Haley Rich - Submission objecting to Jacfin Horsley Park project 10_0129 and 10_0100 - Revised attachment

From:	"Theresa Farrugia" <theresaandpat@bigpond.com>
To:	<plan_comment@planning.nsw.gov.au>
Date:	5/22/2011 9:39 PM
Subject:	Submission objecting to Jacfin Horsley Park project 10_0129 and 10_0100 - Revised attachment
CC:	'"Haley Rich'" <Haley.Rich@planning.nsw.gov.au>
Attachments:	Dept of Planning v.2.doc; Att 3 - Visual Impact consultant's report.pdf; Att 2 - Survey.pdf; Donations Declaration0001.pdf; Donations Declaration0003.pdf; Donations Declaration0002.pdf; Att 4 -weather data p.2.jpg; Att 4 - weather data.jpg; Att 1 - Concept Plan.jpg

To: Major Project Assessment
Department of Planning
Attention: Haley Rich

Good afternoon,

Attached please find our submission letter, together with supporting attachments, in relation to the Jacfin Horsley Park Industrial Estate Project. This replaces my previous message which had an incorrect attachment with it.

A signed hard copy will be delivered on Monday before the deadline.

Could you please confirm that this email has been received?

Thanks and regards,

Theresa and Patrick McHale
38-40 Greenway Place
Horsley Park NSW 2175

LOT 72 DP 1050228

GRID NORTH

LOT 71
DP 1050228

LOT A

BDY=137.63

BDY=68.35

BDY=206.735

BDY=114.45

BDY=111.25

BDY=204.465 (NOT TO SCALE)

BDY=74.54 (NOT TO SCALE)

88.05
87.31
86.95
86.47
85.53
85.08
85.44
86.53
87.44
87.95
88.23
89.21
89.42
89.56

[ABOUT 106.4]

[ABOUT 63.35]

[ABOUT 45 FACE OF TREE TO BOUNDARY]

METAL SHED

VERANDAH

RL 91.60 PAVERS

PORTICO

ONE AND TWO STOREY BLOCK RESIDENCE No.38

SPA AREA

RL 99.0 CROWN

RL 84.4 GROUND

RL 95.72 TILES

TWO STOREY BRICK RESIDENCE No.33-37

VERANDAH

[T]

[C]

ARC=24.29

ARC=1113

ARC=16.895

RL 88.20 TBM NAIL

89.87 +CROWN

89.26 +CROWN

89.60 +CROWN

90.22 +CROWN

GREENWAY PLACE

LOT 6
DP 242752

NOTES

- THE TITLE BOUNDARIES OF THE PROPERTY HAVE NOT BEEN SURVEYED.
- DIMENSIONS AND AREAS WHERE SHOWN HAVE BEEN TAKEN FROM DP 1050228 AND DP 242752.
- SERVICES HAVE NOT BEEN SHOWN.
- PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF UNDERGROUND SERVICES NOT SURVEYED.
- THIS DETAIL SURVEY IS NOT A "SURVEY" AS DEFINED BY THE SURVEYING AND SPATIAL INFORMATION ACT, 2002. IF ANY CONSTRUCTION IS PLANNED IT WOULD BE ADVISABLE TO CARRY OUT FURTHER SURVEY WORK TO DETERMINE THE BOUNDARY DIMENSIONS.
- TREE CANOPY IS INDICATIVE ONLY.
- THESE NOTES ARE AN INTEGRAL PART OF THE PLAN.

[C] - RIGHT CARRIAGEWAY 6 WIDE AND VARIABLE WIDTH (DP 1050228)
[T] - EASEMENT FOR TRANSMISSION LINE 30.48 WIDE (VIDE K273082)

DIAL 1100 BEFORE YOUR DIG

DECLARATION

NO RESPONSIBILITY WILL BE ACCEPTED BY T GRABARA & ASSOCIATES IF ANY PART OF WHOLE OF THIS PLAN HAS BEEN ALTERED, VARIED, MODIFIED, DELETED, ADDED OR INTERPOLATED IN ANY WAY.

T GRABARA & ASSOCIATES
A DIVISION OF TRAZTAR PTY LTD ACN 002 207 356
SURVEYORS & DEVELOPMENT CONSULTANTS
No.4/188-190 QUEEN STREET, ST MARYS NSW 2760
PO BOX 50 ST MARYS NSW 1790 DX 29810 ST MARYS
Phone: (02) 9833-2733 Facsimile: (02) 9623-0131 Email: tga@grabara.com.au

REFERENCE: 3769
DATE: May 12th, 2011
LOCALITY: HORSLEY PARK
LGA: FAIRFIELD/PENRITH
SCALE: 1:400
DATUM: AHD (ORIGIN OF LEVELS SSM 15573 RL 83.263m)
SHEET 1 OF 1 SHEETS
REVISION 3769-LEV

PLAN OF LEVELS & APPROXIMATE LOCATIONS OF FEATURES AT LOT 71 DP 1050228 & LOT 6 DP 242752 BEING No.38 & No.33-37 GREENWAY PLACE, HORSLEY PARK & ON LOT A DP 392643 FOR Mr AND Mrs McHALE.

Proposed Employment Land Development

Jacfin, Burley Road, Horsley Park Project

Objection on behalf of:

Theresa and Patrick McHale, 38-40 Greenway Place, Horsley Park

& Tony and Linda Micallef, 33-37 Greenway Place, Horsley Park

by Dr. Richard Lamb

May 2011

1/134 Military Road, Neutral Bay, NSW 2089 PO Box 1727 Neutral Bay NSW 2089
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Table of Contents

1.0 Introduction

1.1 Purpose of this Report

Theresa and Patrick McHale and Tony and Linda Micallef, proprietors of 38-40 and 33-37 Greenway Place, Horsley Park respectively, commissioned this report. The report considers the potential for industrial development on the subject land owned by Jacfin, Lot A in DC 392643 Burley Road, Horsley Park (the subject land) to impact on the amenity and views of their residential land, which directly adjoins the subject site along the south eastern boundary.

An assessment of the subject land was conducted on the basis of field work and observations carried out on 9 May 2011, on which date I also took some photographs of the subject land as seen from the McHale property and made observations and took photographs from Greenway Place. I was assisted by photographs provided to me by Ms Theresa McHale, taken from both properties on my direction, and by a survey undertaken by T Grabara and Associates, Surveyors, commissioned by the McHales to establish the relative levels of the viewing places in both properties.

1.2 Relevant Experience

I am a consultant specialising in visual impacts and landscape heritage matters. I have 30 years of experience in landscape planning and heritage conservation and have published extensively in local and international journals on perception, aesthetic assessment and landscape management.

I am very familiar with the immediate and the wider locality having carried out a number of consultancies for Penrith Council and for private clients within land in, or in the vicinity of land in the Western Sydney Employment Area and the landscapes, localities, settlements and transitional changes that have occurred and are planned to occur within the relevant part of the Penrith and Fairfield LGAs.

I have extensive experience in providing expert evidence to the Land and Environment Court of New South Wales and the Planning and Environment Court of Queensland representing both private and government stakeholders in merits cases and cases regarding visual impact and urban design, landscape assessment and scenic protection planning in more than 150 matters.

A comprehensive company profile and curriculum vitae for Dr Lamb can be viewed at www.richardlamb.com.au.

1.3 Documents Consulted

- Preliminary Environmental Assessment prepared by JBA Planning, dated July 2010.
- Environmental Assessment Report (EAR) Vols. 1 and 2, prepared by JBA Planning, dated March, 2011.
- Relevant Appendices to the EAR, being:
- Appendix B (Control Plan: Topography Map)
- Appendix H (Compliances Tables)

- Appendix J (Plans 1 and 2)
- Appendix L (Site Development Guidelines)
- Appendices Q1 and Q2 (Landscape), and:
- Appendix T (Visual Assessment).
- State Environmental Planning Policy (Western Sydney Employment Area) 2009.
- Director General's Requirements (DGRs), dated 5 August 5, 2010.
- Report to Outcomes Committee of Fairfield Council dated 10 May 2011, Item Number 81.
- Survey Plan Reference 3769, by T Grabara and Associates, Reference 3769, dated 12 May, 2011.

1.4 Background

The subject land is zoned to permit the proposed use and is subject to the provisions of SEPP (Western Sydney Employment Area) 2009 (SEPPWSEA).

This report concerns the application for approval of a Concept Plan (10-0129), to establish an industrial and employment park and associated infrastructure on the subject land, which includes a Project Application (10-0130) for Stage 1 of the development in the north west part of the subject land. That application is not considered in detail in this report because it does not have significant potential visual impacts on the properties that are the subject of this report.

This report specifically addresses the assessment of visual impacts in the Concept Plan application relative to the residential properties of the McHales and Micallefs.

This report considers the relevant planning controls and policy and specifically considers whether the Application satisfies the statutory provisions that apply and the Director General's Requirements for assessing the potential environmental impacts of the proposed development, with regard to visual impacts and the visual amenity of adjacent residential land.

1.5 Statutory Provisions relevant to Assessing the Application

1.5.1 Provisions of SEPPWSEA

Clause 21

Clauses 21 and 23 of SEPPWSEA are of special relevance to visual impacts.

Clause 21 states that the consent authority must not grant consent to development on land to which SEPPWSEA applies unless it is satisfied that:

(a) building heights will not adversely impact on the amenity of adjacent residential areas, and

(b) site topography has been taken into consideration.

Summary of Findings in relation to Clause 21 of SEPPWSEA

Clause 21(a)

Building heights will adversely and severely impact on the amenity of the adjacent residential area in which the McHale and Micallef residential properties exist. The impacts of future building heights have not been adequately addressed in the application.

Clause 21(b)

The site topography has not been taken into consideration in the proposed development. The properties have views over the site as a result of their levels relative to it and the downward sloping topography of the subject land.

Clause 23

Clause 23(1) of SEPPWSEA, Development adjoining residential land, applies to the subject land, because it is within 250m of land of my clients which is zoned for residential purposes. Relevant to visual impacts and amenity, Clause 23(2) states that the consent authority must not grant consent to development on land to which this clause applies unless it is satisfied that:

(a) wherever appropriate, proposed buildings are compatible with the height, scale, siting and character of existing residential buildings in the vicinity, and

(b) goods, plant, equipment and other material resulting from the development are to be stored within a building or will be suitably screened from views from residential buildings and associated land, and

(c) the elevation of any building facing, or significantly exposed to view from land on which a dwelling house is situated has been designed to present an attractive appearance, and

(e) the development will not otherwise cause nuisance to residents, by way of hours of operation, traffic movement, headlight glare, security lighting or the like, and

(g) the site of the proposed development will be suitably landscaped, particularly between any building and the street alignment.

Summary of Findings in relation to Clause 23

Pursuant to Clause 23(1), the proposal does not recognise the constraint imposed by the need to consider impacts on residential land within 250m of the subject land. The assessment is inadequate and it considers only a small sample of existing residences.

(a) the proposed buildings are not compatible with the height, scale, siting and character of existing residential buildings in Greenway Place.

(b) there is no proof that items capable of causing visual impacts will be suitably screened from views from residential buildings and associated land.

(c) the montages presented show no response to the requirement that the elevations exposed to the residential properties must be designed to present an attractive appearance,

(e) there is no proof that traffic movement, headlight glare, security lighting or the like will not have significant impacts on existing and future residences; the buffers are inadequate and not appropriately landscaped.

(g) there is no overall landscape plan that shows that the development will mitigate impacts on Greenway Place.

1.5.2 Director General's Requirements

The General Requirements of the DGRs call for:

1 under the second dot point, for the EAR to include a detailed description of the project, including a consideration of alternatives.

2 under the fourth dot point, it requires a detailed assessment of key issues that includes:

a description of the existing environment using sufficient baseline data,

an assessment of the potential impacts of the project, including any cumulative impacts, taking into consideration any relevant guidelines, policies, plans and statutory provisions, and

a suitable assessment (of other issues specified below), outlining the measures that would be implemented to minimise the potential impacts of the project (my parentheses).

Summary of Findings in relation to General Requirements of the DGRs

1 there is no consideration of alternatives as regards limiting the visual impacts on Greenway Place residents.

2 there is inadequate assessment of the relevant key issues, including:

the description of the existing visual environment,

the assessment of the potential impacts of the project,

the measures that would be implemented to minimise the potential impacts of the project will be ineffective and the outcome is unacceptable.

DGRs Key Issues : Site Layout and Design

The reference under dot point four of the General Requirements of the DGRs to matters below, to take into account, is to Key Issues. These relevantly include Site Layout and Design, and Visual.

Site Layout and Design, among other things not directly relevant to visual impacts, require:

details of subdivision of the site, including site coverage, lot sizes and positioning of lots;

details of how the proposed layout and development of the project would be undertaken to minimise potential impacts on nearby sensitive receivers;

details of a development control plan that includes (relevant to visual impacts) controls for, but not limited to, building heights and design, setbacks, floor space ratio and landscaping.

Summary of Findings in relation to Key Issue Site Layout and Design of the DGRs

The subdivision of the southern part of the subject site has not been considered so as to minimise impacts on nearby sensitive receivers (ie. residential properties and existing and future residences). The layout does not minimise impacts of the location, height and setbacks of buildings on residents in Greenway Place.

There is no development control plan proposed which could provide some certainty as to the environmental and visual impact performance of the development in the future. The building heights, designs, setbacks, FSR and landscaping are unknowns.

DGRs Key Issues : Visual

Key Issue Visual requires:

- a detailed description (including photomontages) of the measures to be implemented to:
  - ensure the project has a high design quality and is well presented,
  - manage the bulk and scale of the buildings,
  - minimise the visual impacts of the project, particularly from any nearby residential properties, and
- a detailed landscaping, lighting and signage strategy for the whole site.

Summary of Findings in relation to Key Issue Visual of the DGRs

- there is no detailed description of the measures to be implemented and the montages are not representative of what is proposed and are unsatisfactory:
  - there is little evidence that design quality has been a consideration,
  - the bulk and scale of the buildings have not been managed adequately,
  - the measures proposed to minimise the visual impacts of the project from nearby residential properties are inappropriate, and unrealistic.
- there is, as far as I am aware, no detailed landscaping, lighting and signage strategy for the whole site.

Map 1: Subject Site in relation to Residences in Greenway Place

Approximate location of subject site

Residences in Greenway Place

Not to Scale

Map2: Immediate Setting of the McH and Micallef Properties

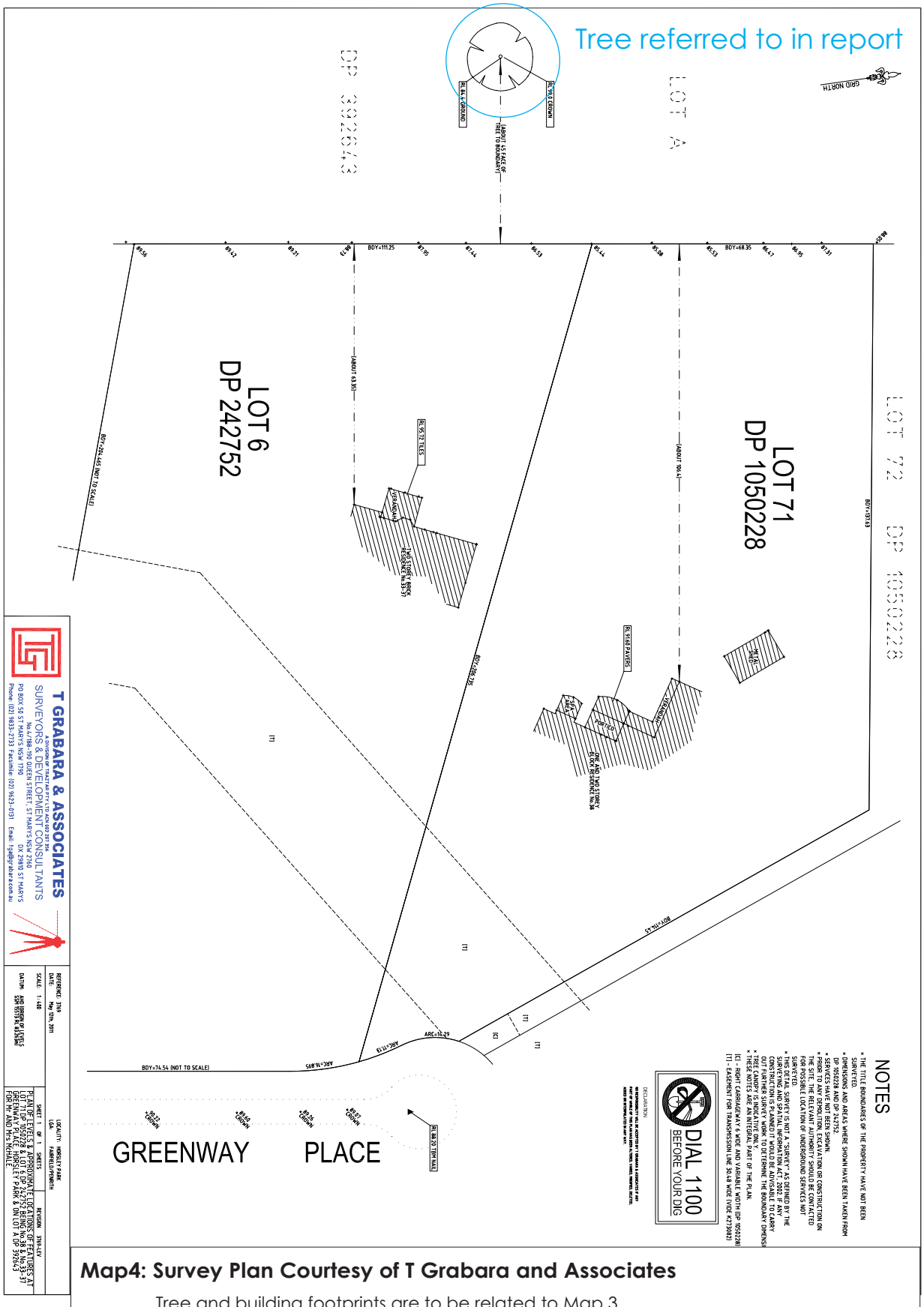
View Orientation of Residences' Primary Living areas

Not to Scale

Map3: Detail of Setting of the McHale and Micallef Properties

Approximate location of subject site

Not to Scale



Map4: Survey Plan Courtesy of T Grabara and Associates

Tree and building footprints are to be related to Map 3

Plate 1
View west from the Micallef residence
The scale tree is in the centre of the view

Plate 2
View southwest from the McHale residence
The scale tree is on the left side of the view

2.0 Visual Assessment

I undertook a more detailed analysis of the visual context and character of the subject land when viewed from Greenway Place and my clients' properties that are relevant to the application. This assessment follows.

2.1 Character of the Subject Site

The southern part of the subject land is highly visible from Greenway Place and the residences on the west side of the street in particular, including those of the McHales and Micallefs. The northern part, including the site of the Stage 1 application is not of significant visibility. The land is cleared of any former native vegetation and is grazing land in character.

The land slopes generally to the west. A ridge runs to the west and northwest approximately parallel to the southern boundary of the site. The intrinsic scenic quality of the land is moderate. The northern boundary of this part of the land is shared with the nearby quarry, which features a tall, linear, vegetated and steep sided bund wall.

The subject land is predominantly of rural character at present. The existing immediately adjacent residential context is provided by existing development established in Greenway Place on the southeast edges of the subject land.

2.2 Visual Context

The adjacent residential land in Greenway Place generally enjoys panoramic views over the subject land toward the Ropes Creek valley to the west and the Blue Mountains Plateau beyond. The views over the land are not significantly restricted by the ridge inside the subject land that is parallel to its southern boundary. The proposal is to remove the natural topography of the view and replace it with flat land in cuts of variable depths and with very large buildings instead, over and between which there will be little in the way of access to the view beyond.

2.3 Visual Resources of the Subject Land

The subject land is a significant visual resource to the public in Greenway Place and to private residential land owners. Future development of the subject land is appropriate given the zoning and strategic significance of the locality generally. It can be compatible with retaining critical aspects of that resource, but requires a closer examination of the nature of the resource and constraints on its recognition and management in the future.

I consider that :

- The primary existing visual resource value of the subject land is the undeveloped backdrop/ foreground it provides to significant views in the public and private domain.
- The second primary resource value of the subject land is to maintain a sense of separation between the residential land and the perception of expanding industrial development. The residences on Greenway Place will be faced with a totally transformed scenic quality that removes the natural topography in toto. The landscape scenic quality will decrease from a present moderate quality foreground and high quality background, producing a significant and valuable composition, to a low quality industrial view dominated by large buildings,

roofs and hard surfaces.

- The visual quality and character of the existing slopes and ridge are considered to be a significant resource to be protected and promoted to achieve each of the above implicit aims, ie. remain an undeveloped backdrop, a separating element between the residential area and industrial development beyond and an interface that is compatible with the competing values across the boundaries of both kinds of land.

2.4 Lack of Sensitivity of the Application to the Scenic Resources

The EAR acknowledges the sensitivity of the subject land in relation to the residential users in Greenway Place (Figure 39 at page 70), but is insensitive to this assessment. Rather than acknowledging that this sensitivity demands a solution that is relevant to the constraints that occur along the boundary, it takes a gross solution instead, that ignores the topography and proposes extensive cuts and earthworks across the entire site.

A reasonable proposal would consider how to locate development in a way that satisfies the requirements of Clauses 21 and 23 of SEPPWSEA without destroying the amenity and views of the directly adjacent residential properties. The sensitivity that is the highest on the plan at Figure 39 is land that is proposed to be cut in the Areas of Cut and Fill Plan (Figure 27 at Plate 33 of the EAR).

It appears, rather than being a matter to be taken into account in providing a sensitive outcome, that the topography of the subject land has been considered no more than a constraint on providing a large area of flat land for industrial units in the application. The fact that the land adjacent to residences is sensitive did not produce an outcome sensitive to the existing landform, scale of the buildings, or landscape character.

The cut and fill diagram shows virtually none of the site will escape from landform modification. However since the original topography is shown at one scale and contour interval (Figure 13) and the cut and fill is shown at another (Figure 27), while there is no final landform plan that shows the internal topography or the cuts and fills that are presumably around the perimeters, it is difficult to ascertain precisely what is proposed.

With regard to the adjacent residential properties above the site in Greeway Place, the solution to visual impacts is not to provide a buffer of any substance but to cut the site and sink the buildings into it. The buildings are of the maximum heights permissible and their footprint sizes, locations and scale do not relate to the heights, scales, siting or character of the adjacent existing and future residential land adjacent. The application does not satisfy the specific requirements of Clause 23(2)(a) of SEPPWSEA in my opinion.

Leaving aside the issue of whether deep cuts are appropriate at the eastern boundary at all, for the moment, the depth of cut shown on the plans does not appear to accord with the descriptions in the EAR. The EAR claims that building footprints are intended to be up to 13-18m below the levels of dwellings in Greenway Place. The stated intention is to make certain that views over the buildings are retained from residential properties.

My interpretation of the contour and cut and fill plans with regard to the McHale and Micallef residences however, appears to indicate that the nearest buildings will be springing from as little as 3-4m below the level of view from the prime living area of the dwellings and virtually on-grade

with the rear boundary of the McHales' yard.

The attached survey plan by T Grabara and Associates shows the floor levels of primary living areas of each of my clients' properties. As a guide to what the likely effect on their views will be, the location and height of a prominent residual ironbark tree in the subject land was also surveyed. The tree is visible in the photographs attached, which depict views from inside each property.

Taking each property in turn:

McHale, 38-40 Greenway Place

The rear terrace of the McHale residence has a level of RL 91.60. The building pad for the nearest building has an approximate level of RL 85. The base of the tree in the photographs and on the survey is at RL 84.4 and it has a canopy height of approximately RL 99.0, giving a height above natural ground level of approximately 14.6m.

In the photographs taken by myself and Ms McHale, the tree can be seen to extend above the horizon of the Blue Mountains Plateau in the view line. The tree is about 45m inside the boundary of the subject land and is therefore inside the setback (that is, it is inside the building zone). Relative to the back boundary of the McHale land, the pad of the nearest building is at approximately the same level as the base of the tree.

As such, the 14m height of a building is approximately the same as the tree. The buildings will block the view from the terrace toward the Ropes Creek valley and the Blue Mountains Plateau beyond. The view blocking effect would be greater for a standing viewer in the rear yard, or a seated viewer inside the residence itself.

Micallef, 33-37 Greenway Place

The rear verandah of the Micallef residence has a level of RL 95.72. The Micallef residence has a more expansive view in a horizontal sense than the McHale enjoy. As before, the building pad of the nearest building is at approximately RL 85.

In the photographs, taken by Ms McHale from a standing position on the verandah, the same tree as a scale object can be seen. The canopy of the tree is as high as the mountain horizon in the background. On the basis of the same logic used above, it is clear that the building proposed in the application will block the view toward the Mountains for a standing viewer at the rear of the dwelling, contrary to the claims in Volume 2 of the EAR and in Appendix T. The view blocking effect would be greater for a standing viewer in the rear yard, or a seated viewer inside the residence itself.

2.5 The Visual Assessment in the EAR

The visual assessment relative to Greenway Place depends on observations from a very small number of viewing points (Appendix T to the EAR).

The main measure to reduce visual impacts on views from the east and south east is to sink the buildings into the ground. However, the topography of the site is undulating and has the greatest cross falls adjacent to the east and south east boundaries. This means that this is the area that would inevitably be cut the most to produce flat building platforms and as such the mitigation of visual impacts by lowering the buildings seems to be more of an afterthought than a strategy.

The effect of this on the landscape is shown in Figures 17 and 18 of Volume 2 of the EAR, which

claims a footprint level for the nearest building to 30-32 Greenway Place and 14-20 Greenway Place that are each 18m below the level of the dwelling.

My client Mr Micallef is directly adjacent to No.30-32 Greenway Place, the view adjacent to which is represented by the montage of Viewing Point No. 4 at Figure 15 in Appendix T. The relationship between the residence and the nearest building is represented by the section shown in Figure 17 .

The analysis above however, clearly throws considerable doubt on the accuracy of the montage and the visualisation of the heights of the buildings relative to the view. If the floor level claimed for No. 30-32 Greenway Place is correct, it is only approximately 0.28m higher than the Micallef residence. This would make no significant difference to the view blocking effects of the buildings and they should be shown in the montage to be considerably taller.

Even if one assumes the section in Figure 17 to be correct, the montage (Figure 15) that shows the relationship between the view from the road and this building does not seem correct. A viewer should be looking only slightly downward onto the roof of the proposed building and see virtually none of the side elevation. However, in the montage, the side wall of the building is visible, meaning that it is shown to be too far away from the viewer to be correct and therefore it may be too small to be realistic, regardless of its height relative to the viewer's eye.

2.6 Photomontages

The Visual Assessment is accompanied by a small number of photomontages. Those in the Appendix to the EAR are not all the same as those in the EAR, the reasons for which are not explained. There are differences in the sizes, shapes, locations and landscaping of the buildings and there appear to be differences in side setbacks in some cases.

In relation to the montages in Volume 2 of the EAR, I have a number of comments, as follows.

Figure 41

The side setbacks on both the south (left) side and the east side (toward the viewer) are greater than is proposed. The natural appearance of the area between the building and the boundary is unlikely to be correct, given that there is proposed to be a very deep cut close to the boundary and demarked by a straight line. There is no landscape plan that shows what the buffer should be like and as such the buffer area is an artist's impression, not a representation of reality of the application. There is proposed to be a fence, earth mound and other features at the top of the cut, which do not appear to be shown.

On the right side of the montage is a hill with trees on it. This hill has a demountable cottage on it in reality. In the plans, this hill is proposed to be cut down to a flat surface on which the building is standing. All of the topography in the montage that is to the right of the building is incorrect. The remainder of the buildings in the southern part of the development site to the right of the view should be dominating the remainder of the view. The impression of a building or two standing in a natural setting is at the best an illusion.

Figure 13 of Appendix T shows the same view but a different building. Given the inaccuracies of the other montage that shows the same view place, there is little confidence that can be placed in either. The right side of the view has been corrected; however the building in the middle of the view is proposed to be in a deep cut according to the sections through this boundary. What appears

to be most of the side wall toward the viewer is visible in this view, which questions whether it appears to be the correct height, or the right distance from the viewer. Compared to Figure 41, the side setback on the left appears to have decreased to a more realistic distance from the side boundary.

Figure 43

The montage appears to be the same as Figure 15 of Appendix T. It shows buildings that appear to be too low and too far away from the viewer to accord with the layout plans, the cut and fill plans and the analysis of relative levels undertaken above. The proposed fence, earth bank and landscape claimed to be present in the setback are not shown. I do not know where the trees that are shown growing between the building and the viewer are springing from.

2.7 Overall

In my opinion the visual impacts assessment is not adequate for a variety of reasons. I consider that it is not consistent with the statutory provisions of SEPPWSEA and does not satisfy the specific requirements of Clauses 21 and 23.

The building heights will adversely impact on the amenity of adjacent residential properties in Greenway Place and in particular those of my clients, and the consent authority cannot be satisfied that it has been proven otherwise. The site topography has been ignored rather than taken into consideration in proposing the development and the layout of buildings, their heights and scales have not been taken into account.

The application recognises the proximity of residences inside the 250m distance relevant to the SEPPWSEA, but, it does not properly establish the environment that they enjoy, or attempt to manage the impacts of development inside its own land, other than in a cursory way. It would be more appropriate and equitable for the development to share some of the responsibility for managing the impacts by proposing specific controls over subdivision, building locations and heights, design, setbacks, FSR and landscaping.

An alternative strategy would be to have substantial buffers to the development on the eastern boundary, arrange the buildings beyond the buffer to retain views between, over and through the development, propose buildings of a smaller footprint and lower, residential heights adjacent to the buffer, employ deep soil landscape areas to mitigate impacts and increase scenic value and design quality.

3.0 Conclusion

In my opinion the application cannot be supported at this time. The visual assessment is not adequate and the strategies that are proposed for mitigation of visual impacts on residential land are inconsistent and unconvincing. The layout of the proposed development is in my opinion not consistent with the scenic and landscape resources that are enjoyed by existing residents in Greenway Place, which deserve to be enjoyed by residents.

The applicant should be required to re-design the layout of the proposed development so as to make use of the topography, relate the size of buildings on the eastern periphery of the subject land more appropriately to the scale of adjacent buildings and mitigate the visual impacts of the scale and appearance of the proposed buildings in a way that relates to the sensitivity of the site that is identified in the EAR.

As a part of that reconsideration, the visual assessment should be carried out in a comprehensive and systematic way with a fully explicit, consistent, collegial and consultative approach, with a justifiable methodology that can effectively answer the statutory framework and the DGRs.

Dr Richard Lamb

Richard Lamb and Associates

18 May, 2011

Curriculum Vitae: Dr Richard Lamb

Summary

- Professional consultant specialising in visual and herittage impacts assessment and the principal of Richard Lamb and Associates (RLA)
- Honorary senior lecturer in Architecture and Heritage Conservation in the Faculty of Architecture, Design and Planning at the University of Sydney
- Director of Master of Heritage Conservation Program, University of Sydney, 1998-2006.
- 30 years experinence in teaching and research in environmental impact, heritage and visual impact assessment.
- Teaching and research expertise in interpretation of heritage items and places, cultural transformations of environments, conservation methods and practices.
- Teaching and research experience in visual perception and cognition, aesthetic assessment and landscape assessment,.
- Supervision of Master and PhD students postgraduate students in heritage conservation and environment/behaviour studies..
- Member of the EBS disciplinary group. The field is based around empirical research into human aspects of the built environment, in particular aspects of aesthetic assessment, visual perception, landscape preference and environmental psychology.
- Richard Lamb and Associates provides:

o professional services, expert advice and landscape and aesthetic assessments in many different contexts

o Strategic planning studies to protect and enhance scenic quality and landscape heritage values

o Scenic and aesthetic assessments in all contexts, from rural to urban, provide advice on view loss, view sharing and landscape heritage studies.

o Expert advice, testimony and evidence to the Land and Environment Court of NSW and Planning and Environment Court of Queensland in various classes of litigation.

o Specialisation in mattes of heritage landscapes, visual impacts, and urban design

o Appearances in over 150 cases and submissions to several Commissions of Inquiry and the principal consultant for over 400 consultancies.

- Qualifications
  - Bachelor of Science - First Class Honours, University of New England
  - Doctor of Philosophy, University of New England in 1975
  - Accredited Administrator and Assessor, Myers Briggs Psychological Type Indicator
- International Journals for which Publications are Refereed
  - Landscape & Urban Planning
  - Journal of Architectural & Planning Research
  - Architectural Science Review
  - People and Physical Environment Research
  - Journal of Environmental Psychology
  - Australasian Journal of Environmental Management
  - Ecological Management & Restoration
  - Urban Design Review International

Major Projects Assessment

Department of Planning

GPO Box 39

SYDNEY NSW 2001

Submission by:

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HORSLEY PARK NSW 2175

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May 20, 2011

Re: Jacfin Horsley Park Industrial Estate Project Application

Concept Plan: 10_129, Major Project: 10_0130

1. Overview

This submission is made in response to the application for approval of a Concept Plan (10_0129) to establish an industrial and employment park and associated infrastructure in Horsley Park, by Jacfin Pty Ltd. The proposal also includes an application (10_130) for Stage 1 of the subdivision, which relates to the first warehouse building and its associated infrastructure. Our property is located on the eastern boundary of the proposed development site and is identified on the attached copy of the Concept Plan (Attachment A).

We would like to clearly state our vigorous objection to the above Concept Plan, with the various reasons and comments regarding our objection detailed in Section 2 below. In summary, we believe that the visual, noise and lifestyle impacts on local residents have been significantly downplayed in the proponent's documents; and we will suffer a direct financial impact via loss of value in our adjoining rural residential property. We were attracted to this area by the opportunity for a rural and peaceful upbringing for our children, as well as the community/village atmosphere. We did not anticipate such a stark and close intrusion to our home.

2. Details of Issues and Concerns

2.1 Lack of consultation and notifications

We understand that Part 3A requires that community and stakeholders will be included in the planning via a consultation process. As noted in the Department's 'Guidelines for Major Project Community Consultation - October 2007' :

"The Department: … Assesses the adequacy of the consultation based on the DGRs as part of its review of the draft environmental assessment prior to its exhibition."

We question why this Application was permitted to go on public exhibition, given that this requirement had not been met. Adjoining landowners who will be directly affected by the aforementioned development were not contacted by the owners or consultants. The Director-General's Requirements for this project state:

"During the preparation of the Environmental Assessment, you should meet with the relevant local, State or Commonwealth Government authorities, service providers, community groups ***and affected landowners****."*

We have not had any opportunity to voice our concerns or provide input prior to the Application going on public exhibition. (Notably, Opening of submission period was March 31st; notification was received from the Department on April 27th after follow-up by a neighbour; and exhibition extended to May 23rd.) We also object to the notification process. Advertising was placed in the Penrith Press and Blacktown Advocate. It is interesting that there was no advertisement placed in the Fairfield local papers, however, the largest group of directly adjoining residents is located in the Fairfield Council area - and Burley Road is a Fairfield Council road.

We feel that the process is inequitable, in that we are given 3 to 4 weeks to review and understand almost 900 pages of technical reports. This has allowed us limited time to obtain expert advice to assist with our submission.

2.2. Proposed Hours of Operation

The proposal is for the industrial estate to operate 24 hours, 7 days a week. This is inappropriate when it adjoins a residential area without any natural buffer. There will be strong obtrusive lighting all night, which will impact local residents. (Lighting from the Erskine Park employment precinct can be seen clearly from the southern end of Greenway Place, although this is kilometres away.)

The noise from B-Double trucks, other traffic, machinery operating, extractor fans, loading dock activities, roller doors, forklifts, reversing alarms, etc, will all sound clearer and louder at night, resulting in sleep disturbance for residents.

2.3 Visual Impact

The information presented in the Visual Impact Assessment (VIA) in Appendix T is misleading in relation to our property. We are very disappointed by the proposed outcomes and the impending impact on our lives. We invite the Department of Planning parties who will be involved in assessing the application to come to our property and view the Jacfin site (and the anticipated impact) from our side.

We have engaged a Consultant, Dr. Richard Lamb, to analyse the Visual Impact report provided by the proponent and his findings have substantiated our arguments. Please refer to his report attached to this submission as Attachment 3.

(i) Visual sensitivity

The photograph below shows the view looking directly forward from our back garden. Our property boundary is the last fence where you can see long grass. You can see the slight hill in the photograph, which actually appears quite close to our property, since there is so much

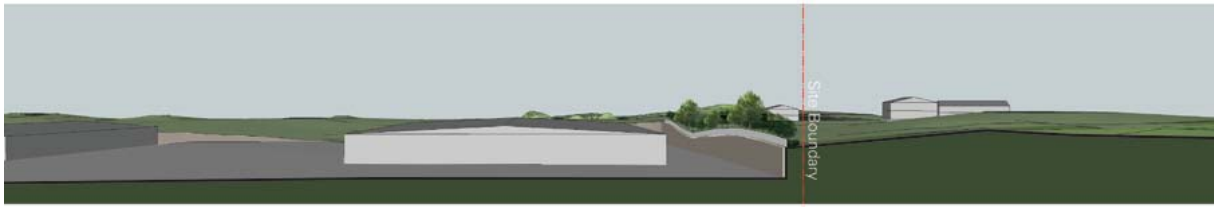
open space. It appears in Figure 12 of Appendix T that this hillside area is classified in the proponent's analysis as a 'moderate' visual sensitivity area. As directly adjoining residents, we argue that the area identified as 'moderate' is also a high visual sensitivity area, as it is still very close to our residence. This area of the site also needs to be subject to the same restrictions, to mitigate visual impact.

(ii) Building heights

Section 21 of the SEPP (WSEA) 2009 stipulates that

> *The consent authority must not grant consent to development on land to which this Policy applies unless it is satisfied that:*
> *(a) building heights will not adversely impact on the amenity of adjacent residential areas, and*
> *(b) site topography has been taken into consideration.*

The cross -section diagram (Figure 17 of Appendix T of the EA) shows that the roof of the warehouse will be in line with the ground level of the adjoining property:



Whilst we haven't checked all levels in the street, the above certainly does not reflect the anticipated outcome for our own property. We have engaged a surveyor to identify the various relevant ground levels for our property and compare them to the VIA. (See Attachment 2 for the survey report.) The building pad of our house is RL91.6, whilst the lowest point of our rear

boundary (adjoining the Jacfin site) is RL 85. By studying the indicative cut and fill diagram provided in Appendix J2 to the EA, we can gather that the relevant ground level for the warehouses/factories to be located directly in front of our property is RL85. (However, the proposed building pads used to create the cross-section diagrams are not consistent with the Cut and Fill Diagrams provided.) This means that there will be minimal cut to the site in front of us and the full height of the building walls will be within our view. If we use the height of the first warehouse in project application 10_130, the estimated height is 14 metres, so this would bring the factory roof to a level of RL 99, which is higher than our house.

In order to achieve the outcome presented in JBA's document, the Developer would need to excavate 11-14 metres deep, outside our boundary. Notably, JBA are also stating in Section 6.11 of the EA, page 69, that the building pads will be "14-21 metres below the level of Greenway Place". Again, this doesn't make sense. At the front of our house, as shown in our Survey diagram, the crown of the road is RL 88.2, which would mean a building pad of RL 67 – 74, which is outside the range indicated in the Concept Plan.

View sharing is not practical in this situation, simply due to the sheer size of the warehouses.

You will see both in the photograph below, and the survey diagram, that there is a green leafy tree directly in front of our neighbour's property and within our views to the southwest. This tree is approximately 14.6 metres high, based on our surveyor's measurements (taken from within our neighbour's boundary). The level at the top of the tree is approximately RL99.0. You can see in the photographs that this tree is much higher than the horizon and any buildings equivalent in height will **completely block our views. On this basis, we can state that the information provided in the proponent's VIA is misleading from the perspective of our property.** Perhaps the diagrams used in the EA may represent best case scenarios for one or two properties with the highest building pads in the street, however, it is certainly not the outcome for us. Ideally, the EA should provide a visual impact study for every adjoining property, considering the varying elevations of the properties.

The EA classifies the "potential" visual impact on residents of Greenway Place as 'low to medium' in Section 6.11. However, given that the current outlook is a rural landscape and mountain views, changing this to a view of huge industrial structures will actually have a high to extremely high direct impact.

Finally, the Penrith DCP 2010 in Section C1 provides site planning and design principles to help guide appropriate development outcomes. This should also be considered, given that the subject site is in the Penrith LGA. Key principles include *"(e) protect, maintain and enhance views and vistas from vantage points*" and "*g) Plan and site new development to enhance local identity. Development is to effectively integrate with the surrounding landscape so that any change as a result of the new development does not compromise the character of the landscape. Issues such as context, scale, size, built form and height, setbacks/buffers, landform…..are to be addressed*."

2.4 Proposed setbacks

The proposed setback to the rural residential boundaries is 20 to 30m to the building wall and is significantly inadequate. The proponent states that this area will be used for parking and as a driveway area for large trucks and other vehicles to move around the building. (As with many warehouse developments, it is proposed that vehicles will enter the property from the local road, then travel around the warehouse in a clockwise direction.) There will effectively be **no setback** between our rural residential property and the industrial activity, with large semi-trailers travelling very close to the boundary. Given the lack of a buffer zone between our properties and the proposed structures, we cannot understand the proponent's suggestion that there will be low noise and visual impact to residents.

Given the proximity of the site to our homes, dust and noise during the period of development (which would most likely be extensive, given the size of the project) will render our backyards unusable.

There should be a buffer zone between the factories/warehouses and the eastern and southern residential boundaries. The area in front of residents (marked on Attachment 1) should instead be utilised for rural residential blocks. This would provide a buffer to existing residents and would be consistent with the existing landscape, heights and character of the surrounding residential areas, as per Section 23 of the SEPP.

2.5 Type of Activity

The site is zoned 'General Industrial', and we currently have no idea of the final, actual use of the proposed buildings. At this stage, it is unknown whether the buildings will be factories or warehouses. Future tenants may undertake industrial activities that may result in additional pollution, dust, toxic fumes, odours and / or noise; affecting us even more. Section 5.8 of the Environmental Assessment discusses the potential for storage of hazardous materials.

All of the above are a huge concern for us, given that we have very young children and our property is so close to the proposed buildings. We shouldn't have to move to ensure the safety and health of our family, particularly since this home was built in 2001/2002 before the site was considered for industrial use.

The Department of Planning must set restrictions on the type of activity that may be undertaken on this site, acknowledging its proximity to residents and the potential negative and harmful impacts.

2.6 Noise, vibration and sleep disturbance

Being a rural residential area, our property and surrounding area is very quiet and peaceful. At most, we sometimes hear the sounds of horses, birds and cattle. However, this Concept Plan proposes operation of warehouses or factories 24 hours, 7 days a week. The noise associated from the day to day operations, including loading dock activity, roller doors, extractor fans or air conditioners, potential manufacturing activities, reversing alarms, etc, will be unacceptable. The Wilkinson Murray report states that *" One or two noise events per night, with maximum internal noise levels of 65–70 dBA, are not likely to affect health and wellbeing significantly"*. Any impact to health and wellbeing is significant to us - even if considered minor by someone unrelated. (A number of small impacts cumulatively over time will become significant.) We are not impressed with this inconsiderate and impersonal statement at all. Firstly, with a multitude of warehouses, traffic and ongoing logistical activity, how could it be only one or two noise events per night? Secondly, no sleep disturbance events on a regular nightly basis, are acceptable to us as the residents!

Noise from the traffic travelling within the industrial estate will be another nuisance, again 24 hours a day. Traffic estimates provided with the application (Table 3 in EA) indicate that the main SEPP road shown on the Concept Plan will carry over 20,000 vehicles per day, including large B-double trucks and semi-trailers. Even the internal road in front of residents will carry 6550 vehicles per day. Although the acoustics report provided by the proponent indicates that noise levels will be acceptable in line with some standards, we dispute this. We feel that minimal effort is being made to minimise acoustic impacts, other than building a 5 metre high barrier between the buildings adjoining Greenway Place. This will be even more unsightly.

During the prolonged 5 stage construction period, residents will also be impacted by ongoing construction noise. The Application lacks clarity as to how this will be mitigated. We note that Table 6-1 of Appendix S predicts the construction noise level at Receiver D (Greenway Place) to be 50dBA, whilst the construction noise objective is lower at 42/41dBA. Although the objective is exceeded, the Consultant has incorrectly noted 'Yes' for compliance.

The Acoustics report notes that wind conditions of 2.6 m/s have been used for the noise predictions. (This equates to approximately 9.4km/hr.) We understand that this was based on twelve month data for 2006 from St Marys weather station, which is quite a distance away. We often get very strong winds in this area and researched wind information on the Bureau of Meteorology's website as a comparison. The closest weather station to the subject site is actually in Horsley Park (# 067119). Please refer to Attachment 4 for the data extracted. This reflects average wind speed at 9am and 3pm throughout the past 13 years and indicates higher wind speeds than used in the report for noise modelling. Therefore, based on the logic provided in Section 5.1 of Appendix S, regarding the impact of wind on noise levels, we anticipate that noise levels could be higher than presented in the EA.

2.7 Air Pollution and Dust

During the extended construction period, we will most likely be affected by dust generated by the earthworks and excavation activity. This raises health concerns for us, as we have young children who both suffer from eczema triggered by dust and other irritants. This area is prone to westerly winds and dust may also be carried to residents outside the immediate locality.

On an ongoing basis, it is unknown at this stage whether the buildings will be factories or warehouses, since the land is zoned 'General Industrial'. This creates a potential for air pollution from manufacturing activities from factories that may be allowed to operate within the site. The commercial traffic expected to be generated by the estate will also cause

pollution. Again, nearby residents need to be considered during assessment of this application for these reasons.

2.8 Financial implications

The EA repeatedly emphasises the overall economic benefits to the state, including employment and contributions to government. However, these benefits do come at the cost and detriment of surrounding residents, who will be contributing to this via a direct loss in value of their own properties.

2.9 Roads

The proposed regional road in Jacfin's Concept Plan is different to the original proposed roads in the SEPP (WSEA) 2009 and will result in a greater visual impact and more noise. It seems that the road will reach further south than originally proposed, which means that the regional road will now be visible to the residents in Greenway Place. (See Figure 35 in EA.) Notably, various diagrams in the EA and Concept Plans are not consistent with this, as they show the road in different southerly locations.

2.10 Proposed Economic and Social Benefits of the project

The SEPP (WSEA) 2009 notes in Section 3 (2) (a) that the objectives include:

> *"to promote economic development and the creation of employment in the Western Sydney Employment Area by providing for development including major warehousing, distribution, freight transport, industrial, high technology and research facilities…"*

The Concept Plan repeatedly emphasises the overall benefits to the State, and particularly Western Sydney via employment opportunities. It is questionable how much employment will really be generated to benefit the local area. Technological advances have ensured that modern warehouses do not require the staff that they once did – and they often utilise electronic / automated racking systems, eg. Coca Cola site at Northmead. Call centres and electronic data interchanges ensure that order taking and on-line centralised tracking activities are often performed remotely – staff can be anywhere in the world.

2.11 Failure to consider alternatives

The Director-General's requirements indicate that the Environmental Assessment should detail various alternatives considered. The EA has only provided one version of a Concept Plan and there does not appear to be any analysis of alternatives that may have provided a better outcome for nearby residents.

3. Summary of submissions

The SEPP (WSEA) 2009 in Section 23 provides various criteria that must be met in relation to developments within 250 metres of residents. These include:

"(a)... proposed buildings are compatible with the height, scale, siting and character of existing residential buildings in the vicinity, and
(b) goods, plant, equipment and other material resulting from the development are to be stored within a building or will be suitably screened from view from residential buildings and associated land, and
(c) the elevation of any building facing, or significantly exposed to view from, land on which a dwelling house is situated has been designed to present an attractive appearance, and

(d) noise generation from fixed sources or motor vehicles associated with the development will be effectively insulated or otherwise minimised, and
(e) the development will not otherwise cause nuisance to residents, by way of hours of operation, traffic movement, parking, headlight glare, security lighting or the like…

We feel that the Jacfin Horsley Park Industrial Estate Project Application does not meet these criteria, based on the detailed discussion provided within this document. Below is a summary of our submissions:

- Members of the Planning Assessment Commission and the Minister for Planning and Infrastructure should visit the area and view the subject site from the adjoining landowners' properties, prior to commencing the assessment process. This will provide a better understanding of the residents' concerns.
- Provide a buffer zone between the residential properties and the industrial estate, in line with the quarry boundary (as marked on Attachment 1). Consider using this land for rural residential subdivision, to minimise costs associated with open space for the landowner. These blocks could be sold with a caveat indicating that owners cannot object to future industrial buildings, provided that they comply with the relevant DCP and SEPP (WSEA) 2009.
- Create an earth mound or artificial ridge around the industrial area (with height limitations to retain views), to assist with reducing the acoustic impacts and visual impact. This ridge should just be grass covered, rather than landscaped with vegetation that may grow tall enough to also block views.
- Require a maximum building pad level of RL 78 (or lower) and also limit building heights to 9 metres, in order to minimise the visual impact.
- Limit activity and operations to normal business hours, on weekdays and Saturdays.

Other declarations:

1. We have not made any disclosable political donations in the past two years.

2. We would like to be contacted when the proponent provides a response to the various submissions lodged, in order to review any revisions to the Application. We would like the opportunity to comment further (if required), prior to determination of the Application.

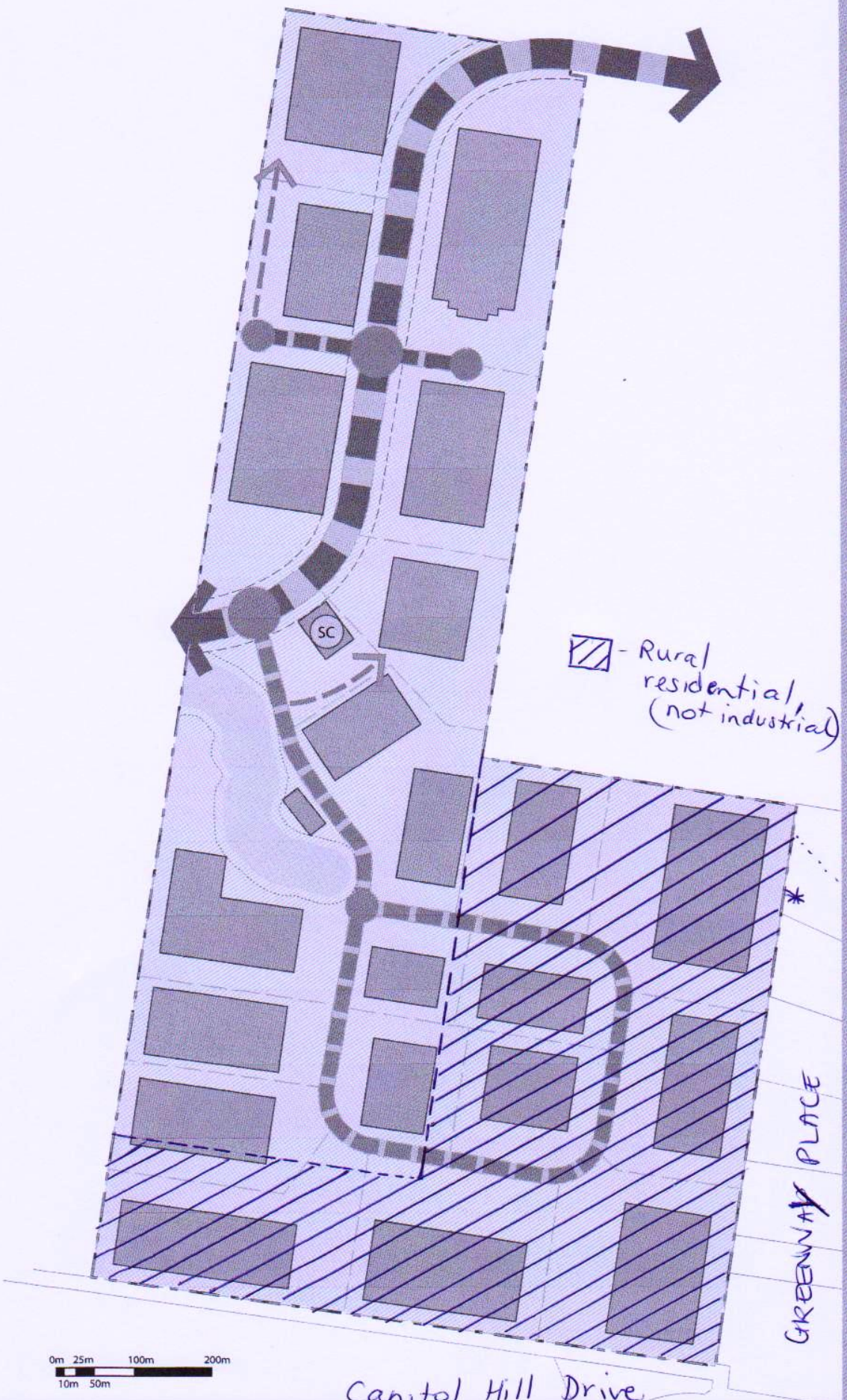
Yours faithfully,

Patrick McHale
Ph: 0417 410 515

Theresa McHale
Ph: 0434 071 524

20th May, 2011
38-40 Greenway Place
Horsley Park NSW 2175

Attachment 1



Key

- Site Boundary
- E2 Environmental Conservation Zone
- 10m Bushfire Setback
- SC Potential Service Centre Location (Subject to Road and E2 Alignment)
- Stage 1 Project Application
- Indicative Building Footprint
- Regional Road One: 40m Reserve
- Local Road One: 21.5m Reserve
- Local Road Two: 21.5m Reserve
- Indicative Internal Road Access
- 20m Building Setback to Regional Road
- Indicative Lot Boundary
- Developable Area

CP009 Concept Plan

Lot A Burley Road, Horsley Park Employment Precinct - Concept Plan

Prepared for Jacfin Pty Ltd
23 November 2010
1:5000 @ A3

JBA planning

Attachment 4 pg 2

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Mean daily solar exposure (MJ/m²)	22.9	19.9	17.4	14.3	10.8	9.1	10.2	13.6	17.1	20.3	21.9	23.6	16.8	21	1990 2011
Mean number of clear days															
Mean number of cloudy days															
Mean daily evaporation (mm)															

Statistics 9 am conditions	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Mean 9am temperature (°C)	22.0	21.5	19.4	17.5	13.8	11.1	10.3	12.0	15.6	18.1	19.2	20.9	16.8	13	1997 2010
Mean 9am wet-bulb temperature (°C)	19.0	18.5	16.9	15.3	12.0	9.6	8.4	9.5	12.1	14.0	16.1	17.5	14.1	12	1997 2010
Mean 9am dew-point temperature (°C)	16.5	17.1	15.8	12.9	9.6	7.5	6.2	6.1	8.4	9.5	13.1	14.8	11.5	13	1997 2010
Mean 9am relative humidity (%)	73	77	81	76	77	80	78	70	65	61	70	71	73	13	1997 2010
Mean 9am cloud cover (oktas)														0	2010 2010
Mean 9am wind speed (km/h)	10.1	9.7	8.9	10.5	10.7	10.3	10.8	11.7	12.2	12.5	11.8	10.7	10.8	13	1997 2010

Statistics 3 pm conditions	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Mean 3pm temperature (°C)	28.2	27.1	25.3	22.2	19.2	16.6	16.1	17.8	20.8	22.5	24.2	26.5	22.2	13	1997 2010
Mean 3pm wet-bulb temperature (°C)	20.2	20.0	19.0	16.7	13.8	11.9	10.9	11.4	13.4	15.3	17.3	18.8	15.7	12	1997 2010
Mean 3pm dew-point temperature (°C)	14.7	15.6	14.2	11.1	8.1	6.6	4.8	3.6	5.6	7.6	11.2	12.7	9.6	13	1997 2010
Mean 3pm relative humidity (%)	49	53	54	53	52	55	50	42	42	45	50	48	49	13	1997 2010
Mean 3pm cloud cover (oktas)															
Mean 3pm wind speed (km/h)	19.4	17.0	14.8	14.4	13.0	12.9	13.9	16.1	18.1	19.8	19.5	19.9	16.6	13	1997 2010

red = highest value blue = lowest value

Product IDCJCM0037 Prepared at Thu 05 May 2011 01:52:11 AM EST

Monthly statistics are only included if there are more than 10 years of data. The number of years (provided in the 2nd last column of the table) may differ between elements if the observing program at the site changed. More detailed data for individual sites can be obtained by contacting the Bureau.

Related Links

This page URL: http://www.bom.gov.au/climate/averages/tables/cw_067119_All.shtml
Summary statistics and locational map for this site: http://www.bom.gov.au/climate/averages/tables/cw_067119.shtml
About climate averages: http://www.bom.gov.au/climate/cdo/about/about-stats.shtml
Data file (csv): http://www.bom.gov.au/clim_data/cdio/tables/text/IDCJCM0037_067119.csv
Climate averages home page URL: http://www.bom.gov.au/climate/data/index.shtml
Bureau of Meteorology website: http://www.bom.gov.au

Page created: Thu 05 May 2011 01:52:11 AM EST

Attachment 4. pg 1.

Australian Government Bureau of Meteorology

Climate statistics for Australian locations

Monthly climate statistics

All years of record

Site name: HORSLEY PARK EQUESTRIAN CENTRE AWS **Site number:** 067119 **Commenced:** 1997 Map

Latitude: 33.85° S **Longitude:** 150.86° E **Elevation:** 100 m **Operational status:** Open

View: ○ Main statistics ◉ All available Period: 30 year period not available Text size: ◉ Normal ○ Large

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Temperature															
Maximum temperature															
Mean maximum temperature (°C)	29.9	28.9	26.5	23.7	20.4	17.7	17.1	19.0	22.3	24.4	26.2	28.2	23.7	14	1997 2011
Highest temperature (°C)	44.2	41.9	40.5	35.1	27.5	24.7	23.9	27.4	34.3	37.1	42.0	41.9	44.2	14	1997 2011
Date	01 Jan 2006	01 Feb 2011	13 Mar 1998	08 Apr 1998	03 May 2007	14 Jun 2004	22 Jul 2009	27 Aug 2004	22 Sep 2003	14 Oct 2006	27 Nov 1997	17 Dec 2009	01 Jan 2006		
Lowest maximum temperature (°C)	19.9	18.1	17.9	15.8	12.8	11.6	11.1	11.9	12.9	14.2	15.6	17.3	11.1	14	1997 2011
Date	03 Jan 2010	14 Feb 2009	21 Mar 2000	23 Apr 1998	30 May 2000	23 Jun 2005	02 Jul 2003	22 Aug 2008	04 Sep 2005	01 Oct 2004	19 Nov 2001	10 Dec 2002	02 Jul 2003		
Decile 1 maximum temperature (°C)	23.7	22.8	22.3	19.3	17.5	14.9	14.5	15.8	17.6	18.6	20.0	22.6		14	1997 2011
Decile 9 maximum temperature(°C)	36.9	35.7	31.8	28.0	23.4	20.2	19.7	22.9	28.0	31.1	33.4	34.9		14	1997 2011
Mean number of days ≥ 30 °C	13.7	10.3	5.4	1.0	0.0	0.0	0.0	0.0	1.4	4.6	6.4	10.6	53.4	14	1997 2011
Mean number of days ≥ 35 °C	4.9	3.1	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.6	2.1	2.9	14.4	14	1997 2011
Mean number of days ≥ 40 °C	1.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	2.3	14	1997 2011
Minimum temperature															
Mean minimum temperature (°C)	17.8	17.9	16.0	12.8	9.1	6.9	5.9	6.5	9.4	11.7	14.3	16.1	12.0	14	1997 2011
Lowest temperature (°C)	10.6	10.4	7.2	1.9	1.7	-1.8	-2.3	-0.5	0.7	3.6	6.6	9.0	-2.3	14	1997 2011
Date	09 Jan 2004	24 Feb 2008	31 Mar 2008	23 Apr 2006	09 May 2006	30 Jun 2010	17 Jul 2007	13 Aug 2005	13 Sep 2004	08 Oct 1998	03 Nov 2003	26 Dec 2006	17 Jul 2007		
Highest minimum temperature (°C)	23.5	24.7	22.7	19.0	17.3	14.3	12.5	16.4	20.1	20.4	24.6	23.5	24.7	14	1997 2011
Date	27 Jan 2001	03 Feb 2011	17 Mar 2000	20 Apr 2006	03 May 2000	04 Jun 2008	12 Jul 1999	12 Aug 2002	24 Sep 2003	18 Oct 1998	22 Nov 2006	22 Dec 1997	03 Feb 2011		
Decile 1 minimum temperature (°C)	14.8	15.0	12.5	9.2	4.8	2.6	2.0	2.7	5.2	7.4	10.7	12.9		14	1997 2011
Decile 9 minimum temperature (°C)	20.5	20.7	19.0	15.8	13.4	11.5	9.7	10.8	14.0	15.6	17.9	19.1		14	1997 2011
Mean number of days ≤ 2 °C	0.0	0.0	0.0	0.1	0.2	1.7	3.2	1.8	0.1	0.0	0.0	0.0	7.1	14	1997 2011
Mean number of days ≤ 0 °C	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.2	0.0	0.0	0.0	0.0	0.9	14	1997 2011
Ground surface temperature															
Mean daily ground minimum temperature (°C)															
Lowest ground temperature (°C)															
Date															
Mean number of days ground min. temp. ≤ -1 °C															

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Rainfall															
Mean rainfall (mm)	60.3	111.7	64.1	64.5	56.4	64.8	41.2	35.9	36.4	61.7	77.8	58.7	738.6	14	1997 2011
Highest rainfall (mm)	122.8	268.2	212.2	150.8	182.0	298.2	122.2	157.0	124.8	203.2	297.2	111.8	1071.2	14	1997 2011
Date	1998	2008	2000	1998	2003	2007	1999	1998	2006	2004	1997	1999	2007		
Lowest rainfall (mm)	5.2	9.0	2.4	3.4	3.2	1.6	12.0	1.6	6.0	1.8	9.8	6.8	378.8	14	1997 2011
Date	2001	2000	2001	2006	2008	2001	2002	2005	2003	2002	2002	2005	2001		
Decile 1 rainfall (mm)	25.3	20.3	21.6	16.5	12.0	12.6	19.6	3.1	8.5	6.9	23.5	17.1	502.9	14	1997 2011
Decile 5 (median) rainfall (mm)	52.0	93.3	51.7	65.6	37.4	50.2	35.0	26.6	34.2	47.6	57.9	64.8	700.6	14	1997 2011
Decile 9 rainfall (mm)	110.0	242.1	102.0	115.4	151.7	111.6	72.0	68.6	59.9	149.0	164.5	92.8	1046.8	14	1997 2011
Highest daily rainfall (mm)	46.0	111.4	53.0	46.0	78.0	84.6	75.0	56.6	69.0	61.0	275.0	45.4	275.0	13	1997 2011
Date	25 Jan 1998	05 Feb 2008	09 Mar 2000	01 Apr 2009	19 May 1998	09 Jun 2007	14 Jul 1999	20 Aug 2007	07 Sep 2006	21 Oct 2004	28 Nov 1997	13 Dec 2008	28 Nov 1997		
Mean number of days of rain	11.6	10.9	11.6	11.4	10.4	10.6	8.5	7.6	8.4	10.1	10.9	10.6	122.6	14	1997 2011
Mean number of days of rain ≥ 1 mm	7.6	7.1	7.1	7.2	6.3	6.2	5.9	4.5	5.1	5.9	6.7	6.8	76.4	13	1997 2011
Mean number of days of rain ≥ 10 mm	2.1	3.0	2.1	2.1	1.8	1.8	1.0	1.1	1.1	1.9	2.0	1.9	21.9	13	1997 2011
Mean number of days of rain ≥ 25 mm	0.4	1.4	0.6	0.6	0.5	0.8	0.3	0.3	0.2	0.6	0.4	0.5	6.6	13	1997 2011

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Years	
Other daily elements															
Mean daily wind run (km)														6	2003 2011
Maximum wind gust speed (km/h)														6	2003 2011
Date															
Mean daily sunshine (hours)															