Volume 1:

Annex I: Correspondence

Great Lakes
COUNCIL

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15 APR 2008

Tattersall Surveyors Pty Ltd
PO Box 54
RAYMOND TERRACE NSW 2324

Our Reference: MP06-0010
Your Reference: DH:PS

Contact: Mr Dean Hartmann
Telephone: 6591 7361

11 April 2008

ATTENTION: Bob Lander

Dear Bob

Re: Riverside, Tea Gardens – Street Hierarchy Plans

I write in response to the meeting between yourself, Council's Director Engineering Services - Mr Ron Hartley, Manager Transport Assets - Mr Greg Pitt and myself on 28 March 2008 in relation to the variations from Council's Design Specification of the proposed road hierarchy.

I advise that the road hierarchy plans submitted are adequate for further consideration, however it is imperative to note that any acceptance of the proposed road hierarchy is subject to inclusion of water sensitive urban design principles, which achieve no net increase in pollution and ensures the frequency of stormwater discharge from the site is consistent with current discharge frequency on average.

Yours faithfully

DEAN HARTMANN
Engineering Development Officer

Great Lakes
COUNCIL

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RECEIVED
31 JUL 2008
BY:

Mr Peter Childs
Crighton Properties Pty Ltd
PO Box 3369
TUGGERAH NSW 2259

Our Reference:
Your Reference: DB:KK

Contact: David Bortfeld
Telephone: 6591 7360

29 July 2008

Dear Peter

Re: Access Requirements to Pony Club Site - Tea Gardens

I refer to your letter received at Council on 3 June 2008 regarding the proposal to place a road on the boundary of the "Pony Club" site and your Riverside development.

Firstly please accept my apologies for the delay in responding, however your proposal has been the subject of discussion with other sections of Council.

Your most recent correspondence addresses Council's initial concerns however please note that any expenses incurred as a result of your proposal will have to be bourn by Creighton Properties Group Pty Ltd. Please keep in mind the area is zoned 2(f) and potential boundary adjustments will need to be documented. In addition, could you please advise me if this area is to be covered by "community title". If yes, then there are implications with regard to future responsibilities.

In the interim, should you require further information regarding this matter please contact me on 65917360.

Yours faithfully

DAVID BORTFELD
Manager Parks & Recreation

MIDCOAST WATER
ABN 33 274 464 218

Forster Office:
16 Breese Parade
Locked Bag 4000
Forster NSW 2428
Ph: (02) 6591 7543
Fax: (02) 6591 7555

23 April 2008
Ref: 178424

Tattersall Surveyors
PO Box 54
Raymond Terrace NSW 2324

Attn: Mr Bob Lander

RE: RIVERSIDE DEVELOPMENT – TEA GARDENS

Dear Bob,

In reply to your email of 21 April 2008 regarding a MidCoast Water response to the "issues paper" and "adequacy test" applied by the Department of Planning for the Riverside Application at Tea Gardens. MidCoast Water makes the following comments:

MidCoast Water requires the preparation of Water Supply & Sewerage Strategies to demonstrate how the proposed development can be provided with reticulated water and sewer services in accordance with our requirements, these strategies are to nominate any required extensions or upgrades to MidCoast Water infrastructure. In the absence of such strategies, MidCoast Water can only confirm that the Riverside development is proposed on land identified as future service area within our current servicing strategies.

As detailed in the MidCoast Water Sewerage Servicing Strategy (January 2003) the Hawks Nest Waste Water Treatment Plant (WWTP) is upgradeable to 16,000 Equivalent Population (EP) for the ultimate development of Tea Gardens/Hawks Nest, including North Hawks Nest. The ultimate development case includes an allocation of 960 Equivalent Tenements (ET) for the Riverside (Myall Quays) development. The ultimate loads from infill development within Tea Gardens/Hawks Nest as well as the known future growth areas were allocated within this existing strategy and are summarised below, note that the existing strategy does not include the connection of the North Port Stevens villages. Refer Doc: EKA-061/7, Appendix A: Table A2 for full details of load allocations.

	Existing Peak Load (2003)		Fully Developed Peak Load	
	ET	EP	ET	EP
Hawks Nest	1292	4245	1558	5724
Tea Gardens	862	2444	1174	3830
North Hawks Nest	0		400	1000
Myall Quays (Riverside)	0		960	2592
Myall River Downs	0		800	2160
Shearwater & Industrial	0		320	672
TOTALS	**2154**	**6689**	**5212**	**15978**

Under the existing Sewerage Servicing Strategy, MidCoast Water can only confirm that there is sufficient capacity in the Hawks Nest WWTP to cater for up to 960 ET within the Riverside development. The Equivalent Tenement allocation includes commercial & non-residential components in the total allocation.

MidCoast Water requires the preparation of an Integrated Water Cycle Management plan (IWCM) for the site. This plan would consider the water cycle and identify appropriate measures and end uses for the water resources available. One of the areas expected to be investigated is the use of reticulated recycled water for non-potable uses within residential premises. This investigation may identify alternate sources for effluent disposal that could relieve pressures on the WWTP and yield additional capacity within the WWTP. In the absence of an accepted IWCM, MidCoast Water is unable to make any comment "as to whether services for the use of reclaimed water will be provided".

Please contact me should you have any questions or to discuss the progression of an Integrated Water Cycle Management plan for the proposed development.

Yours faithfully

DAVID MCKELLAR
Development Engineer

Volume 1:

Annex J: Solar Access

The lots are predominantly orientated so that one axis is within 30 degrees east or 20 degrees west of true north and within 20 to 30 degrees from the east – west axis (refer to *Figure 4.2* of the EAR).

Lots outside the preferred axis orientation are identified in *Tables J.1* and *J.2. Table J.3* provides a summary of the total lots outside the preferred axis orientation. The proposal includes only eight lots with an area less than 400 square metres, being Lots 221 to 224 and Lots 227 to 230. These lots are along the east west orientation and therefore provide opportunities for future development to maximise solar access on the smaller allotments.

The lots which have an axis outside the preferred orientation in Precinct 2 are lots with a frontage to face Link Road 2, which extends north east / south west (refer to R.C. - 5 within *Volume 2*) and lots 52 to 57 and 63 and 64. In Precinct 1, Lots 321 to 324 are outside the preferred orientation. These lots are conventional in size with areas of at least 518 square metres, depths of approximately 32 metres to 37.1 metres and widths of at least 15 metres. This provides sufficient area for dwellings to be sited in a manner that allows for solar access to rear private open space.

In Precinct 2 Lots 67 to 70 have areas less than 450 square metres and are on an axis outside the preferred orientation. These lots however have a depth of 38 metres and are adjacent to a park to the north-west. As they are adjacent to an open space there is no potential for overshadowing to occur from that direction (refer to RC -12 within *Volume 2*).

Table J.1 Lots outside Preferred Axis Orientation – Precinct 1

Lot number	Size	Lot number	Size
320	*705*	324	*595*
321	*632*	326	*591*
322	*595*	327	*606*
323	*595*		

Table J.2 Lots outside Preferred Axis Orientation – Precinct 2

Lot Number	*Lot Size*	*Lot Number*	*Lot Size*
38	*755*	92	*532*
39	*578*	93	*551*
40	*578*	106	*833*
41	*755*	107	*602*
42	*557*	108	*710*
43	*568*	121	*634*
44	*568*	122	*672*
45	*568*	123	*624*

Lot Number	*Lot Size*	*Lot Number*	*Lot Size*
46	*568*	124	*606*
47	*568*	125	*712*
48	*668*	126	*710*
49	*512*	127	*530*
50	*512*	128	*518*
51	*668*	129	*643*
52	*568*	139	*643*
53	*568*	140	*586*
54	*568*	173	*594*
55	*568*	174	*573*
56	*568*	175	*515*
57	*557*	178	*528*
58	*790*	179	*515*
59	*613*	180	*554*
60	*613*	185	*559*
61	*790*	186	*550*
62	*790*	187	*563*
63	*613*	189	*551*
64	*613*	191	*519*
65	*790*	192	*506*
66	*562*	193	*514*
67	*437*	232	*539*
68	*437*	233	*583*
69	*437*	234	*573*
70	*437*	235	*826*
71	*562*	236	*557*
72	*653*	237	*539*
73	*660*	238	*779*
78	*621*	239	*569*
79	*634*	242	*606*
80	*641*	243	*776*
81	*613*	244	*570*
82	*602*	245	*710*
83	*528*		
84	*532*		

Table J.3 Summary of Lots outside Preferred Axis Orientation

Total lots outside preferred axis	91
Total lots in project plan	348
Percentage of lots outside preferred axis	26%

Siting of Dwelling

Lot orientation is only one of the tools to design for solar access. The other key element is dwelling placement.

As a guide, by applying the tools set out in *Solar Access for Lots Guidelines for Residential Subdivision in NSW* (NSW Sustainable Energy Development Authority), it is evident that the lots outside the orientation in *Figure 4.2* can accommodate minimum solar access zones and allow solar access to glazing. The SEDA guide incorporates two solar access zones, the flexible solar access zone (FSAZ) and the minimum solar access zone (MSAZ).

The FSAZ is the part of the lot that may not be built on, there by allowing solar access to glazing and private open space. The MSAZ is the minimum area of the FSAZ that may not be built on. Once the MSAZ and the dwelling have been sited the FSAZ no longer applies.

The FSAZ and the MSAZ areas are located at the rear of dwellings. *Table J.4* sets out the dimensions of the FSAZ and MSAZ.

Table J.4 Dimensions of Solar Access Zones

Storey height to North	Minimum depth of FSAZ	Minimum width of FSAZ	Minimum width of MSAZ
0-5% slope to the south single storey to the north	20m	3.3m	8m
0-5% slope to the south double storey to the north	20m	6.9m	8m

(Source: SEDA)

The lots fronting Link Road 2 are sufficiently deep and wide enough to easily accommodate the minimum solar access zone, which would be 3.3m x 8m for future single storey dwellings or 6.9m x 8m for two storey dwellings. The lots are also wide enough to allow the siting of a dwelling on the lot to accommodate the FSAZ.

Drawings R.C. - 43 to R.C. - 48 provided in *Volume 2* show that future dwellings can be sited so that primary open space areas have good solar access. In addition, the plans show the first floor components of each dwelling type is located to minimise overshadowing of the private open space on the lot or adjoining lots.

Volume 1:

Annex K: Cost Estimates

TATTERSALL SURVEYORS

13th November 2008

OUR REF: 201479-L009013

Director of Planning
Crighton Properties Pty Ltd
DX 7215
Gosford

Attention: Peter Childs

RE: RIVERSIDE CONCEPT AND PROJECT APPLICATION COSTINGS

Further to your request for an estimate on the Riverside Concept and Project Application costings, please find attached the following detailed analysis of the estimated costs for the development.

In this regard the following qualifications are made:-

1. The attached sheets have been prepared by Tattersall Surveyors Engineering Section and specific costs are current as at today.

2. Details of overall measurements have been made from the current design sheets forwarded with the Application.

3. Costings are compliant with the current designed plans as prepared by Tattersall Surveyors and or are costings that could be reasonably be expected for items that have yet to be designed (i.e. water and sewer designs).

4. Estimates of costs have been based on our long term local knowledge, generally in Tea Gardens and specifically in residential and commercial development at Riverside.

Should you require any further information please do not hesitate to contact this office.

Kind regards
TATTERSALL SURVEYORS PTY LTD

Bob Lander
Project Manager

encl.

DEVELOPMENT CONSULTANTS IN ENGINEERING, SURVEYING AND PLANNING

Tattersall Surveyors Pty Limited ABN 41 003 509 215
2 Bourke Street, RAYMOND TERRACE 2324 **All mail to**: PO Box 54
Telephone: (02) 4987 1500 **Fax**: (02) 4987 1733 **Email**: attat@hotkey.net.au
DX 21403 RAYMOND TERRACE

TATTERSALL SURVEYORS

Item	Quantity	Unit	Rate $	Total
Riverside Project Application - 381 Lots				
Roads	11,200	m	890	9,968,000
Bulk Earthworks Cut	460,200	m3	9	4,141,800
Bulk Earthworks Fill	422,200	m3	9	3,799,800
Drainage	6,530	m	340	2,220,200
Drainage Pits	315	unit	1560	491,400
Gravity Sewer	4,000	m	250	1,000,000
Vacuum Sewer	6,800	m	320	2,176,000
Water Supply	11,200	m	380	4,256,000
Electrical	381	Unit	3750	1,428,750
Landscaping	1	Unit	1,800,000	1,800,000
			Total =	**31,281,950**
Residue Riverside - 599 Lots				
Roads	8,850	m	790	6,991,500
Bulk Earthworks Cut	13,400	m3	9	120,600
Bulk Earthworks Fill	159,300	m3	9	1,433,700
Drainage	5,250	m	340	1,785,000
Drainage Pits	255	unit	1560	397,800
Gravity Sewer	3,800	m	250	950,000
Vacuum Sewer	6,400	m	320	2,048,000
Water Supply	8,850	m	380	3,363,000
Electrical	599	Unit	3750	2,246,250
Landscaping	1	Unit	1,500,000	1,500,000
			Total =	**20,835,850**
Eco-Tourist Village - 65 Lots				
Roads	4,780	m	790	3,776,200
Bulk Earthworks Cut	31,400	m3	9	282,600
Bulk Earthworks Fill	48,500	m3	9	436,500
Drainage	2,800	m	340	952,000
Drainage Pits	135	unit	1560	210,600
Gravity Sewer	2,400	m	250	600,000
Vacuum Sewer	4,100	m	320	1,312,000
Water Supply	4,780	m	380	1,816,400
Electrical	65	Unit	3750	243,750
Landscaping	1	Unit	1,500,000	1,500,000
			Total =	**11,130,050**
			Overall Civil Construction Total :	**63,247,850**
Additional Works				
Clubhouse No 1				2,000,000
Clubhouse No 2				3,000,000
Clubhouse No 3				2,450,000
Clubhouse No 4				2,450,000
			Total Application costs=	**73,147,850**