

ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

DETERMINATION OF MAJOR PROJECT NO. MP 06_0002

(FILE NO. 9041497-5)

PROPOSED 42 LOT RESIDENTIAL SUBDIVISION

I, the Minister for Planning, having considered the following, pursuant to Part 3A of the *Environmental Planning & Assessment Act, 1979*, Section 75J Clause (2) determine the major project referred to in the attached Director-General's Environmental Assessment Report, by **granting approval** to the major project referred to in the attached Schedule 1 subject to the conditions of approval in the attached Schedule 2.

This approval applies to the plans, drawings and documents cited by the Proponent in their Environmental Assessment and the Proponent's Statement of Commitments in Schedule 3, subject to the conditions of approval in the attached Schedule 2.



Frank Sartor MP
Minister for Planning

Sydney,

23rd Aug 2007

SCHEDULE 1**PART A—TABLE**

Application made by:	SAKE Development Suite 11 340 Darling St Balmain NSW 2041
Application made to:	Minister for Planning
Major Project Application:	MP 06_0002
On land comprising:	Lot 2 DP 622475 1 Survey St, Lennox Head
Local Government Area	Ballina Shire LGA
For the carrying out of:	A 42 lot subdivision comprising 39 residential lots, one residual lot for open space dedication and two residual lots for vegetation conservation.
Estimated Cost of Works	\$ 3.15 M
Type of development:	Project Application
S.119 Public Inquiry held:	No
Determination made on:	
Date approval is liable to lapse:	5 years from the date of determination unless works have physically commenced in accordance with Section 75Y of the Act.

PART B—NOTES RELATING TO THE DETERMINATION OF MP NO. 06_0002***Responsibility for other consents / agreements***

The Proponent is solely responsible for ensuring that all additional consents and agreements are obtained from other authorities, as relevant.

Appeals

The Proponent has the right to appeal to the Land and Environment Court in the manner set out in the *Environmental Planning and Assessment Act, 1979* and the *Environmental Planning and Assessment Regulation, 2000* (as amended).

Appeals—Third Party

A third party right to appeal to this approval in the manner set out in the *Environmental Planning and Assessment Act, 1979* and the *Environmental Planning and Assessment Regulation, 2000* (as amended).

Legal notices

Any advice or notice to the approval authority shall be served on the Director-General.

PART C—DEFINITIONS

In this consent,

Act means the *Environmental Planning and Assessment Act, 1979* (as amended).

Advisory Notes means advisory information relating to the approved development but do not form a part of this approval.

Council means Ballina Shire Council.

CPI means Consumer Price Index.

Department means the Department of Planning or its successors.

Director-General means the Director-General of the Department.

Environmental Assessment means the Environmental Assessment prepared by SAKE Development dated September 2006

Minister means the Minister for Planning.

MP No. 06_0002 means the Major Project described in the Proponent's Environmental Assessment.

PCA means a Principal Certifying Authority and has the same meaning as Part 4A of the Act.

Proponent means SAKE Development or any party acting upon this approval.

Regulation means the *Environmental Planning and Assessment Regulation, 2000* (as amended).

Subject Site has the same meaning as the land identified in Part A of this schedule.

SCHEDULE 2**CONDITIONS OF APPROVAL****MAJOR PROJECT NO. MP06_0002****PART A—ADMINISTRATIVE AND GENERAL CONDITIONS****A1 Development Description**

Development consent is granted only to carrying out the development described in detail below:

- (1) A 42 lot Torrens title subdivision comprising 39 residential lots, one residual lot for open space dedication and two residual lots for vegetation conservation; and
- (2) Construction of roads, infrastructure and servicing requirements.

A2 Development in Accordance with Plans

The development shall be in accordance with the plans and associated documentation lodged by or, on behalf of, the applicant including plans and documentation prepared by SAKE Development, including the Draft Statement of Commitments and draft site specific Development Control Plan and in accordance with the following:

Environmental Assessment entitled Coastal Grove prepared by SAKE Development dated September 2006			
Subdivision Drawings prepared by HASSELL			
Drawing No.	Revision	Name of Plan	Date
PSL 3394 / PA02	E	Subdivision Plan	20/06/07
Stormwater Drawing prepared by Patterson Britton & Partners Pty Ltd			
Drawing No.	Revision	Name of Plan	Date
-	-	Coastal Grove - Revised Conceptual Stormwater Management Strategy	6/07/07
Landscape Drawings prepared by HASSELL			
Drawing No.	Revision	Name of Plan	Date
PSL 3394 / PA 03	D	Landscape Plan	6/07/07
Survey Drawings prepared by Aspect North Limited			
Drawing No.	Revision	Name of Plan	Date
BA050026-SV4	B	Detail Survey Over Lot 2 DP 622475 Coast Road, Lennox Head	10/08/06

A3 Development in Accordance with Documents

The development will be undertaken in accordance with the following documents:

- a) Coastal Grove, Volume 1 – Environmental Assessment, prepared by MG Planning Pty Ltd and dated September 2006;

- b) Coastal Grove, Lennox Head – Draft Development Control Plan, prepared by MG Planning Pty Ltd and dated September 2006;
- c) Coastal Grove, Lennox Head Infrastructure Strategy, prepared by Patterson Britton and dated September 2006;
- d) *“Coastal Grove” Proposed Residential Subdivision – Assessment of Traffic and Parking Implications, prepared by Transport and Traffic Planning Associates dated September 2006;*
- e) *Coastal Grove, Lennox Head – Water Cycle Management (Issue No. 2), prepared by Patterson Britton and dated September 2006;*
- f) *Coastal Grove, Residential Development – Flora and Fauna Report, prepared by Peter Parker and dated September 2006*
- g) *Coastal Grove, Lennox Head – Construction Environmental and Waste Management Plan (Issue No. 2) prepared by Patterson Britton and dated September 2006*
- h) *Proposed Residential Subdivision, Slope Stability Assessment, prepared by Coffey and dated 31 August 2006*
- i) *Aboriginal Cultural Heritage Assessment, prepared by Dominic Steele Consulting Archaeology and dated September 2006*
- j) *Proposed Residential Subdivision, Environmental Site Assessment, prepared by Coffey and dated 11 September 2006;*
- k) *Bushfire Hazard Assessment prepared by Barry Eadie and dated 13 July 2006;*
- l) *Mosquito Impact Assessment – Supplementary Report prepared by Mosquito Consulting Services Pty Ltd and dated May 2007;*
- m) *Coastal Grove 1 Survey Street Lennox Head Preferred Project Report prepared by MG Planning Pty Ltd and dated June 2007.*

A4 Inconsistency between documents

In the event of any inconsistency between conditions of this approval and the drawings/documents referred to above, the conditions of this approval prevail.

A5 Statement of Commitments

- (1) The proposed development shall be constructed in accordance with the lodged and amended Statement of Commitments, including the Environmental Waste and Waste Management Plan and Draft Development Control Plan.

Note: Council requires further consultation and approval of the Draft Development Control Plan for the site, prior to release of the Subdivision Certificate (refer to condition E9).

A6 Planning Agreement

Prior to the issue of the Construction Certificate, the Proponent shall:

- a) Enter into a Planning Agreement with the Minister under section 93F of the EP&A Act. This Agreement must be generally consistent with commitments in the terms of the offer made by the Proponent on 18 July 2007, and specifically provide for:
 - The retention and protection of Hairy Joint Grass within the ecological buffer identified in Figure 6 of the *Review of Hairy Joint Grass (Arthraxon hispidus)* prepared by Eco Logical and dated May 2007.
 - The preparation of an Environmental Management Plan to manage the area within the ecological buffer.

- b) Register the Planning Agreement on the title of the land in accordance with the *Real Property Act 1900*.

A7 Environmental Management Plan

An Environmental Management Plan shall be prepared in consultation with Council and DECC for the management of the ecological buffer and associated open space. The 5 year plan will address the establishment of the reserve, maintenance and monitoring. In particular, the plan will address:

- a) Promotion of Hairy Joint Grass;
- b) Exclusion of cattle;
- c) Mowing in the winter months with removal of mulch;
- d) Hand weeding of particularly aggressive weeds;
- e) Management of access into the area;
- f) Locate rainforest species to complement the current and future population of Hairy Joint Grass;
- g) Provide a concise set of ongoing management requirements/conditions for the site to promote a self maintaining system;
- h) The provision of interpretive signage regarding the Hairy Joint Grass adjacent to the ecological polygon;
- i) Measures to protect the open space during both construction and occupation of the site;
- j) Fencing of Lot 45. The type of fencing will be determined in consultation with the Department of Environment and Climate Change; and
- k) Vegetation to be planted in the raingardens. Where an impervious geotextile layer is placed in the raingardens, vegetation shall be limited to plants with shallow root systems.

Note: this condition amends Commitment L in the Proponent's Statement of Commitments (refer Schedule 3).

A8 Water Quality Monitoring

Monitoring of runoff water quality shall be undertaken during construction and for five years after construction of the subdivision to verify the veracity of the controls. A quarterly report shall be provided to Council detailing the results of the monitoring during construction. If monitoring results exceed the relevant criteria the report shall include corrective actions taken to manage and prevent any reoccurrence. The contact details of the individual or organisation responsible for the monitoring program shall be provided to Council prior to commencement of works.

Note: this condition amends Commitment MM in the Proponent's Statement of Commitments (refer Schedule 3).

A9 Mosquito Management

The recommendations in Section 5.4 of the *Mosquito Impact Assessment Supplementary Report* prepared by Mosquito Consulting Services Pty Ltd, dated May 2007 must be incorporated into the Draft Development Control Plan prior to its finalisation.

A10 Duplex Lots

Proposed lots 11, 12, 25 and 26 are designated as Duplex Lots in accordance with Ballina Council Combined DCP.

A11 Lettering for road signs

All lettering on road signs is to conform with Australian Standard 1744:1975 Standard Alphabets for Road Signs Metric Units.

A12 Prescribed Conditions

The Proponent shall comply with the prescribed conditions under clause 98 of the Regulation.

PART B—PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE

B1 *Erosion and Sedimentation Control*

Soil erosion and sediment control measures shall be designed in accordance with the document *Managing Urban Stormwater—Soils & Construction Volume 1 (2004)* by Landcom. Details are to be submitted to the satisfaction of the Certifying Authority prior to the issue of the Construction Certificate.

The proponent/ builder is to ensure:

- a) All loose material does not wash into any roadways, gutters or watercourses.
- b) Service trenches are to be backfilled as soon as practicable.
- c) Downpipes are to be connected as soon as practicable.
- d) Buffer vegetation zones are to be retained adjoining roadways, stormwater drains or watercourses.
- e) Soil is not to be placed in the street gutter to provide access.
- f) Suitable erosion barriers ie. Cloth fencing or hay bales are to be provided where soil may wash into street gutters, drains or watercourses.
- g) The erosion control systems are to be maintained throughout the building process and beyond by the owner where necessary.

B2 *Intersection Analysis*

A safety analysis is required of the intersection of Blue Seas Parade and North Creek Road, in accordance with *Austrroads Guide to Traffic Engineering Practice – Part 5: Intersections at Grade* to determine whether the intersection requires upgrading to improve safety as a result of the development. The safety analysis will be submitted to Council prior to issue of the Construction Certificate.

B3 *Internal Roads and Pathways*

Internal roads and pathways are to be designed in accordance with Northern Rivers Local Government *Development Design and Construction Manuals* (as current at the time of construction works commencing). The design plans are to be approved by Council prior to issue of the Construction Certificate.

B4 *Driveway Access*

Driveway access design is to be in accordance with AS 2890.1:2004 with regard to grade and site visibility. The design plans are to be approved by Council prior to issue of the Construction Certificate.

B5 *Traffic Calming Devices*

The design of the traffic calming devices is to be in accordance with the Northern Rivers Local Government *Development Design and Construction Manuals* (as current at the time of construction works commencing) and *Austrroads Guide to Traffic Engineering Practice – Part 10, Local Area Traffic Management*. The design plans are to be approved by Council prior to issue of the Construction Certificate.

B6 Stormwater Management System

The provision of a stormwater management system for drainage and water quality controls on site with Water Sensitive Design requirements in accordance with Council's Development Control Plan No. 13 Stormwater Management (including drainage and water quality control) is to be generally in accordance with the drawing 'Revised Conceptual Stormwater Management Strategy' by Patterson Britton and dated 6/07/07. Details are to be in accordance with the *Northern Rivers Local Government Development Design and Construction Manuals* (as current at the time of construction works commencing). Where details are not addressed in these Manuals, the design is to comply with the requirements of Council's *Subdivision Code*.

B7 Rain Gardens

The rain gardens are to be provided generally as shown on the drawing 'Revised Conceptual Stormwater Management Strategy' by Patterson Britton and dated 6/07/07. Detailed design plans are to be provided for the rain gardens and associated drainage system including the surface runoff trench drains, seepage trench drains, gross pollutant traps, bio retention swale and seepage distribution trench gravel drains. A maintenance, inspection and operational plan is required to be established for the rain gardens. Satisfactory access to the rain gardens is to be provided for the purposes of regular inspections and maintenance. Design plans are to be approved by Council prior to issue of the Construction Certificate.

B8 Modelling of Stormwater

Detailed modelling of both water quality and stormwater drainage is required to be submitted with the design based on the approved development and incorporating a design which satisfies the water quality and drainage requirements. Details are to be approved by Council prior to issue of the Construction Certificate.

B9 Monitoring of Stormwater Management System

The stormwater drainage system shall be monitored to demonstrate that it satisfactorily complies with the intended design and Council's Development Control Plan No. 13 Stormwater Management. Amendments to the system may be required to ensure compliance. Details of the monitoring program are to be provided to Council prior to issue of the Construction Certificate.

B10 Seepage Trench Drains

To maintain satisfactory performance of the developed slopes, the proposed seepage trench drains will require the installation of flushout points for future maintenance. Details are to be approved by Council prior to issue of the Construction Certificate.

B11 Geotechnical Engineer

A suitable qualified Geotechnical Engineer is required onsite during construction of the 'trench drains' and 'seepage distribution trench gravel drains'. Details are to be provided to the satisfaction of the Certifying Authority prior to issue of the Construction Certificate.

B12 Bio Retention Swale

Detail regarding the design of the bio retention swale is to be approved by Council prior to issue of the Construction Certificate.

B13 Raingarden location

If the raingardens are to be located below the level of the groundwater they shall be lined with an impervious geotextile layer to prevent ingress of groundwater

B14 Geotechnical

Earthworks shall be carried out in accordance with AS 3798-1996, "Guidelines for Earthworks for Commercial and Residential Developments".

B15 Remediation of geotechnical scars

The remediation of the slopes that were subject to lateral excavations for drilling rig access in February 2002 is to be in accordance with the construction methodology as detailed in the Coffey letter; Methodology for Earthworks for Remediation of On-site Excavation dated 20 February 2007. Also as required by GHD in their letter dated 7 March 2007, this remedial work should be completed prior to any residential development of the site and from a geotechnical slope stability perspective as soon as possible. Detail of when this work is going to occur is to be provided to Council prior to issue of the Construction Certificate.

B16 Cut and Fill levels

Cut and fill levels for each zone within the proposed development are to be in accordance with the geotechnical report by Coffey dated 31 August 2006. The road design is also required to comply with these recommendations. Design plans are to be approved by Council prior to issue of the Construction Certificate.

B17 Approval of Environmental Management Plan

The Environmental Management Plan shall be prepared prior to the release of the Construction Certificate and shall be submitted to and approved by the Director, Coastal Assessments.

Note: this condition amends Commitment N in the Proponent's Statement of Commitments (refer Schedule 3).

B18 Weed Control

The Environmental Management Plan shall include a five year program of bushland maintenance and weed control using trained personnel. This program will involve weed control along the creek lines, the littoral rainforest remnants to the south, where revegetation has been completed and in the vegetation on the northern escarpment of the site (including vegetation identified as SEPP 26 – Littoral Rainforests No. 38A). The program of bushland maintenance/weed control will commence from the date of the issue of a Construction Certificate.

Note: this condition amends Commitment O in the Proponent's Statement of Commitments (refer Schedule 3).

B19 Cycleway and Footpath

The north-south oriented footpath shall be relocated to the western side of the drainage line and shall be located outside of the ecological polygon for the Hairy Joint Grass identified in Figure 6 of the *Review of Hairy Joint Grass (Arthraxon hispidus)* prepared by Eco Logical and dated May 2007.

The location of the east-west oriented footpath shall be redesigned to ensure that it has the least possible impact on the ecological polygon for the Hairy Joint Grass identified in Figure 6

of the *Review of Hairy Joint Grass (Arthraxon hispidus)* prepared by Eco Logical and dated May 2007.

Design plans for both footpaths are to be submitted to Council prior to the issue of a Construction Certificate.

B20 Water Supply

- a) Water supply shall be provided to the development in accordance with the 'Coastal Grove, Lennox Head Infrastructure Strategy' report, prepared by Patterson Britton and Partners and dated September 2006; as amended by the 'Draft Statement of Commitments' (Schedule 3). Design plans are to be in accordance with Council's Subdivision Code (as current at the time of construction works commencing) and are to be approved by Council prior to issue of the Construction Certificate
- b) The above servicing strategy shall be amended by providing a link between the existing water main in Seamist Place and the proposed water main in Road No 2 of the proposed development. This link could follow the same corridor as the proposed pedestrian pathway and gravity sewer main linking the proposed development with Seamist Place.

Note: The proposed link would improve water quality through increased circulation within water mains and provide an alternative means of supplying the development should it be necessary to shut off the water supply from Survey Street and Blue Seas Parade.

- c) A water service to proposed lot 10 shall be provided by extending the boosted pressure zone main in Blue Seas Parade to the frontage of this property, in order to provide satisfactory pressure to this allotment.

B21 Sewer Connection

Sewerage services shall be provided to the development in accordance with the 'Coastal Grove, Lennox Head Infrastructure Strategy' report, prepared by Patterson Britton and Partners dated September 2006; as amended by the 'Draft Statement of Commitments' (Schedule 3). The 'Sewer Layout' contained within the Infrastructure Strategy shall be updated for the approved subdivision layout. The sewer main from the development to SP3107 shall be located outside the ecological polygon identified for the Hairy Joint Grass in *Review of Hairy Joint Grass (Arthraxon hispidus)* prepared by Eco Logical and dated May 2007.

Design plans are to be in accordance with Council's *Subdivision Code* (as current at the time of construction works commencing) and are to be approved by Council prior to issue of the Construction Certificate.

B22 Dual Reticulation

Dual reticulation shall be provided to the development generally in accordance with the 'Coastal Grove, Lennox Head Infrastructure Strategy' report, prepared by Patterson Britton and Partners dated September 2006; as amended by the 'Draft Statement of Commitments' (Schedule 3). Design plans are to be in accordance with Council's *Subdivision Code* (as current at the time of construction works commencing) and are to be approved by Council prior to issue of the Construction Certificate.

B23 Sewer Easements

Easements are to be provided over all sewer mains in accordance with Council's *Subdivision Code* (as current at the time of commencement of construction). Details are to be approved by Council prior to issue of the Construction Certificate.

B24 Administration/ inspection fees

Where Council is not the Certifying Authority, the following fees/ contributions/ charges are to be paid to Council prior to the issue of a Construction Certificate:

- (a) Administrative certificate handling and registration fee
- (b) Plumbing, drainage and water service inspection fee

B25 List of Public Infrastructure

In connection with the "Works-As-Executed" drawings the proponent shall submit a listing of all road, stormwater and sewer assets generated by the development. The format of the list shall conform to the proforma in Council's *Subdivision Code* (as current at the time).

B26 Fees and Bonds

Prior to issue of the Construction Certificate, the following fees and bonds for civil works are to be paid to Council (including the amount of goods and Services Tax payable):

Inspection Fee: equal to 3% of the estimated cost the related civil works

Maintenance bond: equal to 5% of the estimated cost of the related civil works. A maintenance period of 12 months will apply to all related works from the date of issue of an Occupation Certificate. The bond may be used by Council to maintain, repair or rectify works that are failing.

B27 Repair of Damaged Infrastructure

Kerb and guttering, footpaths, utility services or roadworks damaged as a result of construction works related to the development shall be immediately reinstated to the satisfaction of Council.

B28 Children's Play Area

Further consultation is required with Council regarding the final location of the proposed Children's Play area. The final location must be to the satisfaction of Council, and determined prior to release of the Construction Certificate.

B29 Aboriginal Consultation

Consultation must be undertaken to the satisfaction of DECC in accordance with the *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC July 2005). Details of the consultation will be forwarded to DECC for approval prior to the issue of a Construction Certificate.

B30 Road Construction

With the proposed opening of any new road, the applicant shall design and construct all road subgrades and pavements, kerb and gutter, stormwater and subsurface drainage, water, sewer and telephone and electricity reticulation in accordance with the provisions of Council's *Subdivision Code* (as current at the time of construction works commencing). In this regard, a Construction Certificate will not be issued until plans and specifications have been submitted to the Certifying Authority at least four (4) weeks prior to construction commencing.

B31 Landscape Plan

Prior to issue of a Construction Certificate, the proponent shall submit a detailed landscape plan (in duplicate) to Council, prepared in conformity with Policy Statement No. 6 of Ballina

Shire Council Development Control Plan No. 1 – Urban Land. The plan is to show the location and name of shrub and tree species to be planted, mature height of trees and the location of grassed and paved areas. The plan shall also show the location of existing and proposed utility services.

PART C—PRIOR TO COMMENCEMENT OF WORKS

C1 *Vegetation*

All vegetation to be pruned is to be clearly marked with flagging tape, prior to the commencement of work at the site.

C2 *Construction Certificate (Subdivision)*

Prior to construction of the approved development it is necessary to obtain a Construction Certificate. Either Council or an appropriately accredited certifier may issue a Construction Certificate. A separate application, complete with detailed plans and specifications, must be made.

C3 *Appointment of Principal Certifying Authority (Subdivision)*

The proponent is to submit to Council and the Department at least two (2) days prior to the commencement of any works, a completed Form 7 of the *Environmental Planning & Assessment Regulation 1994*, giving the name and details of the Principal Certifying Authority.

C4 *Notice of commencement*

The proponent is to submit to Council and the Department at least two (2) days prior to the commencement of any works, a completed Form 7 of the *Environmental Planning & Assessment Regulation 1994* giving the date of commencement and details of the Project Approval and associated Construction Certificate.

C5 *Construction Management Plan*

Prior to the commencement of any works on the site, a Construction Management Plan shall be submitted to and approved by the Principal Certifying Authority. The Plan shall address, but not be limited to, the following matters where relevant:

- (2) hours of work,
- (3) contact details of site manager,
- (4) erosion and sediment control,
- (5) traffic management,
- (6) noise and vibration management,
- (7) waste management, and
- (8) flora and fauna management.

The proponent shall submit a copy of the approved plan to the Council.

C6 *Road Construction*

All civil works required by this approval shall be designed by a suitably qualified Civil Engineer in accordance with the provisions of Council's Subdivision Code (as current at the time of construction works design being submitted for approval). The engineering design shall be submitted to the Principal Certifying Authority for Construction Certificate approval at least four (4) weeks prior to commencement of construction.

C7 *Protection of Hairy Joint Grass*

During construction works all areas of Hairy Joint Grass to be retained (identified in *Review of Hairy Joint Grass (Arthraxon hispidus)* prepared by Eco Logical and dated May 2007) are to be protected with temporary fencing and flagging tape. Fencing is to be established a minimum of 3 metres outside of the identified ecological polygon. Council's Environmental Scientist is to be informed upon the completion of the required fencing works.

C8 *Protection of existing vegetation*

During construction works all vegetation and/or trees to be retained are to be protected with temporary fencing and flagging tape. Fencing is to be established a minimum of 5 metres outside of the identified critical root zone areas and/or drip line zone which ever is greater. Council's Environmental Scientist is to be informed upon the completion of the required fencing works.

C9 *Movement of Trucks Transporting Waste Material*

The proponent shall notify the Roads and Traffic Authority's Traffic Management Centre (TMC) of the truck route(s) to be followed by trucks transporting waste material from the site, prior to the commencement of the removal of any waste material from the site.

PART D—DURING CONSTRUCTION

D1 Site Notice

A site notice(s) shall be prominently displayed at the boundaries of the site for the purposes of informing the public of project details including, but not limited to the details of the Builder, Principal Certifying Authority and Structural Engineer. The notice(s) is to satisfy all but not be limited to, the following requirements:

- (1) Minimum dimensions of the notice are to measure 841mm x 594mm (A1) with any text on the notice to be a minimum of 30 point type size;
- (2) The notice is to be durable and weatherproof and is to be displayed throughout the works period;
- (3) The approved hours of work, the name of the site/project manager, the responsible managing company (if any), its address and 24 hour contact phone number for any inquiries, including construction/noise complaint are to be displayed on the site notice; and
- (4) The notice(s) is to be mounted at eye level on the perimeter hoardings/fencing and is to state that unauthorised entry to the site is not permitted.

D2 Mosquito Management

The consultant mosquito entomologist is to be retained as a member of the development team until the completion of the project to advise in respect to action necessary to minimise the potential for mosquito breeding or harbourage within the estate. The services of the entomologist shall be retained during construction.

D3 Contact Telephone Number

The Applicant shall ensure that the 24 hour contact telephone number is continually attended by a person with authority over the works for the duration of the development.

D4 Approved Plans to be On-site

A copy of the approved and certified plans, specifications and documents incorporating conditions of approval and certification shall be kept on the site at all times and shall be readily available for perusal by any officer of the Department, Council or the PCA.

D5 Construction Environmental and Waste Management Plan (During Construction)

- a) No burning of cleared vegetation or other waste should occur on site during the construction phase of the development. Council has a No Burn Policy that prohibits the burning of any waste in residential areas, which aims to minimise air pollution. All waste should be removed to a licensed waste management facility, unless Council grants prior written approval.
- b) A secure, covered and bunded area should be provided on site for the storage of chemicals, including chemical flocculant.
- c) To manage noise during construction the applicant should use mufflers on all equipment, and notify adjoining owners of proposed work and provide them with the contact numbers of the construction manager for any complaints or concerns to be raised.

- d) It is proposed to pump out the sediment retention ponds within a period of five days following rainfall and treatment with a flocculant. No details of how this will be done or where the water will be discharged have been provided; these details as well as the details for the weir and spillway should be submitted to and approved by Council prior to the issuing of a Construction Certificate.
- e) In addition to the stabilised site entrance proposed the applicant shall install a wheel shaker or wheel wash if it becomes necessary in order to keep the road carriageways clean of mud and dirt.
- f) The sediment and erosion controls proposed are inadequate in the steeper areas of the site. More sediment fencing should be installed in line with the contours to slow down water movement and trap excess sediment.
- g) The hours of operation for any noise generating construction activity (including delivery of materials to and from the site) on the proposed development are to be limited to within the following times:
 - (i) Monday to Friday 7.00am to 6.00pm
 - (ii) Saturday 8.00am to 1.00pm
- h) No noise generating construction activities are to take place on Sundays or public holidays.
- i) A water truck designed to suppress dust from exposed surfaces and access roads shall be available at the site or in the immediate vicinity. Exposed surfaces and access pads shall be regularly wetted to suppress dust generation until such time that construction is completed and areas have been revegetated. All disturbed areas shall be revegetated immediately once they are completed.
- j) The discharge of sediment and waste materials including concrete waste, paint, plaster and the like material into any roadway, natural or constructed drainage system, watercourse and/or adjoining land constitutes a breach of development approval conditions. Council's Authorised Officers may issue a Clean up notice, Prevention Notices and/or an on-the-spot fine in accordance with the *Protection of the Environment operations Act 1997*.

D6 Erosion and Sediment Control

All erosion and sediment control measures, as designed in accordance with Condition B1, are to be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works has been stabilised and rehabilitated so that it no longer acts as a source of sediment.

D7 Disposal of Seepage and Stormwater

Any seepage or rainwater collected on-site during construction shall not be pumped to the street stormwater system unless separate prior approval is given in writing by Council.

D8 Traffic Control during Construction

All traffic control during construction shall be in accordance with the Roads and Traffic Authority – Traffic Control at Work Sites.

D9 Revegetation of Disturbed Areas

All disturbed and exposed areas are to be revegetated. Revegetation of such areas shall be implemented as soon as construction works end in each area of the development.

D10 Vegetation Removal and Pruning

- a) Vegetation removal on the site must be limited to those areas identified on *PSL 3394/PA03 Landscape Plan (Rev D)* prepared by Hassell and dated 6/07/07.
- b) Vegetation pruning is to be kept to a minimum and is to be conducted in a manner that ensures the ongoing environmental integrity of the area. All pruning activities are to conform to Australian Standard AS4373-2007 Pruning of Amenity Trees. All vegetation pruning is to be overseen by a qualified arborist.
- c) All native trees and shrubs other than those to be pruned or removed on the site are to be protected during clearing works.
- d) All vegetation removal is to be undertaken in a manner that ensures the ongoing integrity of the vegetated canopy to be retained and/or adjacent native plants.

D11 Rain Garden Construction

The construction of the rain gardens must follow the recommended design criteria for minimising mosquito production as required by *Mosquito Impact Assessment Supplementary Report* prepared by Mosquito Consulting Services Pty Ltd and dated May 2007.

D12 Topsoiling

At the commencement of each section of civil works, all topsoil within the road formation of that section is to be stripped and stockpiled and used for topsoiling all disturbed areas including road cut and fill batters.

D13 Fill Material

The proponent shall ensure that any fill material imported to the site for the proposed development shall only be obtained from other fill sources with approved testing. The supplier of the fill material must certify to Council at the completion of the construction of the development that the material was free of contaminants, being natural or otherwise.

D14 Erosion Control

During and after construction, measures shall be undertaken to minimise erosion of soil due to wind. Disturbed areas shall be revegetated with grass seed to promote early grass cover. To prevent wind erosion whilst the grass cover is establishing, all disturbed areas may be covered with straw mulch or equivalent. All disturbed areas shall be revegetated as they are completed.

D15 Pollutant incident

In the event of a pollution incident on the premises, that has caused, is causing, or is likely to cause harm to the environment, the proponent shall report the incident to Council immediately as they, or their onsite representative, become aware of the incident.

D16 Dust Control Measures

Adequate measures shall be taken to prevent dust from affecting the amenity of the neighbourhood during construction. In particular, the following measures must be adopted if required:

- (1) Physical barriers shall be erected at right angles to the prevailing wind direction or shall be placed around or over dust sources to prevent wind or activity from generating dust emissions,

- (2) Earthworks and scheduling activities shall be managed to coincide with the next stage of development to minimise the amount of time the site is left cut or exposed,
- (3) All materials shall be stored or stockpiled at the best locations,
- (4) The surface should be dampened slightly to prevent dust from becoming airborne but should not be wet to the extent that run-off occurs,
- (5) All vehicles carrying spoil or rubble to or from the site shall at all times be covered to prevent the escape of dust or other material,
- (6) All equipment wheels shall be washed before exiting the site using manual or automated sprayers and drive-through washing bays,
- (7) Gates shall be closed between vehicle movements and shall be fitted with shade cloth, and
- (8) Cleaning of footpaths and roadways shall be carried out regularly.

D17 Impact of Below Ground (Sub-surface) Works – Non-Aboriginal Relics

If any archaeological relics are uncovered during the course of the work, then all works shall cease immediately in that area and the NSW Heritage Office contacted. Depending on the possible significance of the relics, an archaeological assessment and an excavation permit under the NSW *Heritage Act 1977* may be required before further works can continue in that area.

D18 Impact of Below Ground (Sub-surface) Works – Aboriginal Relics

If any Aboriginal archaeological relics are exposed during construction works, the Applicant shall immediately notify the Department of Environment and Climate Change and obtain any necessary approvals to continue the work. The Applicant shall comply with any request made by the DECC to cease work for the purposes of archaeological recording.

PART E—PRIOR TO SUBDIVISION CERTIFICATE

E1 *Part 4A Certificate*

Prior to the registration of final subdivision plan in the Office of the Registrar-General, a Part 4A certificate shall be obtained under section 109D(1)(d) of the *Environmental Planning and Assessment Act 1979*.

E2 *Subdivision works to comply with code*

All works associated with this subdivision are to be designed and constructed in compliance with Council's *Subdivision Code* (as current at the time of construction works commencing).

E3 *Survey marks*

Where permanent survey marks have been placed or existing survey marks have been connected to the Australian Height Datum under the requirements of the Survey Practice Regulation 1990 (Clause 33), those values are to be provided to Council and shown on the Works-as-Executed drawings.

E4 *Consolidation of Lots*

Lot 45 must be consolidated with Lot 88 DP 802588 with details provided to Council prior to the issue of a Subdivision Certificate.

E5 *Section 149 Certificate*

The proponent shall request Council to place a note on the Section 149 certificate for the proposed lots indicating that the land is subject to geotechnical constraints and must be developed in accordance with Council's controls.

E6 *Asset Protection Zones*

The proponent must create a suitable restriction as to user allowing for the creation and maintenance of a Bushfire Asset Protection Zone (APZ) on Lot 26. The width of the restriction within the boundary of Lot 26 must ensure that a 20m APZ is provided between the boundary of Lot 45 and the building envelopes on Lot 26.

The restriction is to be clearly marked on the plan of subdivision and Council is to be nominated as the sole party to vary, modify and/or extinguish the restriction.

E7 *Dedication of Internal Roads*

All internal roads shall be constructed by the developer and dedicated to Council as public roads. Upon dedication and at the end of the maintenance period Council will be responsible for the on-going maintenance of the roads.

E8 *Monetary Contributions*

Prior to the issue of a Subdivision Certificate, total payment to Council of non-refundable monetary contribution is to be made towards the provision of public services and amenities, which are required as a result of the development. These contributions are required in accordance with s94 of the EP&A Act 1979, and Council's adopted Contribution Plans.

The current amounts required are:

- **\$40,964.00** for the provision of community facilities, in accordance with s94 Contribution Plan: Community Facilities.
- **\$25,650.00** for the acquisition and/ or embellishment of public open space, in accordance with s94 Contribution Plan: Public Gardens and Recreational Enhancement.
- **\$79,002.00** for the provision of major shire wide road infrastructure, in accordance with Plan No. 1: Ballina Road Contribution Plan.

These rates are reviewed periodically by Council and the contribution amounts will be calculated at the rate applicable at the time of payment. Copies of the Contribution Plans may be viewed at the Council Chambers, corner of Cherry and Tamar Streets, Ballina.

E9 Water Supply Contributions

Prior to this issue of a Subdivision Certificate, the proponent will have obtained, or at least be eligible to obtain, a certificate of compliance for development. To be eligible, all necessary water supply, sewerage and stormwater infrastructure would be completed and the developer will have paid the following:

- **\$113,278.00** for the augmentation of water supply mains and storage within Ballina Shire,
- **\$245,404.00** for the augmentation of sewerage headworks.

These developer charges are levied in accordance with Section 64 of the *Local Government Act 1993* and Section 306 of the *Water Management Act 2000*. The developer charges are reviewed periodically by Council and the contribution amounts will be calculated at the rate applicable at the time of payment. Copies of the Contributions Plans may be viewed at the Council Chambers, corner of Cherry and Tamar Streets, Ballina.

E10 Infrastructure Development Servicing Contribution

Prior to the issue of the subdivision certificate payment is required to Council (as collection agent for Rous Water), of a non-refundable monetary contribution towards the provision of infrastructure development servicing in accordance with Section 64 of the *Local Government Act 1993* and Section 306 of the *Water Management Act 2000* for an amount of:

- **\$132,316.00** for the amplification and provision of water supply infrastructure to meet the demands generated by new development on headworks and distribution works.

This rate is reviewed periodically and the contribution amounts will be calculated at the rate applicable at the time of payment. Copies of the Development Servicing Plan may be inspected at the Council Chambers, however all enquiries in relation to the Rous Water Supply Development Servicing Plans should be directed to Rous Water (Lismore).

E11 Site Specific DCP

Prior to the release of the subdivision certificate, Council is to approve and adopt the Coastal Grove Lennox Head DCP. This may require additional consultation by the proponent.

In the event that the DCP hasn't been adopted by the time the subdivision certificate is issued, all controls in the draft DCP are adopted as conditions of this approval. The Draft DCP appears at Schedule 4 of this approval.

E12 Children's Play Area

The children's play area must be constructed prior to the release of the subdivision certificate.

E13 Geotechnical

The consultant geotechnical engineer is to certify the following on site:

- The rehabilitation of the existing site benches to the hillside where previous geotechnical testing has taken place;
- The placement and construction of the proposed subsoil cut off drains to all allotments; and
- All lots in the subdivision are to be certified as being sound for building construction purposes, classifying the soil type, and addressing the adequate bearing capacities of the soils in accordance with AS 2870, Residential Slabs and Footings Construction. Particular attention is to be given to lots 19-32.

This certification shall be provided to Council prior to the release of the Subdivision Certificate.

E14 Landscaping

Prior to the release of a Subdivision Certificate, the site is to be landscaped in accordance with the approved landscape plan. The landscaping is to include the turfing of the site and the undertaking of appropriate plantings generally in accordance with Policy Statement No. 6 of *Ballina Shire Council Development Control Plan No. 1 – Urban Land*.

E15 Civil works

All civil works approved with the Construction Certificate are to be completed to the satisfaction of Council prior to issue of a Subdivision Certificate. All works are to be completed in accordance with Council's *Subdivision Code* (as current at the time of commencement).

E16 Crown Road

The proposed Road 1 is located within Crown Road Reserve. Prior to issue of a Subdivision Certificate, authorisation for the dedication of this land to Council as a public road is required from the Department of Lands.

E17 Dedication of Open Space

The Proponent must make necessary arrangements for the dedication of the open space areas to Council with the subdivision.

A deed of agreement must be prepared with Council to allow the proponent to carry out management and maintenance works on this land during the five years following construction, prior to Council maintaining this area.

E18 Electricity and Telecommunications

Certification is to be provided that electricity and telephone services have been provided to each lot to the satisfaction of the relevant authorities.

E19 Drainage

Certification by a Registered Surveyor is required, prior to Subdivision Certificate, that all services and domestic drainage lines are wholly contained within the respective lots.

E20 Services

Documentary easements for services, drainage, support and shelter, repairs, maintenance or any other encumbrances and indemnities required for joint or reciprocal use of part or all of the proposed lots as a consequence of the subdivision, must be created over the appropriate lots in the subdivision pursuant to Section 88B of the *Conveyancing Act 1919*.

ADVISORY NOTES

AN1 Compliance Certificate, Water Supply Authority Act, 2000

Prior to issuing a subdivision certificate, a Compliance Certificate shall be provided to the consent authority showing that the development has met with the detailed requirements of the relevant water supply authority for the region that the subject site is located within.

The developer shall obtain the Compliance Certificate from the relevant local water supply authority and produce this to the satisfaction of:

- (1) the certifying authority before release of the Construction Certificate,
- (2) the consent authority before the release of the subdivision certificate, and
- (3) the principal certifying authority prior to occupation.

AN2 Requirements of Public Authorities for Connection to Services

The proponent shall comply with the requirements of any public authorities (e.g. Energy Australia, Telstra Australia, AGL, etc) in regard to the connection to, relocation and/or adjustment of the services affected by the construction of the proposed structure. Any costs in the relocation, adjustment or support of services shall be the responsibility of the Applicant. Details of compliance with the requirements of any relevant public authorities are to be submitted to the satisfaction of the PCA prior to the issue of the Construction Certificate.

AN3 Temporary Structures

An approval under Section 68 of the *Local Government Act 1993* must be obtained from the Council for the erection of the temporary structures. The application must be supported by a report detailing compliance with the provisions of the Building Code of Australia.

Structural certification from an appropriately qualified practicing structural engineer must be submitted to the Council with the application under Section 68 of the *Local Government Act 1993* to certify the structural adequacy of the design of the temporary structures.

AN4 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 provides that a person must not take an action which has, will have, or is likely to have a significant impact on a matter of national environmental significance (NES) matter; or Commonwealth land, without an approval from the Commonwealth Environment Minister.

This application has been assessed in accordance with the New South Wales Environmental Planning & Assessment Act, 1979. The determination of this assessment has not involved any assessment of the application of the Commonwealth legislation. It is the proponents responsibility to consult Environment Australia to determine the need or otherwise for Commonwealth approval and you should not construe this grant of consent as notification to you that the Commonwealth Act does not have application. The Commonwealth Act may have application and you should obtain advice about this matter. There are severe penalties for non-compliance with the Commonwealth legislation.

SCHEDULE 3

MP 06_0002

PROPOSED 39 LOT RESIDENTIAL SUBDIVISION

1 SURVEY STREET, LENNOX HEAD

STATEMENT OF COMMITMENTS

DRAFT STATEMENT OF COMMITMENTS

In accordance with the Director-General's EA requirements, the following amended draft statement of commitment identifies the proposed mitigation measures, environmental management of residual impacts and monitoring for the proposed development. This draft Statement of Commitments responds to the amended design post exhibition and identifies those measures that will need to be implemented during the pre-construction and construction phases as well as once the development is complete in order to minimise impacts on the environment. Other mitigation measures including measures to minimise any impacts on the threatened species on site have been incorporated into the revised design.

Where a plan or report referred to in the following Statement of Commitments has not yet been amended to reflect the revised subdivision design it should be taken that this will be undertaken prior to the issue of a construction certificate. In these circumstances the principles outlined in that plan / report should be taken to generally apply to the revised scheme.

The applicant undertakes to carry out the development in accordance with the commitments given below

GENERAL

- A. The proponent will undertake the development in accordance with the Environmental Assessment report prepared by MG Planning Pty Ltd dated September 2006 and as amended by the Preferred Project Report dated June 2007 including:
- Subdivision Plan PA02 (dated 20 June 2007), Landscape Plan PA03 (dated 20 June 2007), Landscape Sections PA04 dated 19 September 2006, prepared by Hassell, provided under separate cover;
 - The Civil Drawings prepared by Patterson Britton and Partners in the Coastal Grove Infrastructure Strategy (September 2006) and as amended by the Revised Conceptual Stormwater Management Strategy dated 21 June 2007.
 - This Statement of Commitments.

STATUTORY REQUIREMENTS

- B. In relation to any obligations under other Acts, the proponent will ensure that all licences, permits and approvals are obtained and kept current, as required throughout the construction and post construction phases of the development.

OPEN SPACE

- C. The ecological buffer area and open space on the site is to be dedicated to Council as a conservation reserve following rehabilitation, enhancement and management according to the Environmental Management Plan and embellishments in accordance with the Landscape Plan PA03 dated 20 June 2007 and Landscape Sections PA04 prepared by Hassell. The embellishment and dedication of the area is to

be undertaken five years after the release of the construction certificate at the conclusion of the maintenance and monitoring program.

- D. The open space is to be embellished in accordance with the Landscape Plan PA03 dated 20 June 2007 and Landscape Sections PA04 prepared by Hassell and provided under separate cover.
- E. In general, the pedestrian and cycleway crossing of the drainage corridor within the open space area will be designed in accordance the Department of Natural Resources Guidelines for the Design and Construction of Paths and Cycleways Along Watercourses and Riparian Areas. This work will be done prior to the issue of the subdivision certificate.
- F. The proposed pathway through the open space corridor will be designed to ensure that there will be no adverse impact on the Hairy Jointgrass distribution. The Environmental Management Plan for the Hairy Jointgrass will provide details of the design and construction of the pathway.
- G. The proponent will work with Council on the detailed design of the children's playground, including the provision of a shade structure and the provision of appropriate play equipment.
- H. Where possible, landscaping in the open space and road reserves will be from locally sourced plant species.

ROADS

- I. The proposed roads will be constructed and dedicated to Council for the full frontage of all proposed lots. Roads will be designed in accordance with the drawings prepared by Patterson Britton and Partners in the Coastal Grove Infrastructure Strategy (September 2006) as amended by the revised design illustrated on Landscape Plan PA03 dated 20 June 2007.
- J. In terms of Road 1 design, the proponent will at the construction certificate stage explore with Council the potential to lower the pavement levels to remove the need for any suspended driveway structures.

FLORA AND FAUNA

- K. The threatened grass species, Hairy Jointgrass (*Arthraxon hispidus*) is to be retained and protected within an 'ecological buffer', as mapped in Figure 6 of the "Review of Hairy Jointgrass (*Arthraxon hispidus*) at Survey Street, Lennox Head" prepared by Ecological Australia (May 2007) including land identified on Lot 88 in DP 802588.
- L. An Environmental Management Plan will be prepared in consultation with Council and DECC for the management of the ecological buffer and associated open space. The 5 year plan will address the establishment of the reserve, maintenance and monitoring. In particular, the plan will address:

- Promotion of Hairy Jointgrass
 - Exclusion of cattle
 - Mowing in the winter months with removal of mulch.
 - Hand weeding of particularly aggressive weeds
 - Management of access into the area
 - Locate rainforest species to complement the current and future population of Hairy Jointgrass
 - Provide a concise set of ongoing management requirements/conditions for the site to promote a self maintaining system
- M. Within the ecological buffer the hydrology of the Hairy Jointgrass will remain without significant change and there will be no reshaping of the creek banks. Ongoing management of the ecological buffer will be defined within the environmental management plan, and will include:
- Any landscape plantings will be compatible with appropriate habitat to protect and enhance the Hairy Jointgrass
 - Any paths are to avoid traversing the known Hairy Jointgrass population and may include elevated pedestrian cycleways or boardwalks that may enable viewing and interpretation of the Hairy Jointgrass
 - No reshaping of creek or its banks in the vicinity of the Hairy Joint Grass
 - Any passive recreation or access is to be restricted to designated paths to minimise impact
- N. The Environmental Management Plan will be prepared prior to the release of the construction certificate.
- O. The Environmental Management Plan will include a five-year program of bushland maintenance and weed control using trained personnel. This program will involve weed control along the creek lines, the littoral rainforest remnants to the south and where revegetation has been completed. The program of bushland maintenance/weed control will commence from the date of issue of the Construction Certificate.
- P. Monitoring and ongoing survey work of the Hairy Jointgrass population will be undertaken for a period of five years at yearly intervals in the late summer months. An annual report will be provided to Council regarding the monitoring program. Additional survey work will commence prior to the issue of the construction certificate and monitoring will commence from the date of issue of the Construction Certificate.
- Q. In accordance with the Landscape Plan PA03 dated 20 June 2007, a vegetation buffer will be provided between the Coastal Fontainea known from Amber Reserve and the closest proposed house on Lot 1.
- R. Additional littoral rainforest species will be planted adjacent to the existing rainforest species in the riparian corridor, and weed control will be undertaken for a period of five years by experienced bushland regenerators to further protect this rainforest remnants.
- S. All new planting will be undertaken prior to the issue of the subdivision certificate.

- T. The construction management plan will be reviewed to incorporate measures for the protection of the Hairy Jointgrass,

VISUAL IMPACT AND HOUSING

- U. The proponent will work with Ballina Council in finalising the draft Development Control Plan for the subdivision to ensure that appropriate controls are put in place to guide the design and construction of future housing. Matters to address include:
- Vertical building lines for Lots 34-39 and 11-12.
 - Enhanced sustainability measures including shading and screen devices, and landscaping to the western facades to reduce any potential for glare.
 - Terminology for duplex lots.
 - Appropriate measures to protect against mosquitoes, as recommended in the Mosquito Impact Assessment Supplementary Report dated May 2007.
- V. Duplex developments will be confined to lots 25, 26, 11 and 12.

FIRE MANAGEMENT

- W. An Asset Protection Zone will be provided to the south of the site, south of the proposed roadway within the open space area. Landscaping in the Asset Protection Zone will be in accordance with the *Planning for Bushfire Protection* (Rural Fire Service, 2001) or as otherwise specified by the NSW Rural Fire Service.
- X. An asset protection zone will be provided to Lot 10 in accordance with *Planning for Bushfire Protection* 2001. A bushfire management plan will be developed for the remaining vegetation and approved prior to the issue of a Construction Certificate for subdivision works.
- Y. Other bushfire protection measures in response to the amended subdivision design will be undertaken in accordance with the letter prepared by Barry Eadie Consulting Pty Ltd dated 24 May 2007. These include:
- The provision of non combustibile fencing to lots adjoining the area of Hairy Joint Grass at a minimum height of twice the height of the Hairy Joint Grass;
 - The provision of pedestrian access through the area of Hairy Joint Grass connecting Road No1 and Road No 2. This design and location of the pedestrian access is to be undertaken as part of the Environmental Management Plan.

CULTURAL HERITAGE

- Z. If any artefacts or sites relating to Aboriginal heritage are uncovered during site works, all work will cease and the NSW Department of Environment and Conservation will be contacted to advise on what action must occur prior to recommencing works.
- AA. All site contractors will be briefed prior to the commencement of future works about the statutory responsibilities and obligations concerning Aboriginal cultural heritage according to the National Parks and Wildlife Act 1974.

SERVICES

- BB. Water reticulation will be provided to each lot in accordance with the recommendations of the *Infrastructure Strategy* prepared by Patterson Britton and Partners (September 2006) and prior to the issue of the construction certificate.
- CC. Recycled water reticulation will be installed within the development in preparation for future provision of a recycled water trunk main to the area.
- DD. Satisfactory arrangements will be made with Telstra Australia prior to the release of the construction certificate, for the provision of standard communications services into and throughout the development. This service will be reticulated throughout the development in shared trenching accommodating pits and 100 mm conduits.
- EE. Satisfactory arrangements will be made with Country Energy prior to the release of the construction certificate, for the supply of electricity to each lot.
- FF. Upgrade to the sewer and reticulation to each of the lots will be undertaken in accordance with the Coastal Grove Infrastructure Strategy prepared by Patterson Britton and Partners (September 2006).
- GG. Prior to construction of dwellings on Lots 10 – 12 and 29 – 38, a hydraulic design of internal service lines and plumbing will be undertaken by a suitably qualified person.
- HH. Prior to construction of dwellings on Lots 10 – 12 and 29 – 38, 25mm water service and 20mm water meter will be provided in lieu of the standard 20mm water meter usually provided for residential lots.
- II. In terms of the sewer reticulation layout, further details of the diversion flows from SP3106 to SP3108 and the upgrading of SP3107 and the possible upgrading of the rising main from the pump station will be submitted prior to issue of the construction certificate.
- JJ. Detailed sewer and water reticulation plans will need to be submitted with an application for Construction Certificate and development contributions paid in accordance with Councils Development Servicing Plan.

WATER CYCLE MANAGEMENT

KK. Water quality control measures will be designed and installed in accordance with the recommendations of the Coastal Grove Water Cycle Management Report prepared by Patterson Britton and Partners (September 2006) except as modified by the Revised Conceptual Stormwater Management Strategy dated 21 June 2006. The water cycle management strategy will be undertaken prior to the release of the subdivision certificate. Specific measures to be undertaken include, but are not limited to, the following:

- construction of raingardens/bioretention basins
- installation of five gross pollutant traps, as shown in the Revised Conceptual Stormwater Management Strategy of the Water Cycle Management Report
- provision of bioretention/vegetated swales alongside roadways in accordance with the Water Cycle Management Report and the Revised Conceptual Stormwater Management Strategy dated 21 June 2007.
- installation of infiltration trenches along the rear of lots located on the eastern side of the site as shown in the Revised Conceptual Stormwater Management Strategy
- review of potential scour of the swale to Road 2 to be addressed at detailed design phase with appropriate inclusion of rock scour protection where velocities are excessive, prior to the issue of the Construction Certificate.

LL. All construction works will be undertaken in accordance with the Erosion and Sediment Control Plan prepared by Patterson Britton and Partners dated September 2006 and provided within the Construction, Environmental and Waste Management Plan at Appendix 9 and the following matters:

- No burning of cleared vegetation or other waste will occur on site during the construction phase. All waste will be removed to a licensed waste management facility.
- A secure, covered and bunded area will be provided on site for the storage of chemicals including flocculant.
- To manage noise during construction, mufflers on all equipment will be used and details of the builder / civil contractor will be erected on site during construction works.
- Further details regarding sedimentation retention ponds, sediment and erosion controls for the steeper areas and the weir / spillway will be submitted to Council prior to the issue of the construction certificate.

MM. Monitoring of runoff water quality will be undertaken during construction and for two years after construction of the subdivision to verify that the veracity of the proposed controls. A quarterly report will be provided to Council detailing the results of the monitoring during construction. If monitoring results exceed the relevant criteria on two consecutive occasions, the monitoring period will be extended to five years.

GEOTECHNICAL

- NN. All civil works required for the subdivision will be carried out in accordance with the recommendations of the Slope Stability Assessment prepared by Coffey (August 2006) and methodology for earthworks for remediation of on site excavation dated 20 February 2007.

CONTAMINATION

- OO. The proponent will remediate the site in accordance with the recommendations contained within the Environmental Site Assessment (Coffey, September 2006). Excavated contaminated material will be removed off site to landfill or placed under a road or other such element of the development to ensure the inaccessibility of the contaminated soil.

SECTION 94

- PP. The proponent will pay Section 94 developer contributions in accordance with Council's Section 94 plans, subject to negotiation with Council regarding material public benefit associated with the provision and embellishment of additional open space.
- QQ. The development will be serviced by sewer through upgrade of the SP3107 pumping station and rising main to the Lennox STW. These upgrades are in accordance with Council's DSP to upgrade infrastructure for the surrounding area and as such the proponent will seek credits for the provision of the upgrade.

CONSTRUCTION

- RR. The subdivision will be constructed in accordance with the Construction Environmental and Waste Management Plan prepared by Patterson Britton and Partners (September 2006).

SCHEDULE 4

MP 06_0002

PROPOSED 39 LOT RESIDENTIAL SUBDIVISION

1 SURVEY STREET, LENNOX HEAD

DRAFT DEVELOPMENT CONTROL PLAN

(SOURCE: ENVIRONMENTAL ASSESSMENT)



COASTAL GROVE LENNOX HEAD

DRAFT DEVELOPMENT CONTROL PLAN

SEPTEMBER 2006



mg planning

suite 11
340 darling street
balmain
2041
p 9555 7128
f 9555 6579

© 2006 MG Planning Pty Ltd

Reproduction of this document or any part thereof is not permitted without prior written permission.

CONTENTS

1.0	Introduction	4
1.1	Name of the DCP.....	4
1.2	Purpose of the DCP.....	4
1.3	Land to which the DCP Applies	4
1.4	Aims and Objectives	5
1.5	The Consent Authority	5
1.6	Monitoring and Review of the DCP	5
1.7	Variation to Planning Controls and Standards within the DCP	5
1.8	Relationship to other Plans and Documents.....	6
2.0	Development Guidelines	8
2.1	Desired Future Character.....	8
2.2	Dwelling Design	8
2.2.1	Siting	10
2.2.2	Setbacks.....	12
2.2.3	Dual Occupancy	13
2.2.4	Height	13
2.2.5	Roofs.....	13
2.2.6	Garages.....	14
2.2.7	Driveways	14
2.2.8	Private Outdoor Space	14
2.2.9	Fences.....	14
2.2.10	Landscaping	15
2.3	Building on Sloping Sites.....	15
2.3.1	Design and Construction	17
2.3.2	Earthworks.....	17
2.3.3	Retaining Walls	17
2.3.4	Specific Guidelines for Construction in Zone 1	18
2.3.5	Specific Guidelines for Construction in Zone 2	18
2.3.6	Specific Guidelines for Construction in Zone 3	18
2.4	Bushfire.....	19

1.0 Introduction

1.1 Name of the DCP

This Plan is known as Ballina Development Control Plan No. XX – Coastal Grove (the DCP).

1.2 Purpose of the DCP

The DCP has been prepared in accordance with Section 72 of the Environmental Planning and Assessment 1979 (the Act) and Clause Nos 16-24 of the Environmental Planning and Assessment Regulation 2000 (the Regulation). The DCP supplements the Ballina Shire Development Control Plan 2006 and will form an annexure to Chapter 16 – Lennox Head Residential and Tourist Development.

Council (the consent authority) is required under Section 79C of the Act to take into consideration relevant provisions of the DCP in determining development applications on the subject land.

1.3 Land to which the DCP Applies

The DCP applies to all land contained within the development area as identified in Figure 1 being land located at 1 Survey Street (Lot 2 in DP 622475), Lennox Head. The site is known as Coastal Grove.



Figure 1: Site to which the DCP applies

1.4 Aims and Objectives

The site specific aims and objectives for development within Coastal Grove are as follows:

- To provide a high quality residential development to meet the demand for housing within the Lennox Head area;
- To protect the inherent environmental qualities of the site including its visual character, landscape setting and riparian corridor; and
- To provide services and facilities to meet the needs of the future residential of the site.

Prior to granting development consent to any development application relating to the subject land, Council must consider the extent to which the application is consistent with the above aims and objectives and the development controls contained in this DCP.

1.5 The Consent Authority

Ballina Shire Council (Council) is the consent authority for local development within the Coastal Grove site.

1.6 Monitoring and Review of the DCP

Council is required to keep its LEP and DCPs under regular and periodic review to ensure that these Plans:

- (a) continue to be useful and relevant;
- (b) can be judged as to their effectiveness;
- (c) reflect an adequate and appropriate capacity for development; and
- (d) provide for the appropriate protection of the environment and natural resources.

This DCP shall be reviewed every five (5) years, or earlier, as considered necessary by Council.

1.7 Variation to Planning Controls and Standards within the DCP

Council may consider variations to the requirements of this DCP in certain circumstances. Requests for variations are required to be in writing and shall clearly demonstrate the reason(s) why the variation sought would not adversely impact on the environment or local amenity, would not erode the relevant standard and requirement; and that compliance with the objectives and requirements of the DCP are unreasonable or unnecessary in the circumstances of the case. Council gives no assurance that it will permit any variation(s) to the requirements of this DCP. Variations will only be considered in exceptional circumstances.

Consistent application of the provisions of the DCP will be given high priority by Council.

1.8 Relationship to other Plans and Documents

The provisions contained in the DCP are in addition to the provisions within SEPPs, REPs and the LEP. In the event of any inconsistency between the DCP and SEPPs, REPs, and/or the LEP, the SEPPs, REPs and/or LEP will prevail.

This DCP provides detailed development guidelines and controls to control the future development of housing on the subject land. It supplements the Part 3A Environmental Assessment for the site which provides for development of the site as follows:

- subdivision of the site into 45 residential lots ranging in size from 519m² to 1987m², fronting a new loop road (described as Roads No 1 and No 2) and cul-de-sac (described as Road No 3);
- the establishment of a landscaped open space corridor either side of the creek, including a children's playground; and
- the creation of two residue lots, one to the south of the site (lot 46) and one within the northern escarpment area (lot 48). These residue lots will provide for the protection and enhancement of significant remnant vegetation within the site.

The proposed development of the site is shown in Figure 2 below:



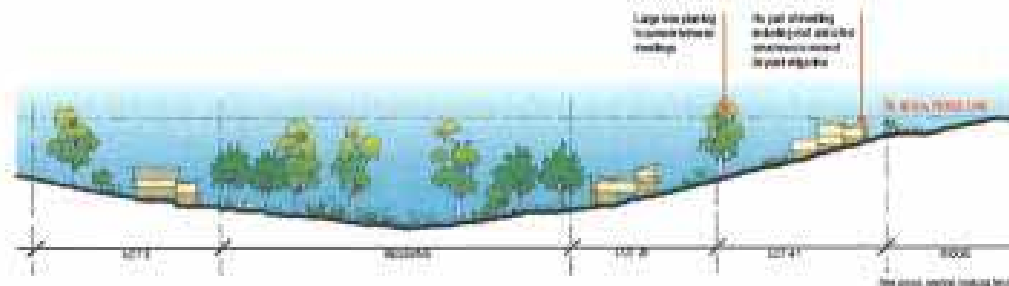
2.0 Development Guidelines

The purpose of this section is to provide Design Guidelines in the form of strategies and controls to guide the design, construction and management of the building environment of the site. The intention of the Guidelines is to ensure a cohesive high quality development and to ensure that the natural views and topography of the site are preserved.

2.1 *Desired Future Character*

The desired future character for Coastal Grove requires that any development on the site:

- Be of high quality
- Be appropriately sited within the natural context. The only new development to be seen above the existing hillside will be on the downward slope in the context of existing suburban development beyond.
- Be architecturally appropriate to the natural, sensitive coastal site.



(Source: Hassell, September 2006)

Architecture should be of:

- Lightweight structure and materials, prefabricated where possible.
- Be visually harmonious with existing built and natural features.
- Have minimum physical impact on the site by minimising cut and fill and hard paved surfaces.

In order to protect the rural coastal character of the site, specific height controls (refer section 2.2.4 below) have been applied to certain residential lots. In doing so the natural grassed hilltop running along the eastern edge can be preserved and views towards and from the site can be maintained.

2.2 *Dwelling Design*

All dwellings on the subject site are to be individually designed to suit the coastal character of the site and the particular characteristics of the individual lots. Figure 3 below illustrates some examples of architectural character and materials.



1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

100

Journal of Management Education

1

100

© 2004 Blackwell Publishing Ltd, *Journal of Internal Medicine* 255: 109–116

Abstract

© 2001 by Blackwell Science Ltd

Downloaded from <http://ajphaphysocpharm.sagepub.com/>

the authors are not aware of any other studies that have examined the effects of a single session of a group-based, self-help program on the health-related quality of life of people with chronic low back pain.

100

1

RESEARCH AND TRAINING IN

© 2000 Blackwell Science Ltd *Journal of Internal Medicine* 247: 399–405

100



Table 1



Figure 3: Appropriate Architectural Character and Materials

2.2.1 Siting

Dwellings should be sited to:

- Minimise site topographical adjustments and cut and fill;
- Follow the natural topography, i.e. split level design to reduce building undercrofts. Pile construction should be used in preference to slab on ground.
- So that ground floor levels are set 350mm above adjacent natural ground level and limited to 2500mm above natural ground on the downward slope.
- Maximise northern solar orientation to living areas and private open space.
- Minimise overshadowing.
- Minimise the impact on natural vegetation.
- Provide maximum visual and acoustic privacy between dwellings.
- Ensure that the main dwelling entry is readily identifiable from the street, and that dwellings adjacent to a public reserve address the open space by way of design, fenestration and dwelling entry.

Requirements

- 1 Dwellings shall be located on allotments generally in accordance with the indicative building footprints shown on Figure 4 below unless reasonable grounds can be provided for why they should be otherwise located.
- 2 Any retaining walls are to be constructed in rendered or coated masonry, boulders or dry stone. 'Cribwall' or treated pine logs will not be permitted.

Figure 4: Indicative Building Footprints (Source: Hassell, September 2006)

2.2.2 Setbacks

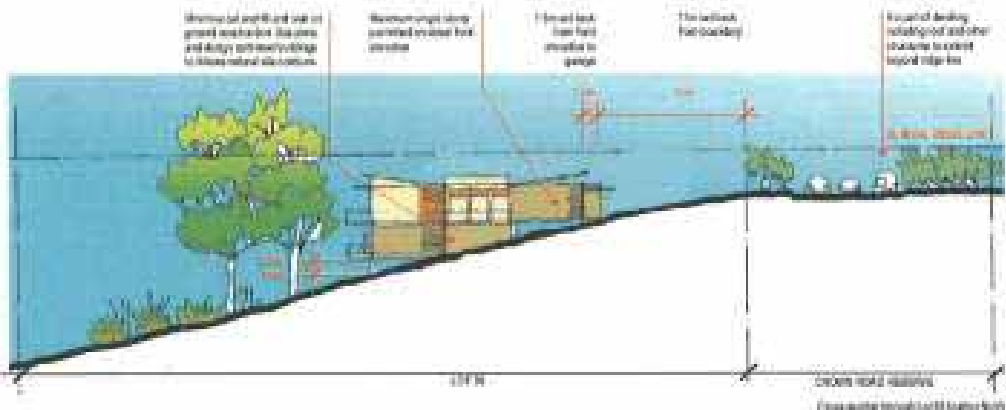
Requirements

- 1 Front dwelling setbacks to be a minimum of 6m from the lot boundary.



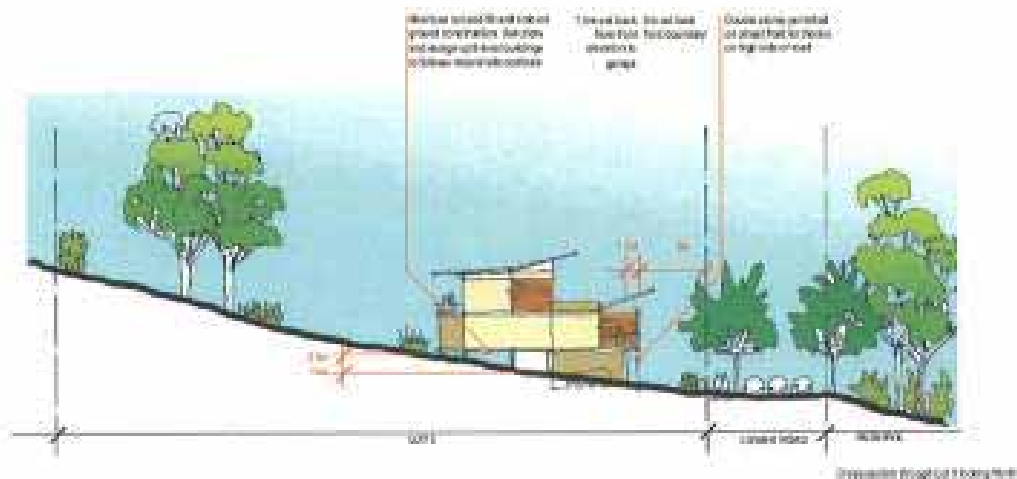
(Source: Hassell, September 2006)

- 2 Front dwelling setbacks for Lots 34 – 40 to be a minimum 11m to reduce the visual impact of these dwellings when viewed from the Coast and Coast Road (refer Appendix 1).



(Source: Hassell, September 2006)

- 3 Garages are to be setback a minimum of 1.5 m behind the front dwelling line.



(Source: Hassell, September 2006)

2.2.3 Dual Occupancy

Requirements

1. Dual occupancy development is only permitted on corner lot numbers 12, 13, 33 and 34.
2. Dwellings are to be attached unless site constraints such as slope inhibit this arrangement.
3. Dwellings are to comply with all other requirements of this DCP.
4. Dwellings should be designed such that each has a clear identifiable entrance visible from the street frontage.

2.2.4 Height

Requirements

1. The maximum height of any dwelling on site is to be a maximum of 2 storeys and 6.4m from natural ground level to the uppermost point of the ceiling.
2. Houses located on the low side of the street are restricted to a maximum of a single level above natural ground level at the front of the dwelling.

2.2.5 Roofs

Requirements

1. Roofs must be designed and appear as an integral part of the dwelling.
2. Generous eaves (greater than 300mm), overhangs and/or awnings are to be provided to all dwellings.
3. The use of guttering on dwellings is to be minimised.
4. Flat roofs will be permitted only where concealed behind parapets.
5. Conventional hipped roofs are to have a minimum pitch of 25 degrees.

6. Skillion roofs are permitted where they marry with the architectural design of the dwelling.

2.2.6 Garages

Requirements

1. Garages are not to occupy more than 50% of the building or site frontage of any allotment.
2. Garages are to be designed as an integral part of the dwelling.
3. Garages may not be larger than a standard double car garage in size. Triple garages are not permitted.
4. Detached garages, domestic garden sheds or ancillary storage facilities are permitted however rural scaled storage facilities such as barns, rural sheds and the like are prohibited.

2.2.7 Driveways

Requirements

1. Only one driveway will be permitted per dwelling.
2. One single driveway crossover, a maximum width of 3m is permitted, splaying to a maximum of 5.4m for double garages.
3. Materials for driveways are to be semi-pervious where possible. Painted or stencilled concrete is not permitted.

2.2.8 Private Outdoor Space

Requirements

1. Private Outdoor Space (POS) shall be designed to perform as an extension to the function of the dwelling.
2. POS should be located behind the front building line.
3. POS should be located for maximum solar access.
4. POS should be design to minimise overlooking and maximum visual and acoustic privacy.

2.2.9 Fences

Requirements

1. Front fences shall be a maximum of 1.2m in height.
2. Front fences shall be constructed of lightweight see through materials.

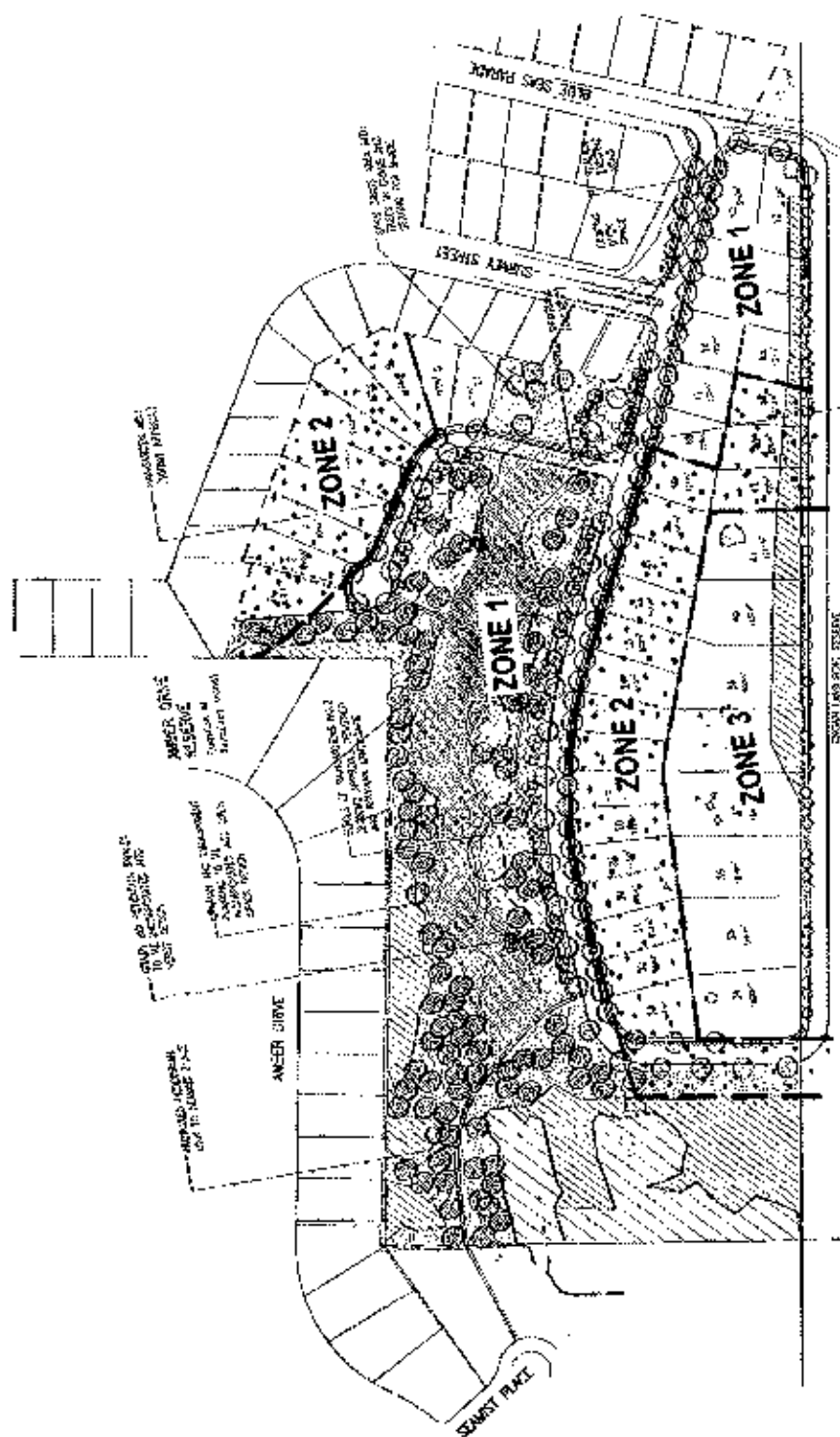


Figure 5: Assessed Slope Stability Zoning Plan (Source: Coffey Geosciences, August 2006)

2.3.1 Design and Construction

Requirements

1. The design and construction of all developments on site shall be carried out in accordance with good hillside practice as shown in Appendix 2 and the other controls outlined below.
2. All development should be designed by an engineer with appropriate experience and knowledge of the site conditions, using sound engineering principles and in accordance with the relevant Australian Standard or appropriate industry standard.
3. Foundations for residential structures should be designed and constructed in accordance with the recommendations and advice of AS2870-1995, 'Residential Slabs and Footings'. Footings should be founded outside or below the zone of influence of any existing or excavations (e.g. batter slopes, services trenches or retaining walls etc) where the structure loads have not been incorporated into the design of the excavation.

2.3.2 Earthworks

Requirements

1. The design and construction of all developments on site shall be carried out in accordance with the guidelines presented in AS3798-1996 "Guidelines on Earthworks for Commercial and Residential Developments".
2. Prior to the placement of any fill the proposed areas should be stripped to remove all existing uncontrolled fill, vegetation, topsoil, root affected or other potentially deleterious material. Following stripping, the exposed materials should be proof rolled to identify any wet or excessively deflecting material. Any such areas should be over excavated and backfilled with an approved select material. Fill should be compacted in layers to appropriate engineering specifications.
3. Where fill is placed on slopes in excess of 1V:8H (7 °), horizontal benches should be cut into the natural slope prior to placement of the fill.
4. Excavation and batter slopes should be designed for surcharge loading from slopes, retaining walls, structures and other improvements in the vicinity of the excavation.
5. Temporary slopes in soil strength materials up to 3m in height should be formed at no steeper than 1H:1V. Further geotechnical advice should be sought where cuts greater than 3m in height are proposed. Adequate drainage should be provided for all batter slopes. During rainfall periods, temporary slopes should have surface water on the high and low side diverted away from the batter face. The face may also need to be protected by the placement of plastic sheeting.
6. Unsupported permanent batter slopes in soils strength materials should be battered at no greater than 2H:1V. All batter slopes should be protected against erosion by appropriate plantings or fabric.

2.3.3 Retaining Walls

Requirements

1. Retaining walls should be designed by a suitably qualified engineer who is familiar with the site conditions.
2. The design of walls must take into account any surcharge from sloping ground or other loadings behind the wall. The design should incorporate an allowance for water pressures.
3. Adequate drainage should be provided for all retaining walls. Flushing point should be incorporated into the design of the perimeter drain to allow for maintenance.

2.3.4 Specific Guidelines for Construction in Zone 1

Requirements

1. Nil specific requirements other than general controls outlined above.

2.3.5 Specific Guidelines for Construction in Zone 2

Requirements

1. Flexible structures of timber or steel framed clad brick veneer or similar construction shall be used in this zone.
2. Footings for development in this zone should be founded within the natural undisturbed residual soils beneath all topsoil, uncontrolled fill or other deleterious materials.
3. Cut and fill in this zone should be limited to 2.5m in depth/height subject to a site/development specific geotechnical assessment. Appropriate batters and/or retaining walls designed by an engineer who is familiar with the site conditions should be provided. The expertise of the contractor, the nature of the fill material and the degree of monitoring and testing of the filling will control the footing design required for any structures placed on the fill.

2.3.6 Specific Guidelines for Construction in Zone 3

Requirements

1. Flexible structures of timber or steel framed clad brick veneer or similar construction shall be used in this zone.
2. Foundations should be design and constructed in accordance with AS2870-1996, with footings for developments founded at least 0.6m into the natural undisturbed residual soils or weathered rock beneath all topsoil, uncontrolled fill or other materials.
3. Cut and fill in this zone should be limited to 1.5m in depth/height subject to a site/development specific geotechnical assessment. Appropriate batters and/or retaining walls designed by an engineer who is familiar with the site conditions should be provided. The expertise of the contractor, the nature of the fill material and the degree of monitoring and testing of the filling will control the footing design required for any structures placed on the fill.

2.4 Bushfire

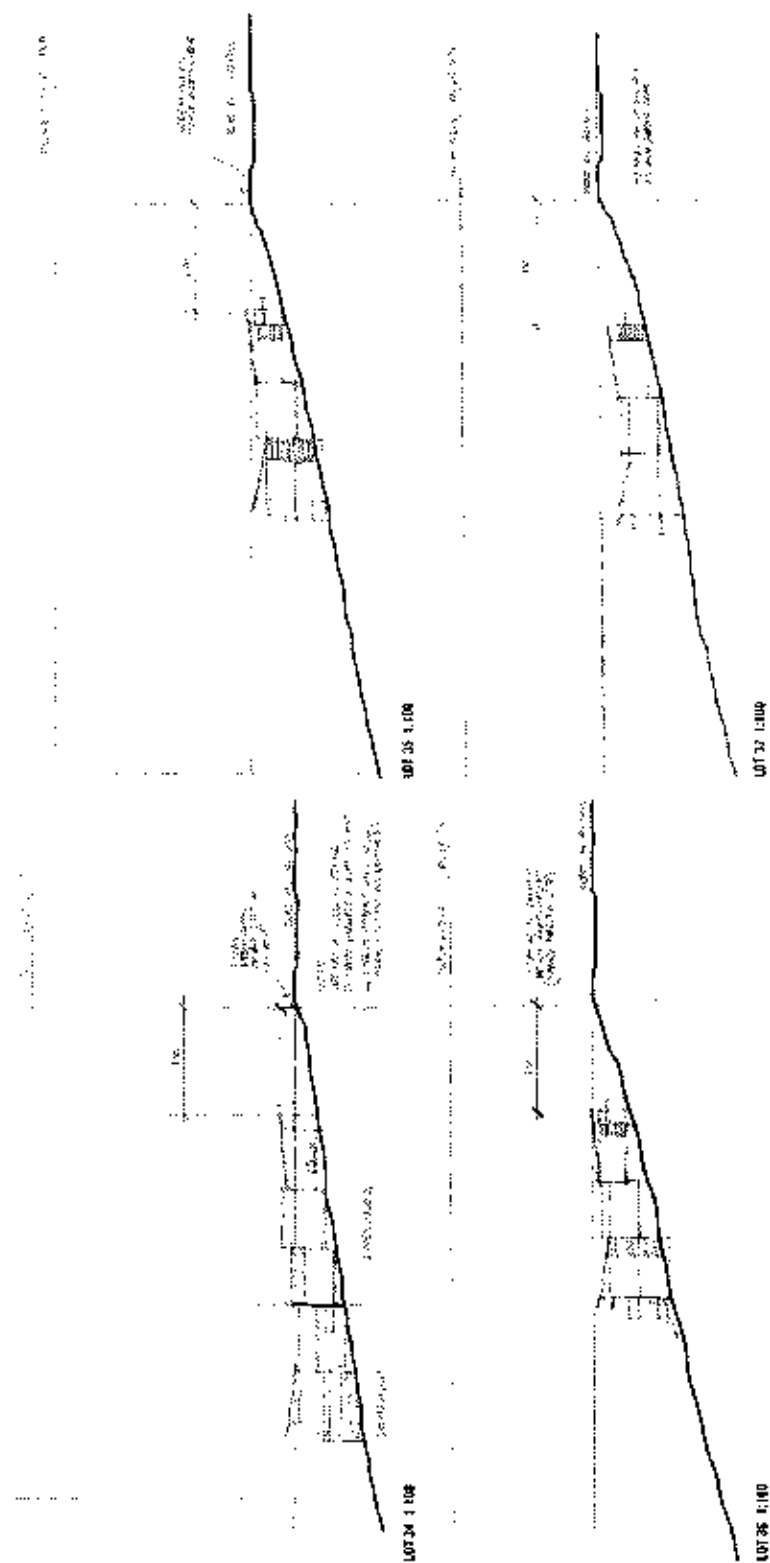
Requirements

1. Consistent with the Bushfire Hazard Assessment (Barry Eadie Consulting, July 2006) no specific construction requirements for the proposed dwellings are warranted.

APPENDIX 1

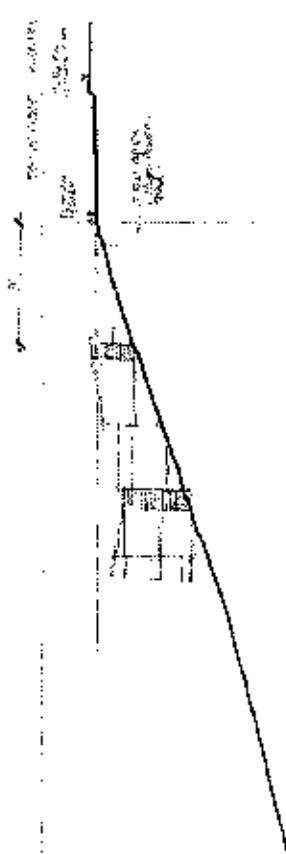
Sections for Steep Sites (Lots 34-40)

APPENDIX 8 - ADDITIONAL SECTIONS THROUGH
LOTS 34-40 SHOWING 11M SETBACK

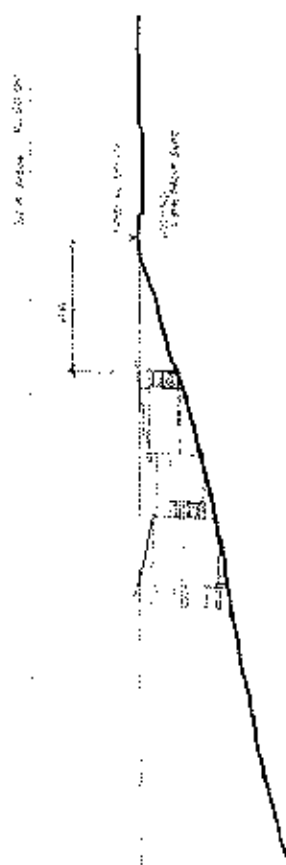


(Source: Hassell, September 2006)

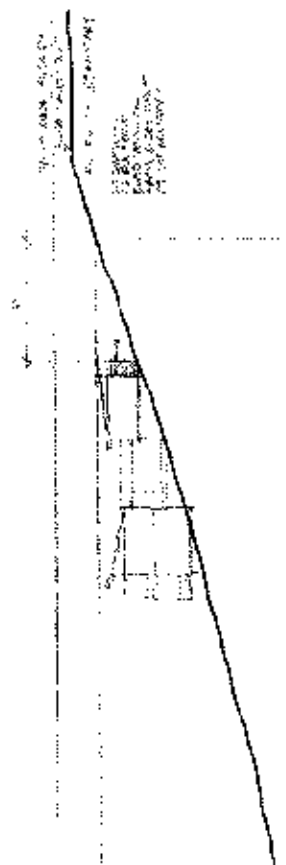
17/5/11



LOT 39 1:100



LOT 38 1:100



LOT 40 1:100

(Source: Hassell, September 2006)

SOME GUIDELINES FOR HILLSIDE CONSTRUCTION

GOOD ENGINEERING PRACTICE		POOR ENGINEERING PRACTICE
ADVICE		
GEOTECHNICAL ASSESSMENT	Obtain advice from a qualified, experienced geotechnical consultant at early stage of planning and before any works.	Prepare detailed plan and start site works before geotechnical advice.
PLANNING		
SITE PLANNING	Having obtained geotechnical advice, plan the development with the risk arising from the identified hazards and consequences in mind.	Plan development without regard for the risk.
DESIGN AND CONSTRUCTION		
HOUSE DESIGN	Use flexible structures which incorporate properly bedged brickwork, timber or steel frames, timber or panel cladding. Consider use of split levels. Use design for recreational areas where appropriate.	More plans which require extensive cutting and filling. Monolithic latrine structures.
SITE CLEARING	Retain natural vegetation wherever practicable.	Unnecessarily clear the site.
ACCESS & DRIVEWAYS	Satisfy requirements before for earth fill, retaining walls and drainage. Consult specifications for grades may need to be modified. Drive ways and parking areas may need to be fully supported on piles. Retain natural features wherever possible.	Excavate and fill for access across before geotechnical advice. Indiscriminate bulk up drains etc.
EARTHWORKS		
CUTS	Minimise depth. Support with engineered retaining walls or batter to appropriate slope. Provide drainage measures and erosion control.	Large scale cuts and berms etc. Unsupported cuts. Inadequate drainage requirements.
FILLS	Minimise height. Strip vegetation and topsoil and lay into natural slopes prior to filling. Use clean fill materials and compact to engineering standard. Batter to appropriate slope or support with engineered retaining wall. Provide surface drainage and appropriate subsurface drainage.	Loose or poorly compacted fill which if it fails, may flow a considerable distance reaching into property below. Block natural drainage lines. Fill over existing vegetation and topsoil. Include storm water vegetation topsoil berms, building stable site in fill.
POLE/POLEWAYS & DRAINAGE	Remove or stabilise boulders which may have unacceptable risk. Support rock faces where necessary.	Disturb or remove detached blocks of boulders.
RETAINING WALLS	Engineer design to resist applied soil and water forces. Found on rock where practicable. Provide subsurface drainage with wall backfill and surface drainage on slope above. Construct wall as close as possible to existing operation.	Construct a structurally unsound wall such as random flagging, brick or unconsolidated brickwork. Lack of subsurface drains and acceptance.
FOUNDATIONS	Found on rock where practicable. Use rows of piles or strip footings drilled up and down slope. Design for lateral creep processes if necessary. Backfill footing observations to ensure batter is in fact correct.	Found on topsoil, loose fill, boulders boulders or unstable cliffs.
SWAGING POLES	Engineer designed. Support on piles to rock where practicable. Provide with surface drainage and gravity drain under where practicable. Design for high soil pressure which may develop as split level walls are may be built on no lateral support on down hill side.	
DRAINAGE		
SURFACE	Provide at top of cut and fill slopes. Discharge to street drainage or natural water courses. Provide general falls to prevent blockage by debris and incorporate all traps. Line to maintain infiltration and make flexible where possible. Construct structures to dissipate energy at change of slope and/or direction.	Discharge at top of fill and cuts. Allow water to pool on broad areas.
SUBSURFACE	Provide filter around detention dams. Provide drain behind retaining walls. Use flexible pipelines with access for maintenance. Prevent failure of surface water.	Discharge road runoff into absorption trenches.
SEPTIC & SURFACES	Use quality regular pump-out or tankers or wet systems; absorption trenches may be possible in some areas if risk is acceptable. Storage tanks should be water-tight and adequately founded. Control erosion as this may lead to instability. Revegetate cleared area.	Discharge effluents directly onto and into slopes. Use absorption trenches without consideration of seepage risk. Failure to observe earthworks and drainage recommendations when landscaping.
INSPECTION AND MAINTENANCE BY OWNER		
OWNER'S RESPONSIBILITY	Check drainage systems: repair broken pipes, drains and leaks in supply pipes. When structural distress is evident see advice. If seepage observed, check for erosion and seek advice on consequences.	

FIGURE 3: SOME GUIDELINES FOR HILLSIDE CONSTRUCTION

This figure is an extract from LANDSLIDE RISK MANAGEMENT CONCEPTS AND GUIDELINES as presented in Australian Geomechanics, Vol 35, No. 1, 2008 which discusses the matter more fully.

[illegible]

This figure is an exhibit from LANDSHIFFER RISK MANAGEMENT CONCEPTS AND GUIDELINES as presented in *International Geomatics*, Vol. 33, No. 1, 2000 which documents the author's prior work.