STATEMENT OF EVIDENCE - DR RICHARD LAMB
(VISUAL IMPACTS)

COURT DETAILS	
Court	Land and Environment Court of New South Wales
Class	1
Case numbers	10928 of 2010

TITLE OF PROCEEDINGS	
Applicants	**DELLARA PTY LTD**
First Respondent	**MINISTER FOR PLANNING**
Second Respondent	**PENRITH CITY COUNCIL**

PREPARATION DETAILS	
Prepared for	Applicant
Legal representative	Debra Jean Townsend, Mallesons Stephen Jaques
Legal representative reference	DST:MMA: 02-5504-2135
Contact name and telephone	Michelle Astridge T 9296 2951

SIGNATURE	
Signature	
Capacity	The Respondent's solicitor by her employed solicitor Nicola Maree Gillies
Date of signature	27 June 2011

Introduction

Background

1. I was commissioned by Dellara Pty Ltd, the Applicant, at the instructions of Mallesons Stephen Jaques, to undertake an independent assessment of the potential visual and scenic impacts of the Preferred Project after it was recommended for refusal following the Major Project Assessment by the Department of Planning. The Modified Preferred Project, inter alia, reflects advice I provided as to the management and mitigation of visual impacts of the proposal following that assessment.

Relevant Expertise and Experience

2. I am a professional consultant specialising in the analysis and assessment of visual impacts.

3. I hold a Bachelor of Science degree with First Class Honours and a Doctor of Philosophy degree from the University of New England. I have taught and carried out research into human aspects of the built environment, in particular landscape assessment, strategic landscape planning, visual perception, landscape preference and environmental perception and cognition for over 35 years. I am an honorary senior lecturer in the Faculty of Architecture, Planning and Design at the University of Sydney, where I taught in the Landscape Architecture, Architecture, Planning and Heritage Conservation Programs for 28 years. I continue to teach in Planning and Heritage Conservation and to supervise Masters and PhD research students in Environment-Behaviour Studies, predominantly concerning visual perception and cognition.

4. I am also the principal of Richard Lamb and Associates, a firm specialising in expert advice, advocacy and expert testimony with regard to visual impacts, urban design, landscape heritage and strategic planning. I have undertaken over 400 consultancies and appeared as a visual impacts and landscape heritage expert in over 150 appeals and cases in law in the Land and Environment Court of NSW.

5. This expert statement is based on my field assessments undertaken on 10 November 2010, 13 December 2010, 15 December 2010 and 10 May 2011 and addresses the Contentions in the Case that are relevant to potential visual, scenic and related amenity impacts.

6. I have been provided with, have read, agree to abide by and have prepared this statement in accordance with Division 2 of Part 31 of the NSW Uniform Civil Procedure Rules 2005 and the Expert Witness Code of Conduct in Schedule 7 of the Uniform Civil Procedures Rules. A summary CV concerning relevant recent experience with regard to visual impacts of development, including extractive industries, is attached to this statement at Appendix C.

Documents consulted

7. I have perused the following documents in the preparation of this Report:

    a. Environmental Assessment, Orchard Hills Waste and Resource Management Facility, prepared by R W Corkery & Co. Pty Ltd, dated April, 2010.

    b. Objection to Proposal - Part 3A Application - Dellara Pty Ltd Waste Management Recycling Project at Orchard Hills Number 09-0074, prepared by Penrith City Council, dated 24 June, 2010.

    c. Visual Assessment for Orchard Hills Waste and Resource Management Facility prepared by Design Collaborative Pty Ltd, dated February, 2010.

    d. Preferred Project Report, Part B: Response to Submissions, prepared by RW Corkery & Co. Pty Ltd, dated 30 July, 2010.

    e. Orchard Hills Waste and Resource Management Facility, Review of Visual Assessment, NSW Department of Planning, August, 2010.

    f. Major Project Assessment, Orchard Hills Waste Facility MP09-0074, Environmental Assessment Report, prepared by NSW Department of Planning, September, 2010.

    g. Modified Preferred Project Report (MPPR), prepared by RW Corkery & Co. Pty Ltd, dated January 2011.

    h. Modified Preferred Project Report Appendix 3: Visual Assessment, prepared by Richard Lamb and Associates, including Attachment A: Schematic Landscape Plans and Schedules, and Attachment B: Photomontages.

    i. Additional photomontages prepared to show views from 17 Cabernet Circuit and 62 Muscatel Way, The Vines, photographed on 10 May, 2011.

    j. First Respondent's Statement of Facts and Contentions dated 3 June 2011.

    k. Second Respondent's Statement of Facts and Contentions dated 2 June 2011.

    l. Notice to applicant of determination of a development application, DA No.116/80, issued to Vacik Pty Limited by Penrith City Council on 23 November, 1981.

    m. Environmental Impact Statement (the EIS) for the extraction of clay/shale on Lot 4, Patons Lane, Erskine Park, prepared by RW Corkery & Co. Pty Ltd, for Vacik Pty Limited, dated 8 December, 1980.

    n. Document entitled "Approvals Sought at Erskine Park Clay/Shale Quarry", prepared by RW Corkery & Co. Pty Ltd, dated 6 March, 1986.

i. Note: The document is accompanied by Plans A and B. Plan A is a revised extraction and staging plan for Area 1. Plan B is a revised extraction plan for Phase 1 of Area 2.

o. Letter from the Chief Town Planner of Penrith City Council, notifying Vacik Pty Limited of approval of an application to modify the Consent for DA No.116/80 issued on 23 November 1981, dated 12 November, 1986.

i. Note: The letter approves variations to amendments made on 6 March, 1986 and refers to Plan B in the document referred to in paragraph l. above.

p. Letter from RW Corkery & Co. Pty Ltd to the Shire Clerk, Penrith City Council concerning two proposed amendments to extraction of Area 2, accompanied by Plans X and Y (described as Figures X and Y in the letter).

i. Note: Figure X shows the proposed final contours of the rehabilitated surface of Area 2, including detail of the proposed amended contours of Phase 1 in a box, with a section line through it. Figure Y shows the proposed final landform of Phase 1 and proposed amendment, in section.

ii. Note: The bund walls approved for the operational phase of extraction and backfilling of Area 2 are shown to be removed.

Relevant Contentions

8. I have addressed Contention 4 of the First Respondent (The Minister for Planning and Infrastructure) and Contention 2.1, Particulars (a), (c), (d), (e) and (h) and Contention 4.1 (ix) of the Second Respondent (Penrith City Council). The discussion of the Contentions is below.

9. I have not addressed legal or strategic and statutory planning Contentions that concern the existing consent, which might on the surface appear to be matters of some relevance with regard to visual impacts. These are more properly the preserve of those with the appropriate expertise.

Visual Aspects of the Proposal

10. The Modified Preferred Project in visual terms is an extraction site that is to be backfilled following extraction of the clay/shale resource and rehabilitated to a grassy and partly wooded appearance.

11. The final landform proposed is higher than the underlying and partly still original landform by between 0 and approximately 11m, to an average depth of

approximately 6m. The shape is convex and steeper on the northwest, north and northeast sides than the original topography. The original topography is shown in sketch form on Figure 4.1 of the EIS.

12. The landform proposed is different from that which is the subject of the existing consent issued on 23 November,1981 by Penrith Council and amended on 12 November, 1986 on the basis of plans provided to it on 5 March, 1986. The final landform for each of two extraction areas approved is concave with a maximum depth below the existing landform of between approximately 15 and 20m. The proposed landform provides superior protection from visual impacts of the operational phase of the development and in concert with the proposed landscape design is a visually better outcome at the end of operations and beyond.

Summary of Strategies for Impact Mitigation

13. My assessment shows that the most significant exposure to view in both the public and private domain is to the north of the subject site in The Vines rural residential estate and the immediately adjacent area on the margins of Orchard Hills. Secondary exposure in the public domain is to part of Luddenham Road east and north east of the subject site. There is no significant visual exposure to views towards the subject site from the south west, south or west.

14. The final approval in 1992 of The Vines residential estate post-dates the existing consent for extraction and filling of the subject site by approximately 10 years. Mitigation of impacts on views from The Vines is therefore a constraint on use of the site that did not exist at the time of the existing approval. Below, at Paragraph 39, I briefly analyse the visual impacts mitigation that will occurred if the activity on the site is being carried out according to the consent and conditions as modified, compared to the Modified Preferred Project.

15. In summary, the applicant proposes in regard to strategies to mitigate visual impacts on views from these areas, to:

    a. Establish the final landform of the north and north east of the site, beginning the revegetation of these areas and reducing the heights of stockpiles of materials in the south and south west of the site as a priority during the earliest phases of the project.

    b. Ensure that the views from The Vines locality remain of essentially the same landscape, other than for growth of vegetation over time, from the end of the establishment phase to the end of the project and beyond.

    c. Re-contour the external faces of mounds during the initial stages of the project to remove the necessity for any temporary acoustic fences or other acoustic control devices that could be visible.

    d. Re-contour the faces to include reduced slope angles, variations in the shape of the slope surface and to include areas for revegetation.

e. Re-vegetate the faces during the initial stages of the project using two different kinds of landscape treatment, ie, temporary fast growing shrub treatment and permanent tall tree woodland respectively.

f. Replace or thin temporary fast growing vegetation as necessary to allow growth of permanent woodland vegetation.

g. Retain permanent vegetation to screen the faces during the establishment stage (ie on the lower slopes) on the final landform. The form and character of the final landform will be of lesser significance because there will be many years of establishment and growth of the vegetation and the changed character of the landscape that it produces.

h. Remove or reduce the height of the existing stockpiles within the site as a priority of early establishment of the project so that they have no visibility from the parts of The Vines locality from which they are visible.

i. Reduce the height of the southwestern and southern faces in the establishment phase of the project to take them out of view from The Vines locality and reduce their presence in views from the elevated section of Homestead/ Calverts Road to an acceptable level.

j. Re-contour the final landform to a more naturalistic form which in my opinion is capable of being compatible with the setting and will be screened by vegetation.

k. Return the final landform to grazing use that is also compatible with potential future recreational or other public uses.

l. Adding vegetation on areas not filled, to assist in blending the final landform into the existing landscape.

My Overall Position in Summary

16. I have prepared Appendix 3 to the MPP Report, which sets out the methodology by which I analysed, documented and assessed the visual impacts of the proposal. I do not intend to repeat that material, but rather to provide a succinct summary of the assumptions and conclusions.

17. The existing quarry is in a landscape setting of only moderate scenic quality, with which it causes significant contrasts of line, form, colour and texture. It is currently prominent in some views from part of The Vines estate, the elevated land in the vicinity of the Calverts/Homestead Road intersection and part of Luddenham Road, as analysed and described in Appendix 3 to the MPPR. The contrasts have been caused by emplacement of material of various kinds with colours, shapes and heights and in locations that have visual impacts which have not been mitigated.

18. The interior of the site is not of substantive visibility, other than from an isolated part of Orchard Hills in the vicinity of the intersection of Calverts and Homestead Roads, from which part of the south east and south sector of the site are visible.

However stockpiled clay shale and perimeter bunds on the south and south west side of the site are far more prominent.

19. The locations, colours and shapes in plan of these features can be seen on Figure 3 of Appendix 3 to the MPPR at Page A3-14.

20. The extent, location and factors that condition views in visual catchment of the site were analysed and shown on Figure 4 of Appendix 3 to the MPPR at Page A3-24. The figure indicates the locations and directions from which views of concern may exist and were analysed in carrying out the assessment.

21. In general, the most prominent features of the subject site at present are clay shale stockpiles and perimeter bund walls, in particular those on the south west, south and south east sides of the site.

22. The adjacent landscapes are of low to undulating topography. All views that could be significantly affected from the public domain (see Figure 4 of Appendix 3 to the MPPR) are from either the east or north.

23. Views from Luddenham Road to the east are at elevations relatively below the site and across intervening rural land, in which various features, such as topography and vegetation, condition direct visibility.

24. Views from The Vines and the margins of Orchard Hills proper, to the north of the site are from a variety of relative levels from below (nearest locations in The Vines), to slightly above (northern part of The Vines) or considerably above (Calverts/Homestead Road vicinity).

25. There are views of parts of the site from the public domain in The Vines, though no views of all or most of the site. Most of the dwellings in The Vines do not have views of the site, but there are views from some of the residences, two of which, 17 Cabernet Circuit and 62 Muscatel Way, were specifically visited for the purpose of preparing photomontages in addition to those in the MPPR.

26. In all views, the flat sides, linear form, un-vegetated nature and colour of stockpiles currently located on the are the most prominent features. In close views from The Vines, the northern bund wall is the most prominent feature. In views from further north, the south western and southern bund walls and clay shale stockpiles are most prominent.

27. In the wider, sub-regional context, rural landscapes are the commonest existing setting for clay/shale quarries in western Sydney and are often converted to landfill sites when resources are exhausted. Thus they are not intrinsically incompatible with the rural or rural residential context from which they may be seen.

28. Other quarry and landfill sites in the general locality are visible, for example, from the Calverts and Homestead Road vicinity mentioned in paragraph 28 above and from local roads generally.

29. This does not mean that anything goes. There are significant visual impacts issues that have arisen from past use of the site that need to be addressed in

any appropriate use of the land. However it would be unrealistic to require there to be no visible residual change to the landscape. The development on the site was permissible and approved and clearly would always cause significant change to the landscape.

30. This quarry pre-dates the nearest sensitive locations for views in the public and private domain, in The Vines estate. As such, the estate is now a constraint on how activity on the site can be appropriately managed with respect to visual impacts.

31. The existing consent for extraction and rehabilitation was given in the context of there being no close sensitive receivers that would experience impacts such as visual and acoustic impacts. Now that there is a different physical location of and population of viewers to take into account in assessing impacts of the proposal and new and different parameters for the appropriate mitigation of the impacts, the application requires a different configuration from what was approved in 1981.

32. This assessment primarily concerns the application and its impacts, rather than a comparison with the current consent for the site.

33. However, below I provide a brief comparative analysis of the likely visual impacts of the proposed and approved developments:

    a. The existing consent which the Council contends should be followed, does not appear to provide adequate safeguards against visual impacts for viewers.

    b. The approval appears to consist of two bowl-like final landforms, each following the plan form of Areas 1 and 2. The shape, form and gradients of these landform features do not appear to be similar to or consistent with any natural landforms in the vicinity. There is an approved final topography plan for Area 2, but no topography or rehabilitation plan for Area 1.

    c. The approved development has a temporary 3m high bund wall parallel to the northern boundary of the subject site and between viewers now in The Vines and Area 2 (Plan B in the document "Approvals Sought at Erskine Park Clay/Shale Quarry" prepared by RW Corkery & Co. Pty Ltd on 6th March 1986). Area 1 that is further to the south west inside the site has no bund walls on the north side.

    d. Taking Area A for example, the southern or back wall of the pit is at a ground level of up to 58-60mAHD (see Figure 3.2 and Figure 3.5 of the EIS) for the existing quarry. The section line AA through the pit is approximately north-south and is shown on Figure 3.5 at the top of the page.

    e. From the eye level of approximately 83.5mAHD, a viewer at the Calverts/Homestead Roads area would be able to see into the pit in the current approval and see the activities of extraction and

backfilling/rehabilitation on an ongoing basis, given that the extraction is proposed to be undertaken in strips that run north/south through the pit. A viewer would also be able to see vehicles on the surface of the site moving between Areas 1 and 2.

f. This relationship can also be understood from the sections in the existing consent (eg. Figure 3.5 Amended), which shows the back wall of the pit (south side, left of the section) to be significantly higher than the front (north, on the right side). This section is redundant with regard to the bunds and vegetation, because this plan was amended in 1986 to produce a single concave shape, with no bunds.

g. As a result, there would be a view into the pit in views from the Calverts/Homestead Roads vicinity and also into Area 2 during the operational phase of the current approval. The final landforms of the areas would also be visible from these locations, because the temporary bunds and vegetation associated with Area 2 are to be removed when the landform is finally rehabilitated.

h. The long sections provided by RW Corkery & Co. Pty Ltd at Page 78 of Appendix 3-Part B of the MPPR are also instructive as regards potential views into Areas 1 and 2 in the current consent, notwithstanding they show aspects of the MPP.

i. Section 3-3' appears to show that a viewer at Calverts/Homestead Roads may also be able to see into the back of the pit in Area 2, even over the temporary approved 3m high bund along its north side in the consent, which in the section if it was through the current consent would be at an elevation of approximately 45mAHD.

j. It appears on the basis of Section 5-5' that viewers in The Vines at the Verdelho Way/Wentworth Road area would be able to see into the pit in Area 1, particularly as the leading edge (north edge) is decreased in height with excavation of the material that is closer to the viewer.

k. Even though the section does not go directly through the approved pit, it has to be kept in mind that the existing rim at the south end of the pit rises to approximately 58-60mAHD. A viewer looking from an elevation of approximately 51m in The Vines would be able to see into the pit. Even if one assumes that there is a temporary 3m high bund along the north side of Area 2, which is between the viewer and Area 1, its crest would be at approximately 43m-45mAHD in the view line, which would not prevent views into the back wall of the pit in Area A.

l. In addition, because of the sequence of extraction in Area 1, the visibility of the activities of extraction, backfilling and rehabilitation in the approved development would be continuously recurring throughout the life of the development.

m. Sections 1-1' and 2-2' on the other hand show that there would be no significant difference in visibility of the landform or activities on the site during the operational stages, whether as proposed or as approved.

n. The existing consent for the quarry has a road access to Luddenham Road across Roughwood Park, running north out of the site before turning east, in full view from Calverts/Homestead Road, adjacent properties, The Vines estate and a section of Luddenham Road. No mitigation is proposed for the impact of views of the trucks or the road in the consent. In contrast, the proposed project has a road access on Calverts Lane that is not visible to any of the visual catchment identified above, other than immediately opposite the entrance on Luddenham Road. The impact of the access road on the public domain is minimal in the proposed project compared to the existing consent.

o. The road access from Area 2 as approved for the existing quarry, emerges through a cutting between temporary bunds on the north side of the site and opens views into both Areas 1 and 2 which are not able to be screened by vegetation. The proposal has no such road, no cutting in the bunds and has substantial vegetation in the view line.

p. The appearance of the mitigation measures is different between the proposed and approved development. Based on material provided to me previously, which appeared to indicate that the existing consent for the quarry had permanent bunds and vegetation screening, I had analysed the likely appearance of the proposed versus the approved development and concluded that subject to the growth of the vegetation, there would be little difference in the appearance of the two, in views from the north and northeast.

q. I have now been informed, even though some of the documentation cannot be found, that the bunds are sacrificial, as is the vegetation adjacent to them. The approved development has a temporary, linear bund wall of 3-4m in height along the northern and north eastern sides of Area 2, and one less linear but of the same height on the northwest and west.

r. The bund is to be vegetated, but there is no approved plan that I am aware of for the structure or density of the planting. The vegetation is to be removed at the end of the project rehabilitation and the bunds are to be bulldozed into the pit during rehabilitation.

s. I do not know whether the bunds and vegetation are to be removed all at once at the end or extraction, or staged to follow the extraction across each of the two extraction areas. However it would seem logical that it is to be carried out at the end of the activity on the site, given that the vegetation would provide some screening to the continual work on the surfaces of the site that are exposed to view.

t. I would not expect that the preference for vegetation and naturalness that exists in the contemporary population would find this action to be acceptable, ie. demolition of the vegetation, which would have grown for the whole period of existence of the development. In my opinion the removal of the vegetation under the existing consent would be retrograde, inappropriate and lead to significant negative visual impacts.

u. The removal of the vegetation, the activity of machinery on the surface and the act of removing the vegetation under the existing consent, (whether windrowing, burning, loading it onto trucks for removal, etc) would be significant visual impacts. No mitigation is proposed. The rehabilitation of the approved project would have had significant visual impacts whereas, in my opinion, the proposed project, post-establishment, has minimal impacts.

v. The proposal has no bund, but has a permanent sloped and vegetated outer face that is rehabilitated in the establishment phase (ie. the first few months) of project and remains to mature over the life of the project and beyond, with newer plantings on later rehabilitation of the south and south east parts of the site. In my opinion this is a more satisfactory outcome than the removal of the bunds and vegetation at the end of the project.

w. Under either scenario, the vegetation during the operational phase of development is capable of growing to a height sufficient in the life of the development to disguise the final landform. This is also evident in the sections at Page 78 of Appendix 3 to the MPPR, where if one assumes a conservative height of 15m of vegetation on the north side of the site in either scenario, there would be no visibility of the landform behind it.

x. The vegetation proposed is located in a more natural configuration than as approved. The approved vegetation is tokenistic and in a linear and unnatural pattern of distribution and there is overall a minimal attempt to integrate the site with the adjacent vegetation character.

y. I have already commented on the temporary nature of the vegetation in the consent.

z. In the ultimate, there is a significant difference between the approved and the proposed final landforms. The approved is an unnatural concave landform that is exposed to any view possible by virtue of being nothing but a grassed surface. The proposed landform is a more natural, convex landform, which few will be able to perceive from any viewing place as a result of its shape and form, the viewing angles and directions and the vegetation intended to partially screen and break up perception of its line and form. The vegetation on the one hand may appear more natural in the context than the rather strange crater-like approved landforms. On the other hand, there will be fewer persons that will see the craters than will see the vegetation and what is visible of the landform underneath.

aa. On this analysis it is my opinion that the proposed development is superior compared to the approved development. However, this has not been the main consideration which has led me to conclude that the application has merits.

34. The sections provided by RW Corkery & Co. Pty Ltd at Page 78 of Appendix 3-Part B of the MPPR are also useful in addressing Council's claim that the landform proposed for the site is unnaturally flat and is thereby unacceptable. I consider this in more detail with regard to the Contentions at Chapter 4 below. Any of the sections show that the landscape in which the proposed development would be seen features extensive areas with slopes that are not dissimilar to what is proposed.

35. In weighing up the relative extents and importance of impacts, I have given greater weight to the sensitivity of viewers in the public domain and have proposed strategies for eliminating or mitigating those impacts if they are unavoidable. This is not to say that I have disregarded impacts on viewers in the private domain. Indeed, more attention has been directed toward elimination of or mitigation of impacts on views from private places, in particular The Vines Estate. The visual impacts on the private domain are considered to be acceptable.

36. Having accorded lesser sensitivity overall to private viewers also acknowledges the fact that there are significant differences between individuals as regards their interests in and sensitivity to visual impacts. In addition, their concerns are predominantly private matters; notwithstanding there may be solidarity among some viewers. Slightly lower sensitivity ratings for private viewers also acknowledge the lesser numbers of viewers affected compared to the public domain and the fact that there are many dwellings and properties in The Vines that do not have views at all.

37. By the same token, there are locations in the public domain in the general vicinity of The Vines that do have views that are affected in similar ways to the private views that I have assessed and which would be experienced by all of the residents at some times and by visitors and tourists. As a result, the greater weight given to the impacts on the public domain, in my opinion, remains valid.

38. I acknowledge that there may be particular individuals who are opposed to any visual evidence of the development. I do not see this as a reasonable position, but otherwise I have no comment on the merits of it.

Address to the Contentions

Below, I have addressed the Contentions relevant to potential visual impacts in the proceedings.

First Respondent's Contentions

Contention 4

The project will result in unacceptable visual impacts.

Particulars

The project will result in a significant increase in the northern bund wall height. This bund wall and associated final landform, once rehabilitated, would constitute a considerable alteration to the landscape by the introduction of a high, large, unnaturally shaped landform that would be insufficiently moderated by landscaping.

39. In my opinion, in the context of how it will be seen and from where, the increase in the height of the northern face will not be perceived as making a significant and unacceptable impact. I call it a face, because it is not intended to have the sort of appearance associated with bund walls, such as, for example, those approved around part of the site. It is a landform feature that will remain constant through the life of the project and beyond it and which will look like the lower slope of a gently sloped hill, which ultimately will rapidly be vegetated, partly screened and of low presence in the landscape. The vegetation will rapidly disguise and ultimately eliminate the perception of the face going higher.

40. The long sections at Page 78 of Appendix 3 to the MPPR are again useful. They show a section from each of the kinds of viewing places that are relevant to analysis and assessment of the impacts of the proposal.

41. They show that when seen in the context of the viewing distances and angles that are relevant, the landform that is proposed is of minimal difference as regards perceived height. For example, in the views from Luddenham Road (1-1' and 2-2'), whether the face is increased as proposed or not is of minimal consequence to the view. A viewer will not be able to perceive the difference and the remainder of the site is not visible beyond, irrespective of the increase in height. In these views, future vegetation will soon remove the ability to perceive either the height or the shape of the landform. Whether the landform is naturally or unnaturally shaped is irrelevant in these views because there is not enough visual information in the view for a viewer to perceive the landform.

42. In relation to the closer views from The Vines, in my opinion the apparent height is more related to the gradient than absolute height, plus the flatness of the face of the existing bund. Perception of the increase in height of the face is intended to be minimised visually by taking it further away from the viewer, significantly lowering the gradient of the face and modelling it to provide variations in topography. Because the face is seen at various angles from The Vines and in perspective view, not in elevation, in the closer distance views the variations in shape of the face will also cause the crest to appear to have some minor variations in height and it will appear less consistent.

43. The view line from most of the residential properties and the public domain in The Vines is either slightly upward or level and with the decrease in height of the bunds in the south and south west, the background horizon will be restored to be a view of the canopy of vegetation, against which the increase in height of the face will be more difficult to perceive. Ultimately, vegetation will become the dominant feature of the foreground, although it is not intended to totally block views of the landform behind.

44. The montages that show the effect on the views from The Vines for example are also conservative in this regard, in that they do not fully show the lowering in height of the overall site landscape that will be caused by reduction in heights of the south and south western bund walls, which are in many views more prominent than the northern face. This will bring the background into view, particularly the tree canopy that is likely to be a significant feature. However, there is a practical and unavoidable reason for the difficulty in faithfully showing this effect, which is caused by the photographic image being one-dimensional. That is, when the existing high bunds are electronically removed from the image, there is no image left. While one can imagine "peeling off" the layer to reveal what is behind, in reality there is nothing there in the image other than a background colour (white). As a result, it is not possible to accurately show what would be seen when the bund is gone. It was possible to have the montage artists do an artistic impression of the likely background; however this would be subject to criticism on the grounds that it may not be accurate. Therefore it was decided to show a notional impression of a treed background or simply colour the part of the bunds to be removed in a way similar to the future background to reduce their visibility.

45. I have partly answered the Particular that claims the landform proposed to be unnatural, above. In my opinion, there are aspects of what is proposed and what is approved that are unnatural, if one takes an absolute position. However, the merits either way are not clear cut.

46. In abstract terms, the shape of the final landform that is proposed is convex, while the landform that was approved is concave. As forms, they are opposites. But neither is of itself either a natural or an unnatural landform. There is always an interplay of convex (forms) and concave (spaces) in any landscape, although some may dominate in particular situations.

47. In the adjacent landscapes, the forms may be low and gentle or more steeply sloped on the sides, depending on the geology and geomorphology. The same can be said for the spaces, such as valleys, gullies, etc. For example, there are significant areas of relatively flat topped, round and steep sided hills in the Orchard Hills district to the immediate northwest, on Minchinbury Sandstone geology and geomorphology.

48. There are no natural concave landforms in the locality that are so deeply concave, steep sided and sharply demarcated at the edges as the approved landforms. Each of the approved extracted areas is a bowl-like shape. There are relatively steep sided concave slopes at the margins, some of which would

be visible to external viewers in places such as The Vines and Orchard Hills, for example the south wall of Area B which is up to 12m high and the south wall of Area A, which is up to 14m high.

49. What is proposed by comparison is convex and over most of its surface appearing not substantially different in slope or landform to parts of the adjacent topography in the vicinity. The steeper parts are not vastly steeper than some of the natural topography on the subject site that is shown on the original topography plan. By comparison with natural forms of the adjacent landscape, the proposed final form has less variations in micro topography (ie. the sides of the landform are flatter). The same can be said, in the concave form, of the approved landform.

50. The landform that is proposed is no flatter on the top than natural landform in the immediate vicinity, for example the land between the site and Blaxland Creek and further out on the floodplain to the north west, as can be seen in the sections in Appendix 3 of the MPPR at Page A3-78. While the Respondent claims that the flatness is not natural, I do not think there is any proof available that this is the case.

51. Finally, I disagree that the final landform would be insufficiently moderated in impact by landscaping, for reasons set out above. I consider that there will not be sufficient visual information in the relevant views for a person to be able to perceive the overall shape and size of the landform after vegetation is established and grown sufficiently, as is demonstrated in the montages. I note in this regard that vegetation can easily grow to heights above that of the landform behind it on any face, any area not filled and subject to capping and in any of the relevant view lines. As such, higher or different levels of landscaping are easily achievable, should the Court be of a mind to require it.

Second Respondent's Contentions

Contention 2.1

The final landform is out of character with the area and will result in unacceptable visual impacts.

Particulars

(a) ***The final landform is mesa like in shape with a flat area measuring approximately 300metres x 150metres located at the centre of the site. The table top area has a height of approximately 57metres AHD. The final landform slope is proposed to be 2% over the area of approximately 25hectares [Contention 9a]***

52. I consider the use of the term "mesa like" is misleading. A mesa is an essentially flat-topped landform structure with vertical to sub-vertical walls.

Geomorphologically, a mesa is an isolated landform typically standing out of a flat plain, or possibly water, as a result of uplift or erosion of the surrounding landscape, or both. The description is unjustified and appears intended to give an impression of contrast with the adjacent landscape, steepness and flatness of the top of the structure that is not justified.

53. The final landform does not have any flat areas and is no flatter in overall gradient than many areas of adjacent landscape. Consistent with the unjustified description as a mesa, the surface of the site it neither a large area of identifiable gradient nor unremarkable in slope. It is for others to tell the Court why 2% is otherwise a slope of any consequence.

54. The analysis of visibility of the existing and future landform shows, even if the Court is persuaded that the amount of the site that is of 2% slope is an issue, that there will not be significant views of this feature.

(c) ***The final landform of the project once rehabilitated would constitute a considerable alteration to the landscape by the introduction of a high, large, unnaturally shaped landform that would be insufficiently moderated in terms of landscaping and sloping of the bund walls [Minister Contention 3]***

55. I have answered the particular above in relation to the First Respondent's Contention, which is actually Contention 4.

(d) ***The applicant seeks approval for further increase in the height of the unauthorized bund walls, which bund walls ought not be present on site at the height and size as is found today.***

56. This particular seems to me to be a matter for legal submissions and I leave it to others to address.

(e) ***The existing bund walls ought be only 3m in height. The height of 3m represents the anticipated final landform upon carrying out and completion of Consent 116/80 granted 23 November 1981 for clay/shale extraction on the site and rehabilitation of the site. The height of 3m is in accordance with the anticipated character of the area within which the proposal is located.***

57. The consent for the final landform does not include the bund walls, which are temporary, only associated with Area 2 and are required to be demolished at the end of the life of the development, or at some time not specified.

58. The Council had therefore clearly not considered the bunds to be within anticipated character of the final landform as is stated, because they are approved to be removed. The bunds are to be demolished along with the vegetation that is associated with them. The contention seems to be something of a post hoc argument.

59. The vegetation is intended to be totally sacrificial, and both the perimeter bund and the trees of the vegetation screen, which would have grown to significant proportions, are to be demolished at the end of extraction. The height of the vegetation is shown very conservatively on the sections in the EIS at around 8-10m, whereas in reality it could reach 15-20m over the life of the extraction.

60. The removal of the vegetation, the activity of machinery on the surface bulldozing the trees down and demolishing the bunds and then recontouring the landform, as well as whatever method is used to remove the vegetation (windrowing, burning, loading it onto trucks for removal, etc) will be significant visual impacts for which there is no mitigation proposed. In comparison, the rehabilitation of the approved project will have had significant visual impacts whereas the proposed development has minimal such impacts.

(h) ***There is an approved rehabilitation plan for the site (Consent 116/80) which has not been shown to be inappropriate and ought to be implemented as required by Consent 116/80.***

61. There is no approved rehabilitation plan for Area 1 and there is no detail as to rehabilitation of Area 2. To the extent that there is any plan, it is for returning the pits to a stable surface with grass. The outcome is to present two steep walled, smooth sided concave landforms to view, with no softening or screening by vegetation. The maximum slopes proposed of up to 1:3, are out of character with the locality and would be difficult to maintain, manage and rehabilitate in the event that any instability or erosion was to occur.

62. The proposed rehabilitation is in my opinion superior with regard to fitting the development into the existing landscape and it achieves a higher level of final scenic quality compared to the existing consent.

Contention 4

Contrary to regional and state planning policies and object of EP&A Act

4.1 The proposal is not in the public interest for the following reasons:

ix. The final landform is out of character with the area (see Contention 3).

63. I have already answered this in relation to the Second Respondent's Contention 2.1, which appears to be the correct cross reference, rather than Contention 3.

Conclusion

64. The proposed development is the means by which the derelict site can be given an economic life that is viable and lead to a satisfactory final appearance. It is not for me to comment on the economics, but in my experience "White Knights" do not come along aiming to rehabilitate formerly abused sites for altruistic and aesthetic reasons and with no economic incentive.

65. In my opinion, the visual public benefits of the MPP in the context of the existing appearance of the subject site will be almost immediate. The existing and most prominent bund walls that are most widely visible will be taken down below view line levels, prominent faces reduced in slope, stockpiles taken out of view and a landscape design to fit the development into its context more effectively instituted.

66. I concede that a part of the trade-off between permanent mitigation of operational visual impacts is an increase in the overall height of the northern face. The reason is to provide acoustic protection for the operations so that temporary noise barriers, rightly criticised in the original application for their likely visual impacts, are unnecessary.

67. The trade-off is also in the context of taking away the potential for people to perceive "temporary" structures, which in the context of extractive industry may be present for many years. These things are to all intent and purpose permanent and their visual impacts, albeit they may solve one problem, can be unreasonable. The approach here is to make sure that the only permanent feature visible is the growth of vegetation and loss of perception of the final landform on the site. In a relatively short time in the context of an extraction site, the visual impacts of the operation will be minimised.

68. The Respondents have made much of the increased height, the shape and the slope of the proposed final landform. I do not consider that the objections are justified. The landform proposed is not unnaturally flat, nor significantly high in the context in which it is visible and subsequent to establishment of permanent vegetation organised to break up perception of its form, partly disguise it and assist in integrating it into adjacent woodland and forest vegetation, its appearance will be unremarkable, indeed difficult to discern.

69. I have considered the existing consent to the extent that I consider this appropriate. There is minimal visual impact of the proposal on the public and private domains other than in The Vines Estate. The impacts on Luddenham Road are minor and easily mitigated. The estate did not exist when the consent was originally made and then later modified in 1986. The environmental assessment made in the EIS is therefore not relevant to the context that now exists.

70. I consider that there are features of the proposed development that are superior in visual impacts terms than the existing consent for the quarry, as outlined above. I do not consider that it provides the same level of mitigation of impacts.

71. I do not agree that there is any greater naturalness about the approved landforms than what is proposed and further I consider that the final appearance of the site will be more natural and of higher scenic quality than what is produced by complying with the consent.

Dr Richard Lamb

24 June 2011

Appendix A

Curriculum Vitae Dr Richard Lamb

Curriculum Vitae: Dr Richard Lamb

Summary

I am a professional consultant specialising in visual impacts assessment and the principal of Richard Lamb and Associates (RLA). I am an honorary senior lecturer in Architecture and Heritage Conservation in the Faculty of Architecture, Design and Planning at the University of Sydney. I have taught and specialised in resource management, environmental impact assessment and visual perception studies for 30 years.

I provide expert advice, testimony and evidence to the Land and Environment Court of NSW in various classes of litigation. I have appeared in over 150 cases and made submissions to several Commissions of Inquiry. I have been the principal consultant for over 400 consultancies concerning the visual impacts and landscape heritage area of expertise during the last ten years.

At the University of Sydney I have the responsibility for teaching and research in my areas of expertise, which are visual perception and cognition, aesthetic assessment, landscape assessment, interpretation of heritage items and places and cultural transformations of environments. I teach both undergraduate and postgraduate students in these areas, giving specialised elective courses in visual and aesthetic assessment. I supervise postgraduate research students undertaking PhD and Masters degree academic research in the area of heritage conservation and Environment Behaviour Studies (EBS). I have been for many years a member of the EBS disciplinary group. The latter field is based around empirical research into human aspects of the built environment, in particular, in my area of expertise, aspects of visual perception, landscape preference and environmental cognition.

I have a number of academic research publications in local and international journals that publish research in EBS and heritage conservation and I am the immediate past co-editor of the academic Journal of the Australian and New Zealand Association for Person-Environment Studies, called by the acronym PaPER (People and Physical Environment Research), which publishes papers in EBS, environmental psychology, cultural heritage management and in heritage conservation. I have had a number of research papers on landscape perception and preference, landscape aesthetics and heritage conservation.

I have developed my own methods for landscape assessment, based on my education, knowledge from research and practical experience. They are related to seminal research carried out in the 1970s, now highly modified by myself in the light of contemporary knowledge of aesthetic preference and cognition and my experience in visual impacts assessment in urban environments. These methods have also been the subject of a number of professional seminars and of guest lecture courses I have conducted.

Qualifications

Bachelor of Science - First Class Honours (Double major in Botany and Ecology) from the University of New England 1969.

Doctor of Philosophy from the University of New England 1975.

Honorary Senior lecturer in the Faculty of Architecture, Design and Planning, University of Sydney.

Principal of Richard Lamb and Associates and Director of Lambcon Associates Pty Ltd.

Academic Research

Since 1980 I have pursued research related to my teaching responsibilities and professional practice. My major research works are in:

Landscape ecology

Landscape assessment

Landscape perception and cognition

Publications and presentations relevant to visual perception and assessment of landscapes are listed below.

Affiliations

Professional

Chartered Biologist, Institute of Biology (UK)

Editor, Journal of the Australian and New Zealand Journal for Person Environment Studies, titled "People and Physical Environment Research"

Community Organisations

Member National Trust of Australia

Chairman Landscape Conservation Committee (1995-2001)

Member Bush Management Advisory Committee (1989-2003)

Member Landscape Conservation Committee (1985-2008)

Chairman Landscape Assessment Committee (1985-1991)

Government Committees

Member, Cultural Heritage Research Advisory Committee, Department of Environment and Conservation NSW National Parks and Wildlife Service

Member, Australian Heritage Commission, NSW Natural Environment Evaluation Panel (1998-2000)

Member, South East Queensland Regional Organisation of Councils Scenic Amenity Study Program Advisory Committee (2003-2005)

International Journals for which Papers are refereed

Landscape & Urban Planning

Journal of Architectural & Planning Research

Architectural Science Review

EXEDRA

People and Physical Environment Research (Journal of the Australian and New Zealand Association for Person Environment Studies)

Journal of Environmental Psychology

Australasian Journal of Environmental Management

Ecological Management & Restoration

International Journal of Urban Design

Assessing Visual Impacts in Rural and Natural Areas

Assessment and Advice

- Admark Constructions Pty Ltd
  Pre DA advice and statement of visual exposure, seniors living proposal, Cobbitty, Camden municipality.
- Belcrib Pty Ltd
  Visual and scenic impacts advice both pre- and post-DA, SEPP 5 Development, Old Northern Road, Castle Hill.
  Statement of visual impact to accompany rezoning application, Old Northern Road, Castle Hill.
- BHI Architects
  Visual impact assessment and scenic amenity statement, proposed residential development, Dido Street, Kiama.
- Byrne Associates
  Visual impact assessment and statement of environmental effects, proposed rezoning and subdivision, Cooranbong, Lake Macquarie.
- Caladines Town Planning Pty Ltd
  Pre-DA advice on design, visual and streetscape impacts assessment, proposed Islamic school, Burragorang and Cawdor Roads, Camden
- Cambray Pty Ltd
  Advice on visual impacts of proposed residential development at Cambewarra.
  Report on strategic planning issues related to Scenic Preservation hatching and Draft LEP specific to visual quality protection, Cambewarra Village.
- Camden Council
  Camden Scenic and Cultural Landscape Study, Local Government Area of Camden.
  Report on strategic planning for landscape protection based on the Camden Scenic and Cultural Landscape Study, for the Camden Rural Lands Study.
- Dartanyon
  Pre-DA advice and visual impact assessment of proposed rezoning of rural land for potential residential development, Corner Kirkham Lane and Macquarie Grove Road, Kirkham.
  Submission of feasibility study for re-zoning of land and subdivision for rural residential uses, Macquarie Grove Road, Kirkham.
- Dungog Council
  Assessment of visual and heritage impacts, scenic protection controls and heritage impact performance standards, proposed rezoning and rural residential development, Paterson, Upper Hunter Valley.
- Durndrax Pty Ltd
  Landscape assessment, curtilage study and heritage impact assessment as part of a Local Environmental Study, curtilage of St Helena, Lochinvar, Hunter Valley.
  Development Control Plan, South West Lochinvar.
  Local & regional visual assessment study to accompany rezoning and subdivision proposal, Mount Harris, Hunter Valley.

- Ingham Planning
  Report on visual impacts and effects on adjoining zones of a proposed subdivision, Glenhaven Road, Glenhaven.
  Pre DA advice and advocacy on proposed subdivision, The Northern Road, Glenmore Park.
- Jewish Cemetery Trust
  Visual resources and visual constraints study to accompany DA for establishment of new necropolis, Berrima district, Southern Highlands of NSW.
- Mirvac Canberra
  Visual impact assessment, strategic planning analysis and peer review of proposed Forde Masterplan, Canberra.
- Pantanassa Greek Orthodox Monastery
  Heritage and visual impacts assessment as part of statement of environmental effects, proposed monastery at Mangrove Mountain, City of Gosford
- Port Kembla Copper
  Pre DA advice on constraints and development envelopes, strategy and advice, Windang, Lake Illawarra.
- Robinson GRC and Taylor Woodrow Australia
  Independent assessment and advice concerning identification of viewing places and presentation of visual impact scenarios, Harrington Park Stage II, Camden.
- Scotts Head Lifestyle Homes
  Visual impact assessment, residential subdivision and development application, Scotts Head.
- SdMasterplan
  Strategic planning advice concerning development potential, Fernhill, Mulgoa.
  Visual assessment of proposed Town Centre land, Nambucca Drive, Scotts Head.
- Shellharbour City Council
  Strategic planning study for identification, protection and conservation of landscapes of natural and cultural heritage significance, Shellharbour Local Government Area.
- Stockland Wallarah Peninsula Pty Ltd
  Submission to NSW Department of Planning against proposed extension of Catherine Hill Bay, Mooney Village and Gwandalan for residential development by Asquith & Dewitt Pty Ltd for Rosecorp Ltd.
- The Resources and Conservation Council of New South Wales (RaCAC)
  Aesthetic values audit of the Upper North East region of NSW.
  The Joint Old Growth Forest Project; Empirical study to assess the feasibility of including cultural and aesthetic values in the evaluation of old growth forest.
- The Resources and Conservation Division, Premier's Department New South Wales (RaCD)
  Expert workshop on integrating heritage values into the CRA/RFA process for evaluation of Australian forests.
- Trustees of the Benedictine Abbey, Jamberoo
  Visual and heritage landscape assessment of impacts of proposed additions on the locality and Landscape Conservation Area, Benedictine Abbey, Jamberoo Pass

Land and Environment Court Proceedings

Baevski v Wingecarribbee Shire Council,
Proposed building associated with dressage arena, Myra Vale Road, Robertson.

Broken Bay Pty Ltd v The National Parks and Wildlife Service of NSW
Valuation matter concerning acquisition of land, Hawke Head Road, Killcare.

CD Barker Pty Ltd for Eodo Pty Ltd v Council of the City of Blue Mountains
Proposed subdivision and detached residential development, Heather Road, Winmalee.

Design Collaborative Pty Ltd v Wingecarribee Shire Council
Proposed spring water extraction facility, Governors Street, Bundanoon.

Erolmore Park Pty Ltd v Maitland City Council
Proposed industrial development, New England Highway, Thornton.

Flower and Samios v Shoalhaven Council
Proposed Seniors Living Development, Main Road, Cambewarra.

Hornsby Shire Council

- ats Haoushar, proposed attached dual occupancy dwellings, Crosslands Road, Galston.
- ats Momentum Architects, proposed SEPP5 development, Old Northern Road, Kenthurst.
- ats M&R Civil, proposed SEPP5 development, Old Northern Road, Kenthurst.

Kiama Council ats Moss
Proposed new residence in rural land, Alne Bank Road, Gerringong.

Liverpool City Council ats Kira Holdings Pty Ltd
Proposed subdivision and low density residential development, Hoxton Park.

Marsim (Queensland) Pty Ltd and Gold Coast City Council ats Hoffman & Ors
Proposed neo-traditional settlement development, Killowill Avenue, Paradise Point, Gold Coast.

Penrith City Council

- ats Pacific Waste Management Pty Ltd, proposed waste facility, Elizabeth Drive, Badgery's Creek.
- ats Penrith Waste Services Pty Ltd, prosecution for alleged breaches of conditions of consent, Mulgoa Quarry.
- ats Sydney Anglican Schools Corporation, proposed rural school construction, Homestead Road, Orchard Hills.

Sangha Holdings Pty Ltd v Kiama Council
Proposed subdivision, Cooby Road, Albion Park.

Sherringhams v Baulkham Hills Council
Proposed retail nursery, Old Northern Road, Dural.

Sutherland Shire Council,
Primary submission to Commission of Inquiry into land use, Helensburgh.

The Coffs Harbour Environment Centre v the Minister for Planning
Proposed rezoning of Look at Me Now Headland for the purpose of sewage treatment plant and outfall, Coffs Harbour.

Wingecarribee Shire Council

- ats Knox, prosecution for illegal construction of earth bank, Range Road, Kangaloon.
- ats Webb, proposed rural dwelling, Silver Springs Hill, Burrawang.
- ats Allen, proposed rural dwelling Greenhills Road, Berrima.

Landscape Assessment and Strategic Planning for Visual Resource Protection

Assessment and Advice

- A D M Hewitt
  Aesthetic assessment and evaluation of REF for proposed wind farm by Pacific Power and Partners, Crookwell.
- Ashfield City Council
  Ashfield Town Centre, Study of Building Heights to be incorporated into the Town Centre Development Control Plan.

Review of DA for Abacus Ashfield Mall Redevelopment, against the performance standards of Building Heights Study.

- Brisbane City Council
  Cultural Mapping exercise, for Quality Urban Corridors Program, Logan Road, Lutwyche/Gympie Roads, in association with Archimix Brisbane.
- Brisbane City Council and the Department of Natural Resources, Queensland
  Protection of Scenic Landscapes Study; Regional landscape study to develop a methodology for the documentation of scenic values of the South East Region of Queensland.
  South East Queensland Regional Organisation of Councils, advice on Scenic Amenity Study.
- Camp Scott and Furphy
  Visual impact assessment as part of the Review of Environmental Factors for Shellharbour Waste Water Treatment Works.
- Council of the City of Gosford
  City Wide Visual Quality Study in association with David Kettle Consulting Services.
  Development Control Plan-Scenic Quality.
  David Kettle Consulting Services Pty Ltd
  Local Environmental Study, The Scenic Highway, Terrigal.
- Demian Constructions
  Strategic planning and visual impact assessment for proposed rezoning and master plan application, Riverlands Golf Course, Milperra.
- Department of Infrastructure, Planning and Natural Resources and The Uniting Church of Australia
  Visual impact assessment for subdivision of land at Ingleside Road, Ingleside.
- Dupere, E
  Visual impact assessment and strategic planning for proposed rezoning and subdivision of land at Menangle Road, Menangle
- Dexus Property group
  Visual impact assessment and advice on building height controls for Greystanes Estate, Southern Employment Land, Greystanes.
- Globe Property Group
  Visual and landscape strategic planning assessment of proposed draft amendment to Wingecarribee LEP 1989, Burradoo, Moss Vale
- Growth Centres Commission of NSW in association with Jackson Teece Architecture
  Landscape and visual assessment to inform the strategic planning of development footprint and urban form analysis of North Kellyville precinct identified as an urban release area forming part of North West Growth Centre, North Kellyville.
- Hastings Shire Council
  Review and redrafting of DCPs 9 and 20 relating to scenic and heritage resource protection, Port Macquarie.
  Visual resources and scenic conservation study as part of Camden Haven River Estuary Processes Study, in association with Patterson Britton and Partners.
- Hillside Planners
  Landscape assessment, curtilage study and heritage impact assessment as part of a Local Environmental Study, curtilage of Duckenfield House, Duckenfield, Hunter Valley.
- Ingold, Trehy and Neate Pty Ltd
  Local environmental study, proposed subdivision and residential development, Berkeley Vale, Wyong Shire.
- Johnson Property Group
  Advice on urban design and potential visual impacts, proposed Trinity Point Marina and tourism development Concept Plan, Lake Macquarie.
  Visual impact assessment of proposed residential subdivision, mitigation measures and advice on conditions for site specific DCP, Scarborough Gardens, Bonnells Bay

- Kinsmen Queensland
  Visual constraints and residential development strategy advice, Lennox Head.
  Advocacy concerning strategic planning process and proposed rezoning of land, Lennox Head.
- Ku ring gai Council
  Brief development for municipality wide neighbourhood visual and streetscape study.
  Local Environmental Study: scenic quality of South Turramurra.
- Meadows of Milton
  Scenic resources and visual constraints study, proposed seniors living proposal involving concurrent rezoning, Milton, South Coast.
- Office of Marine Administration and Department of Environment and Planning
  Methodology for assessment of visual issues and design guidelines for the DCP to accompany SREP 22 and 23, Sydney and Middle Harbours and Parramatta River: and Part 5 checklist.
- Pittwater Council
  Scenic qualities, landscape resources and visual constraints study, potential rezoning and land swap exercise, Council Works Depot site, Ingleside.
- Quality Environmental Management
  The Water Board (now Sydney Water) review of visual environmental effects for Wongawilli Reservoir proposal, West Dapto, Illawarra.
  Road Transit Authority (Review of visual environmental effects for Oak Flats Highway Interchange proposal, Oak Flats to Dunmore section, Princes Highway, Illawarra).
- Shoalhaven City Council
  East Nowra Local Environmental Study.
  Old Erowal Bay visual quality study.
  Brief for Mollymook Local Environmental Study: Visual Impacts.
  Visual impacts assessment relating to land swap and rezoning proposals, Milton and Narrawallee.
- The Penrith Gospel Trust
  Visual impact assessment of new school house, Kingswood Road, Orchard Hills.
- Wingecarribee Shire Council
  Preparation of Development Control Plan No 53 for the siting of buildings in rural zones.
- Winten Property Group
  Strategic planning study for Stage 1 Master Plan, visual impact assessment for rezoning applications, principles for siting of buildings and mitigation of potential impacts, Boydtown, Eden region.

Assessing Impacts of Extractive Industry Developments

Assessment and Advice

- Breen Holdings
  Assessment, analysis and report to the Federal Minister for the Environment in response to Emergency Listing of Kurnell Peninsula under the Environment Protection and Biodiversity Conservation Act 1999.
- Collex Waste Management Pty Ltd
  Visual impact assessment, proposed recycling facility, Bunnerong Road, Matraville.
- Concrete Recyclers
  Visual impact assessment of proposed rezoning of land for a recycling facility, Moorebank.
- Concrite Quarries Pty Ltd.
  Staging and visual impacts mitigation strategy for crushing plant and associated facilities, Exeter Quarry, Southern Highlands.

- R W Corkery and Company Pty Ltd
  Visual impact assessment and advice, proposed design of product transport roads serving Exeter Quarry, Vine Lodge, Southern Highlands.

Land and Environment Court Proceedings

Champions Quarry Pty Ltd v Lismore City Council
Proposed quarry, Tucki Tucki, Lismore

Coffs Harbour Shire Council ats CSR Readymix
Proposed hard rock quarry, Boambee Road, Boambee.

Collex Waste Management Pty Ltd v Blacktown Council
Proposed landfill and strategy and remediation of existing landfill site, Riverstone.

Concrete Recyclers v EPA
Proposed variation to condition of consent, concrete recycling plant, Thackeray Street, Camellia.

Concrite Quarries Pty Ltd v Wingecarribee Council
Proposed extension to Exeter Quarry, Rockleigh Road, Exeter, Southern Highlands.

Exeter Quarry, Primary Submission
Commission of Inquiry into proposed extension by Concrite Quarries Pty Ltd, Exeter Quarry, Southern Highlands, 1998.

Exeter Quarry, Primary Submission
Commission of Inquiry into proposed quarry extension and Village bypass route, Exeter Quarry, Southern Highlands, 2000,.

L D Fowler Pty Ltd and anor v Lithgow City Council
Proposed hard rock quarry, Rydal

P Sobey and anor. v Nambucca Shire Council
Proposed quarry extensions and variations to conditions of consent, Valla Quarry, Valla.

Rocla Quarry Products v the Minister for Planning and Sutherland Shire Council,
Proposed sand extraction, Captain Cook Drive, Kurnell.

Tiocliff Pty Ltd v Yarrowlumla Council
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application for minor extension, Exeter Quarry, Southern Highlands.

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Refereed articles

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Lamb, R.J. (1992). Aesthetic impacts of development on valued landscapes: The nature of evidence given in five cases. Journal of the Australian and New Zealand Association for Person Environment Studies, 41-42, 31-52.

Lamb, R.J. (1993). Psychological type in first year Architecture students: Potential new answers to some old questions. Higher Education Research and Development Association, 16, 159-164.

Lamb, R.J. (1995). Biodiversity, in: Architecture and the Environment, (New Zealand Institute of Architects), 2, 1-6.

Lamb, R.J. (1995). Biodiversity, in: Environmental Design Guide, (Royal Australian Institute of Architects), General Issues,1,(3), 1-6.

Lamb. R.J. (1995). The scenic quality of the Hawkesbury-Nepean River: a critique of three versions of community participation in its conservation. Journal of the Australian and New Zealand Association for Person Environment Studies, 48, 1-17.

Lamb, R.J., & Purcell, A.T. (1990). Perception of naturalness in landscape and its relationship to vegetation structure. Landscape and Urban Planning, 19, 333-352.

Lamb, R.J., and Purcell, A.T. (2002). Landscape perception: A Comparison of perceived naturalness to variations in the ecological naturalness of vegetation. Journal of the Australian and New Zealand Association for Person Environment Studies 57, 1-16.

Lamb, R.J., and Holland, G. (1995). Are physical and cultural issues of ecologically sustainable development always compatible?: The Australian example of urban consolidation. People and Physical Environment Research, 47, 34-41.

Lamb, R.J., and Morris, C. (1996). Symbolic, Spiritual and Aesthetic vales of forests. In: Design for People, Groves, M.A. and Wong, S. (eds), Sydney, People and Physical Environment Research, pp 79-84.

Lamb, R.J., Purcell, A.T., Mainardi Peron, E., and Falchero, S. (1994). Cognitive categorisation and preference for places. In S.J. Neary, M.S. Symes and F.E. Brown, The Urban Experience: a People Environment Perspective, London, E & F.N. Spon, pp 405-416.

Outhred, R.K., Lainson, R., Lamb, R. and Outhred, D. (1985). A floristic survey of Ku Ring Gai Chase National Park. Cunninghamia, 3, 313-338.

Lamb, R.J., and Purcell, A.T. (1982). A Landscape Perception Study of the Peninsula Area of Warringah Shire: Implications for Planning Controls, Building Regulations and Other Areas of Council Activities. University of Sydney, Department of Architecture, Occasional Paper, 44pp.

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Purcell, A.T. and Lamb, R. J. (1998). Preference and naturalness: An ecological approach. Landscape and Urban Planning, 42, 57-66.

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Peron, E., Purcell, A.T., Staats, H., Falchero, S. and Lamb, R.J. (1998). Models of preference for outdoor scenes: some experimental evidence. Environment and Behaviour, 30, 382-305.

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Lamb, R.J. (1994). Advancing arguments for the conservation of valued places. In: Ramsay, J and Paraskevopolous, J (eds). More Than Meets the Eye: Identifying and assessing

aesthetic value. Australian Heritage Commission Technical Workshop Series No. 7, University of Melbourne, 1993. Canberra, Australian Heritage Commission, pp 23-38.

Lamb, R. J. (1994). Technics or ethics? In: Ross, H., Dovers, S., Sexton, M. and Rodger, A. (eds). Sustainability and the built environment: Interpretation and strategies. Fundamental Questions paper No. 12, Centre for Resource and Environmental Studies, Canberra, Australian National University, p 20.

Lamb, R. J., and Morris, C. (1996). Cultural values in the assessment of old growth forests, in, The coming of age: Forest age and heritage values. 1997 Technical Series No. 1, Canberra, Australian Heritage Commission.

Thorne, R.T. and Lamb, R.J. (1990). Can schools of architecture and their design teaching be improved through understanding psychological differences between individuals and groups within the organisations?. In: J. Plume (ed), Architectural Science and Design in Harmony: Proceedings of Joint ANZASCA/ADTRA Conference, University of New South Wales.

Thorne, R.T. and Lamb, R.J. (1991). The education of architectural designers. What will be the qualities required of the teachers of design if the Higher Education Council policy for universities is implemented? ANZASCA Conference Proceedings, Adelaide, University of Adelaide.

Invited symposium papers

Lamb, R.J. (1988). Ecological and perceptual changes to bushland associated with Lantana invasion. Managing Warringah's Bushland (Symposium). Sydney, Warringah Shire Council.

Lamb, R.J. (1983). Ecological and aesthetic objectives in bush management. In: Sydney or the Bush? Australian Institute of Horticulture Conference, Sydney, Ku ring Gai CAE.

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