No

DISPOSAL AREA DETAILS

Type of Disposal Field Proposed	Sub-Surface Irrigation	Flood Potential	No
Duplicate Area Proposed	Available	Erosion Potential	Yes
Dimension of Disposal Field (m^2) Required	$300m^2$	Available Area for Wastewater Disposal	$400m^2$ APP

Condition of Disposal Field: Existing vegetation coverage grasses.

Vegetation Present: Native grasses.

Topography: Slopping block to North at 9% gradient, in area of proposed Sub-Surface Irrigation.

Site Drainage: Excellent Good ✓ Fair Poor

Comments: Existing soil profile and contour gradient provides adequate surface drainage with limitation on infiltration into soil profiles horizon C.

Distance of Disposal Area to (m):

Watercourse / Dam	55 downstream	Swimming Pool	Nil
Bushland	3 m	Impervious Surfaces	3.0m
Property Boundary	3 m	Building	3.0m
Easements	Nil	Prescribed Waters	55m

SOIL SURVEY

Note: Geotechnical Report no 73665 classifies the site soil as clayey sand soil under laid with Hawkesbury sandstone.

Soil Analysis	T1			T2-Not used		
Horizons	A1	B1	B2	C		
Depth (mm)	30	50	120	>900		
Colour	Hue 4/6 ST/BR		Hue 4/6 ST/BR	Hue 5/6 BR		
Texture	Sandy Clay Loam		Light Sandy Clays	Medium Sandy Clays		
Structure	Moderate		Strongly	Strongly		
PH/EC	5.6/0.9		5.6/0.09	5.3/0.81		
Ksat Value	1.5m/day		0.45m/day	0.06m/day		

Depth to water table ✓ > 0.6m < 0.6m

Soil Surface drainage

Comments: Infiltration rates through A1→B1medium B1→B2 medium low B2→C low.

GENERAL COMMENTS

Are there any specific constraints with the system specified? No, the disposal of treated effluent into the B1-B2 soil horizon will provide adequate long term performance including absorption into the existing sandy clay soil profile below.

Are there any specific constraints with the land application area nominated? No, due to the proposed discharge of second quality effluent into existing site soils.

ON SITE SEWERAGE MANAGEMENT ASSESSMENT

SUMMARY REPORT

CRITERIA	RATING	JUSTIFICATION
Impact on Public Health	1	Due to proposed level of waste treatment and effluent disposal control. Note: All set back distances as per AS 1547: 2012 Table R1.
Impact on Water Quality	1	Due to level of treatment and separation distances with significant water bodies. Note: Based on Table R2 of AS 1547: 2012 For lower constraint factor
Impact on Native Bushland	1	Due to level of treatment for nutrient production Within the Fugi Clean AWTS. Total N: 18.11 mg/L Total P : 1.33 mg/L
Impact on Community Amenity	1	Due to proposal level of treatment and controlled disposal.
Impact on Soils	1	Due to proposed level of waste water treatment and Disposal process. BOD^5 less than 30 mg/L TSS less than 45 mg/L

RATING CODE
1 Unlikely Impact
2 Potential Impact
3 Definite Impact

OVERALL RISK ASSESSMENT Unlikely impact.

RECOMMENDATIONS

SITE CONDITIONS:
Proposed disposal site provides sandy clay loam to sandy clay's soil suitable for
development of sub-surface irrigation, the existing soil profile is described as follows.
- Bulk Density - 1,580kg/m^3
- P.H A1 – B1 = 5.6
B2 = 0.4
C = 0.05
- ECe A1–B1–B2 1.17 nil salinity
- PPT – 0.01 mg/litre
- Sodicity A1, B1 – non sodic – zone of illfiltration
B2 – Non Sodic – zone of illfiltration
C – Sodic
- EAT Class 5/6 non dispersive.
- Ksat A1-B1 1.5m/day
B2 0.45m/day
C 0.06m/day
- $CACO_3$ nil
- Humus through profile – low to medium
- Phosphorus sorption isotherm 0.65 kg/m^3
- D.I.R 4mm/day based on Adopted light clay loading.
HYDRAULIC LOADING:
System performance based on 2 bedroom dwelling for a total of 4 people
with use of full water reduction fixtures as per table H3 of AS 1547 – 2012.
Flow 600^L/day. *Disposal via sub-surface irrigation required a total of 150m^2. Due to water balance influence, i.e. rainfall data, the minimum area of irrigation*
is to be 300m^2.

NUTRIENT LOADING:
1. Nitrogen levels reduce to 18.11 mg/L with AWTS.
Total nitrogen 10,866mg/day requiring 435m^2 uptake zone. Based on a critical
loading rate of 25mg/^{2}. This uptake is achieved across the sub-surface irrigation zone and down slope terrace.
2. Phosphorus levels to be reduced to 1.33mg/L from AWTS unit. Area
required based on 50 year loading of 14.56kg at 0.65 kg/m^3 isotherm = 22.4m^2.
This area is available below the disposal zone in sub-surface zone.
Note: See attached water balance sheet.
PROPOSED TREATMENT SYSTEM:
A system including a Fugi Clean model CE 1500EX AWTS unit with discharge of treated effluent to a sub-surface irrigation of 300m^2 is proposed.
The sub-surface irrigation system is to be a drip line with pressure compensating
Drip emits typically 4-0^L per minute. The system is to include the following
Components:
- DISC Filter
- Supply Header
- Air/Vacuum pressure valves at system high points
- Flush valve with return link to AWTS waste inlet line.
- Drip Emitter lines typically spaced at 1.0m intervals at 100mm depth in loam top soil.

OSSM Water Balance

Project: Lot 8 DP 19161 NO 88 Cabbage Tree Road
Project No: Bayview 2013/P45
Date: 14/02/2016
Type One

Water Balance No. 1 - 2 Bedroom

Wastewater Design Flow	Q	L/day	600
Design Loading Rate	R	mm/wk	28
Land Irrigation Area	L	Sq m	300

Note:Persipitation from B.O.M. 066141 Mona Vale. Evapotranspiration from Riverside Observatory 066131

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Day In Month	D		Days	31	28	31	30	31	30	31	31	30	31	30	31	
Precipitation	P		mm/mth	88.2	106.4	88.4	91.7	81.7	99.2	50.8	48.8	45.2	54.1	67.0	58.0	879.5
Evaporation	E		mm/mth	186.0	142.8	120.9	90.0	68.2	57.0	62.0	86.8	114.0	145.7	159.0	182.9	1415.3
Crop Factor	C			0.8	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.7	0.8	0.8	0.8	
Inputs																
Precipitation	P			88.20	106.40	88.40	91.70	81.70	99.20	50.80	48.80	45.20	54.10	67.00	58.00	879.50
Applied Effulent	W	(QXD)/L		62	56	62	60.00	62.00	60.00	62.00	62.00	60.00	62.00	60.00	62	730.0
Inputs		P+W		*150.20*	*162.40*	*150.40*	*151.70*	*143.70*	*159.20*	*112.80*	*110.80*	*105.20*	*116.10*	*127.00*	*120.00*	*1609.50*
Outputs																
Evapotranspiration	ET	E X C		***148.80***	***114.24***	***96.72***	***72.00***	***47.74***	***34.20***	***37.20***	***52.08***	***79.80***	***116.56***	***127.20***	***146.32***	976.80
Percolation	B	R/7XD		124.00	112.00	124.00	120.00	124.00	120.00	124.00	124.00	120.00	124.00	120.00	124.00	1460.00
Outputs		ET +B		*272.80*	*226.24*	*220.72*	*192.00*	*171.74*	*154.20*	*161.20*	*176.08*	*199.80*	*240.56*	*247.20*	*270.32*	*2436.80*
Inputs minus Outputs Ignore Negative Results	S	P+W-ET+B		***-122.60***	***-63.84***	***-70.32***	***-40.30***	***-28.04***	***5.00***	***-48.40***	***-65.28***	***-94.60***	***-124.46***	***-120.20***	***-150.32***	***-827.30***
Cumulative Storage	M	Input	mm	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage	V	Largest - M	mm	5												
Storage Required		VxL/1000	Cubic m	1.5 Based on the conservative DIR the maximum storage of 5mm per m2 for June in soil profile is considered exceplable.												

88 CABBAGE TREE ROAD, BAYVIEW
SITE STORMWATER MANAGEMENT

LEGEND:

SW	STORMWATER
RW	RAIN WATER
SS	SUB- SOIL DRAINAGE
	SWALE DRAIN

DP	DOWNPIPE
L/s	LITRES PER SECOND
P.S.D	PERMISSIBLE SITE DISCHARGE
CAT.	CATCHMENT
RL.	SURFACE/REAL LEVEL
O.S.D	ON SITE DETENTION
O/F	OVERFLOW
IV.L	INVERT LEVEL
S.I.P	STORMWATER INLET PIT
C.O	CLEAR OUT
F.F.D	FIRST FLUSH DEVICE
G.D	GRATED DRAIN
O/P	OVERLAND FLOW PATH
W.T	WATER TANK
H/L	HIGH LEVEL

H0 — CONTINUES ON PLAN H0

O/P — OVERLAND FLOW PATH

RISER
SERVICE
SIZE
DROPPER

AUTHORITY

- PITTWATER COUNCIL
- NSW WORKCOVER

INSTALLATION STANDARDS AND CODES:

- PLUMBING CODE OF AUSTRALIA
- AS3500.1, AS3500.2, AS3500.3, AS3500.4 - 2003
- PITT WATER COUNCIL 21 DCP PART B AND APPENDIX 11

STORMWATER MANAGEMENT DESIGN AND SITE HYDROLOGY

DESIGN IS BASED ON COMPLIANCE WITH P21 DCP PARTS
- B 5.6 RAINWATER TANKS
- B 5.7 O.S.D
- B 5.8 WATER QUALITY

DESIGN STORM EVENT
- 1 IN 20 YR IFD = 204mm/hr FOR PIT AND PIPE SYSTEM
- 1 IN 100 YR IFD = 262mm/hr FOR OVERLAND FLOW AND O.S.D

THE PROJECT INCLUDES A RE-BUILD OF AN EXISTING 3 BEDROOM DWELLING TO BE REPLACED WITH A 1 BEDROOM DWELLING
- EXISTING IMPERVIOUS AREA = 183m^2
- NEW IMPERVIOUS AREA = 251m^2 APP.
- TOTAL INCREASE = 68m^2

CATCHMENT AREAS
CAT. 1 = 53m^2, CARPARK
CAT. 2 = 23m^2, PAVEMENT
CAT. 3 = 45m^2, ROOF ZONE DRAINAGE TO WATER TANK No.1
CAT. 4 = 29m^2, ROOF ZONE DRAINAGE TO WATER TANK No.1
CAT. 5 = 42m^2, ROOF ZONE DRAINING TO WATER TANK No.1 VIA O.S.D No.1

TOTAL AREA 192m^2 COLLECTED INTO WATER TANK No.1.
NOTE: WATER TANK No.1 TO PROVIDE MINIMUM 3.7m^3
O.S.D VOLUME IN TOP SECTION OF TANK

BALANCE OF INCREASED IMPERVIOUS AREA, 59m^2, DISCHARGE AS SHEET FLOW TO PERVIOUS ZONES.

B.5.7 TABLE DETERMINES THAT A MINIMUM O.S.D CAPACITY OF 6000 LITRES IS REQUIRED.
THIS IS PROVIDED AS FOLLOWS.
- O.S.D No.1 CAPACITY IS 2.3m^3, DISCHARGE FROM CAT. No.5
- O.S.D No.2 CAPACITY IS 3.7m^3, DISCHARGE FROM CAT. No.3 AND No.4

TOTAL ROOF AREA DRAINING TO RE-USE WATER VOLUME STORED IN WATER TANK No.1.
- CAT. 3 = 11.7m^2
- CAT. 4 = 29.0m^2
- CAT. 5 = 42.0m^2

TOTAL ROOF AREA HARVESTED TO WATER TANKS 82.7m^2

WATER VOLUME OF WATER STORED FOR RE-USE
- W.T No.1 = 10,000 LESS 3700 TO O.S.D
6300 LITRES

FINAL OUTFALL OF STORMWATER FROM SITE CATCHMENT IS CONTROLLED IN A 5.0m LONG SHEET FLOW CONVERTER TRANSFORMING A CONCENTRATED FLOW OF 12.4L/s INTO A NON-CONCENTRATED SHEET FLOW. OUTFALL FROM SWALE DRAIN No.1 DISCHARGE TO AN EROSION CONTROL DEVICE TO CONVERT FLOWS TO NON-CONCENTRATED TYPES.
BOTH OUTFALL POINT DISCHARGE TO A GRASS ZONE FOR CONTROL OF SEDIMENTS AND NUTRIENTS. TERMINATION POINT IS A MINIMUM OF 20m FROM EXISTING CREEK LINE.
DEVELOPMENT CONSENT CONDITIONS 37, 39, 40 AND 41 ARE COMPLIED WITH AS THE BUILDINGS LOWEST FLOOR LEVEL IS A MINIMUM OF 15.5m ABOVE THE FLOOD PLANNING LEVEL.

FLOOD RISK ASSESSMENT

PITTWATER FLOOD MAPPING CURRENTLY IS NOT INDICATING A FLOOD RISK AT THIS PROPERTY. AS THE PROPERTY IS LOCATED IN THE UPPER CATCHMENT OF THE CREEK THAT EXTENDS THROUGH THE LOWER GOLF COURSE THE RISK OF POTENTIAL FLOOD RISK HAS BEEN ASSESSED. THE CATCHMENT ABOVE THE PROPERTY EXTENDS TO THE WEST TO MINKARA ROAD AND INCLUDES A TOTAL URBAN AREA OF 4ha. BASED ON URBAN RUNOFF FACTOR OF 0.65 COE A TYPICAL FLOW AT CREEK LINE ADJACENT BUILDING IS 1.89m^3/s AT A MAXIMUM DEPTH IN EXISTING CREEK FORM OF 1.5m APP.
SURFACE LEVEL OF THE EXISTING CREEK VARIES ACROSS THE SITE FROM RL. 18.00 AT THE EASTERN BOUNDARY TO RL. 19.10 AT THE WESTERN BOUNDARY. THE MAXIMUM 1% EVENT FLOOD LEVEL IS RL. 20.60 AT THE WESTERN BOUNDARY. THEREFORE THE SITE FLOOD PLANNING LEVEL IS RL. 20.60. AS THE DIFFERENTIAL IN HEIGHT BETWEEN EXISTING CREEK LINES FLOOD PLANNING LEVEL AND BUILDING FOOTPRINT BASED ON A LOWER FLOOR LEVEL OF 35.60. IS A MINIMUM OF 15.5m, NO FLOOD RISK POTENTIAL EXISTS.
DEVELOPMENT CONSENT CONDITIONS 37, 39, 40 AND 41 ARE COMPLIED WITH AS THE BUILDINGS LOWEST FLOOR LEVEL IS A MINIMUM OF 15.5m ABOVE THE FLOOD PLANNING LEVEL.

21/10/16
JAMES . P . OLIVE HYD ENG.

PLAN SCHEDULE

Peter J Boyce & Associates
Ph: 0412 928 500
This PLAN/DOCUMENT forms part of the approval granted under Construction Cert No. CPS1441(M)
And all work must be carried out in accordance with the Building Code of Australia 2007 and subsequent amendments
Accredited Building Surveyor BS12 No. 0013

Issue:	Description:	Date:
4	FLOOD PLANNING LEVEL CLARIFICATION	21/10/16
3	WATER TANK No.2 DELETED	08/05/15
2	FOR CONSTRUCTION	15/04/15
1	CONSTRUCTION CERTIFICATE	23/03/15

Project: 88 CABBAGE TREE ROAD, BAYVIEW
Drawing Title: TITLE PAGE AND LEGEND
Date: 21/10/16 | Scale: N/A A1 | Plan No. 1/6
Drawn By: L.OLIVE | Design By: J.OLIVE | Checked By: .....
Drawing No. 2013-P45/H01
Issued For: CONSTRUCTION 4

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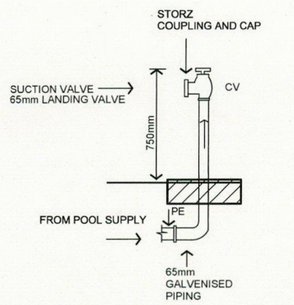
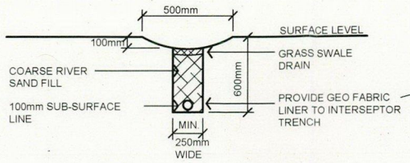
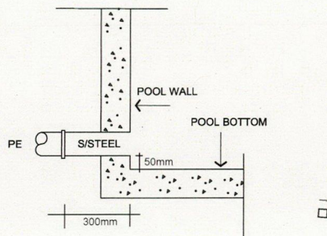


RURAL FIRE SERVICE STATIC WATER SUPPLY SUCTION POINT TYPICAL DETAIL



TYPICAL GRASS SWALE DRAIN AND SUB-SOIL COLLECTION TRENCH



POOL SUCTION POINT DETAL

SHEET FLOW CONVERTER. SEE DETAIL

30.0m TOTAL HEIGHT DIFFERENTIAL BETWEEN CREEK LINE BANK AND BUILDING. 15.5m

8
D.P. 19161
SITE AREA
2.023ha

ASSUMED LOCATION OF EXISTING ABSORPTION TRENCH

EXISTING WATER TANK TO BE MADE REDUNDANT SEE REPORT 2013-P45

5.0m
SW 150
5.0m
H05
1.5mtr MIN
DISK FILTER
CONNECT ALL WASTE DISCHARGE FIXTURES TO A.W.T.S
FUGI CLEAN CE 1500 EX
FINAL LOCATION TO BE COORDINATED WITH SITE ARCHITECT
100
25mm DIA EFFLUENT IRRIGATION LOADING LINE AND RETURN FLUSH LINE
PIPE:
PE 80-100
PN 12.5
LINE FROM POOL TO VALVE POSITION, INGROUND, DN90, VALVE RISER TO ASSEMBLY 65mm GALVENISED PIPE
FIRE PUMP AND STATIC WATER SUPPLY STANDPIPE
H05
2.0L/s
H05
INGROUND WT
3.0mtr MIN
FLUSH VALVE
EROSION CONTROL OUTLET
4.0mtr MIN
RETURN HEADER
RETURN HEADER
1mTYPICAL LINE SPACING
TI SOIL ANALYSIS ZONE
3.0mtr MIN
EFFLUENT DISPOSAL ZONE 300m2
3.0mtr MIN
DRIP LINES WITH PRESSURE COMPENSATING DRIP EMITTERS
AIR/VACUUM RELEASE VALVE
SUPPLY HEADER
SUPPLY HEADER
AIR/VACUUM RELEASE VALVE
SURFACE/SUB-SURFACE WATER FLOW DIVERSION REFER TO DETAIL
G.D No.1
RL. 43.0 (APP.)
IV.L 42.25
GRAVEL
DRIVEWAY

NEW SITE PLAN

INCLUDING ROOF, PAVEMENT AND PARKING CATCHMENT AREAS

8
D.P. 19161
SITE AREA
2.023ha

EXISTING SEPTIC TANK
TIMBER DECK RL 40.19
EXISTING RESIDENCE TO BE DEMOLISHED
TIMBER DECK RL 40.19
EXISTING BUILDING 154m²
EXISTING POND TO BE DEMOLISHED
EXISTING CARPORT TO BE DEMOLISHED
EXISTING ROOF 29m²
CONCRETE
EXISTING GRAVEL DRIVEWAY TO BE LANDSCAPED
LAWN
GRAVEL
DRIVEWAY
CONCRETE

DEMOLITION PLAN

Peter J Boyce & Associates
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This PLAN/DOCUMENT forms part of the approval granted under Construction Cert No. BP15149(1)
And all work must be carried out in accordance with the Building Code of Australia 2007 and subsequent amendments
Accredited Building Surveyor No. 0043

Quality System Implemented
ISO. 9091
Lic No. 221

Issue:	Description:	Date:
5	ADDITION OF O.S.S.M LAYOUT	15/02/16
4	FIRE PUMP LINE & DETAIL ADDED	12/02/16
3	REVISED POOL AREA LAYOUT	27/07/15
2	FOR CONSTRUCTION	15/04/15
1	CONSTRUCTION CERTIFICATE	23/03/15

Project: 88 CABBAGE TREE ROAD, BAYVIEW
Drawing Title: SITE PLAN STORMWATER AND O.S.S.M. FIRE PUMP SUCTION LINE
Date: 15/02/16
Scale: 1:150 A1
Plan No. 2/6
Drawn By: MB
Design By: J.OLIVE
Checked By: .....
Drawing No. 2013-P45/H02
Issued For: CONSTRUCTION 5

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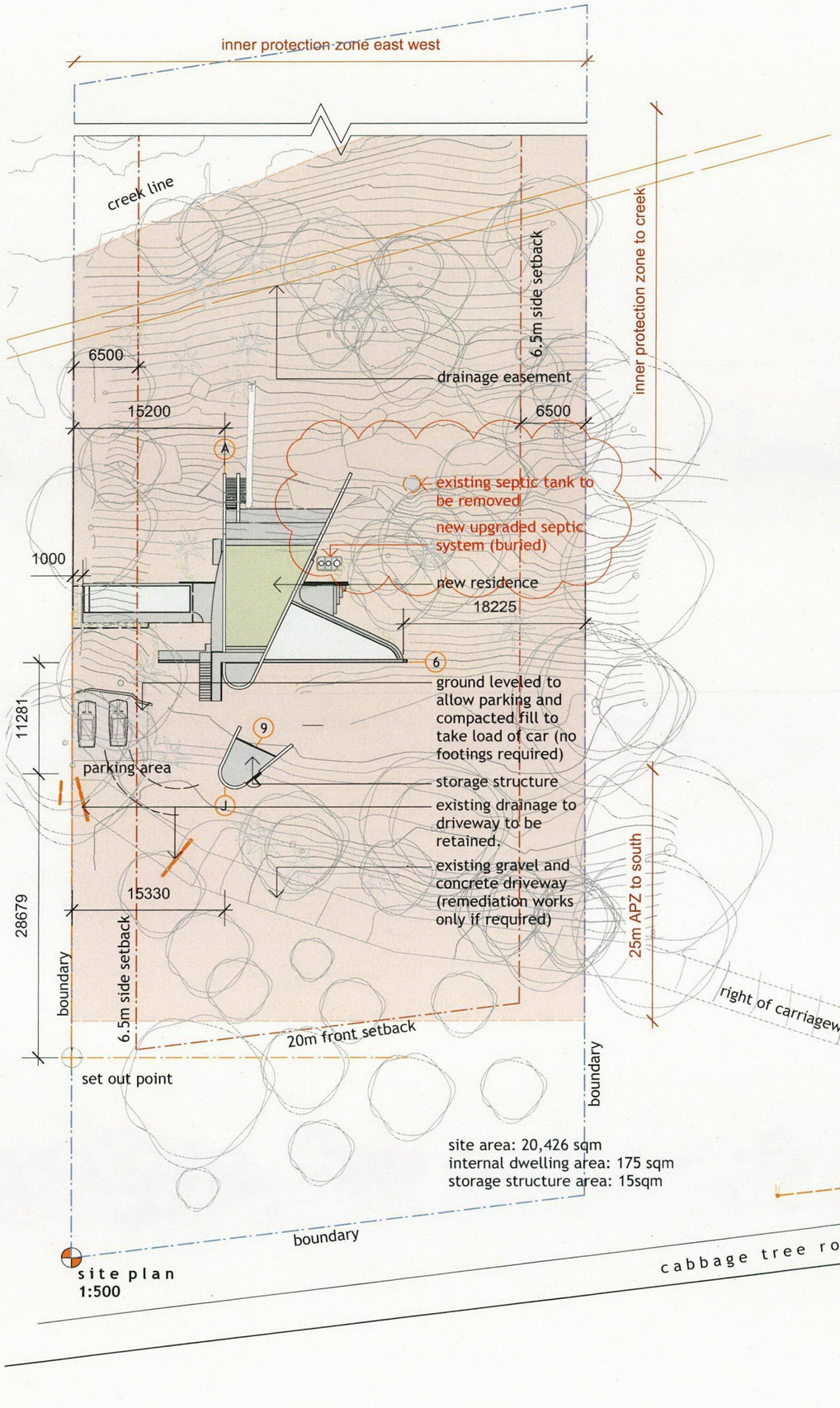
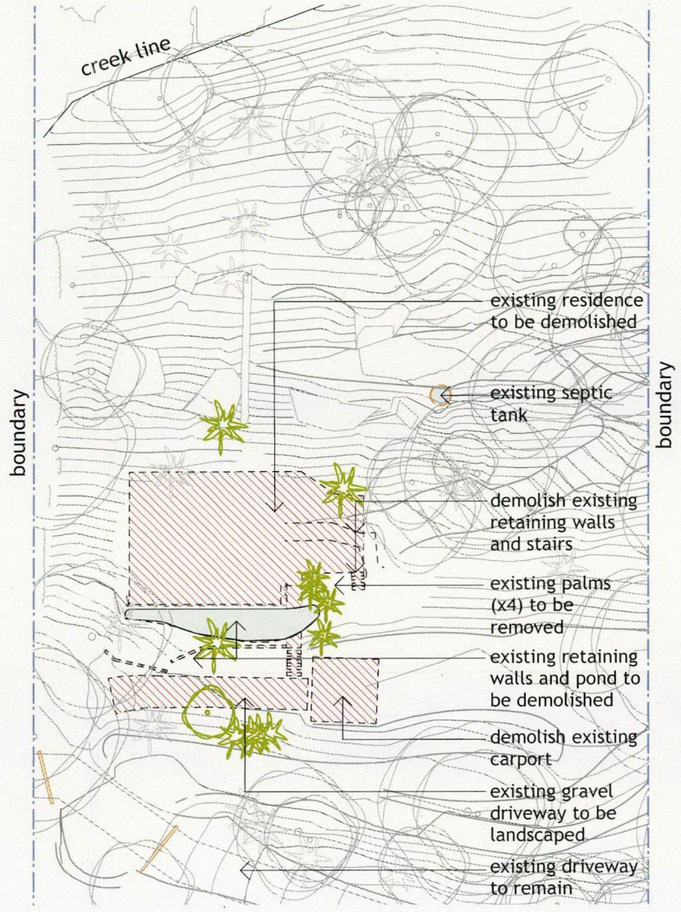


site plan
1:500



demolition plan
1:500

*refer landscape plan for detailed landscape design

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Construction Cert No. CC/2015/149(A)
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Accredited Building Surveyor BSB No. 9043

PLOT DATE	29 Sep, 2016	
FILE NAME	CT plans .vwx	
DRAWING ISSUE		
1	DA Submission	15.04.14
2	Section 96	24.02.16
3	CC Modification	29.09.16

NOTES

LANDSCAPE

TREE TO BE DEMOLISHED

EXISTING TREE TO BE RETAINED

BUSHFIRE PROTECTION ZONE

SITE WORKS

DEMOLITION

MATERIALS & FINISHES (thickness)

brk	brick - 110mm
dbrk	double brick (with cavity) - 270mm
cbwk	concrete blockwork - 190mm
conc	concrete
fg	fixed glazing
insc	insitu concrete - 200mm
ofc	off form concrete
stf	steel trowel finish

Project
Cabbage Tree House

Proprietor
Jan & Graeme Page

Project Address
Lot 8
DP 19161
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Bayview, NSW 2104

N

Architect
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0 5 10 25m
Scale **1:500** @ A3

Drawing Name
SITE & DEMOLITION PLAN

Issue **3**
Drawing Number **CC 100**