



VISUAL IMPACT ASSESSMENT REPORT - KARUAH EAST QUARRY

BLUE ROCK CLOSE, KARUAH, NSW, 2324

WORIMI COUNTRY

prepared for:

Karuah East Quarry Pty Limited (KEQPL)



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1. ASSESSMENT SUMMARY

Terras Landscape Architects has been commissioned by Karuah East Quarry Ptd Limited (KEQPL) to prepare this report for the proposed Karuah Pit Consolidation Project between the existing Karuah Hard Rock Quarry (DA 265-10-2004) and the Karuah East Quarry (MP09_0175).

The approval pathway for this project will consist of two concurrent s4.55(2) Modification Applications to each respective consent to account for the component of the project relevant for each site. This report has been prepared in accordance with the Environmental Assessment Requirements issued by the NSW Department of Planning, Housing, and Infrastructure (NSW Planning) issued on 1 October 2025, that requires the concurrent Modification Applications to consider Visual Amenity.

As such, this Visual Impact Assessment (VIA) has been developed to support the Karuah East Quarry (KEQ) Modification 11 Application and should be viewed in conjunction with the Karuah Hard Rock (KHRQ) Quarry Modification 2 Application.

For the purposes of assessing the visual impacts of the project, the VIA for the KEQ considers visual amenity for sensitive features to the east of the site, whilst the associated VIA for the KHRQ considers visual amenity from the west.

The criteria for the visual assessment has been detailed and viewpoint data sheets have been prepared using site photographs to allow the reader to gain a visual appreciation of the views from the identified significant viewing locations.

Additional descriptive text and information has been provided to support this investigation. This summary has been provided as a brief commentary on the findings of the visual assessment.

- The subject site is located in Karuah, off the Pacific Highway along Blue Rock Close. The site is set within the MidCoast Local Government area.
- The site is subject to the Great Lakes Region Development Control Plan (DCP) 2013 and is zoned as RU2 Rural Landscape in the Great Lakes Local Environment Plan (LEP) 2014.
- Four key landscape character units are identifiable within a 1km radius of the site. These are: 1. Major Transport Corridor 2. Quarry / Infrastructure 3. Cleared / Grassland 4. Vegetation.
- The KEQ site is made up of multiple land parcels being Lot 12 and 13 DP1024564 and is currently used as a hard rock quarry with current consent for continued quarry extraction and associated operations until 31 December 2034.

- The subject site forms part of the Karuah Quarry Complex, which includes:
 - The KEQ (Lots 12 & 13 DP 1024564);
 - The KHRQ (Lot 21 DP 1024341 and Lot 11 DP 1024564);
 - Biodiversity offset areas for the KEQ (Lot 13 DP 1024564, Lot 5 DP 838128 and Lot 14 DP 1024564) and KHRQ (Lot 12 DP 1024564).
- The Karuah Pit Consolidation Project seeks to extract in-situ material within currently disturbed areas of lots 11, 12 and 13 DP1024564. At KEQ (Lot 12 and 13) this included the dividing highwall and minor extensions to the east (inclusive of a redundant powerline corridor) and to the south. Approved extraction depths of RL65 for KHRQ (Lot 11) and RL45 for KEQ (Lot 12 and 13).
- At KEQ, a minor extension in approved disturbance of 4690m² is proposed within a cleared and now redundant powerline corridor.
- A review of the visual catchment for the proposed site indicated that views of the proposal are limited along Pacific Highway and Halloran Road, with more distant views available from elevated areas, such as Shoal Bay.
- The clear and filtered views from Pacific Highway are minimal and are experienced from the perspective of a vehicle traveling at 110 km/h which minimises any exposure to passing vehicles.
- Views from Halloran Road are only afforded to a small handful of visual receptors when traveling west for a brief period of time.
- Distant views from Clarke Road and Shoal Bay lack sufficient detail to discern specific aspects of the site, and the proposed removal of the highwall will result in a benign change.
- The proposal has a LOW to NEGLIGIBLE cumulative visual impact, with a beneficial effect on the landscape, as the proposed works will eliminate most views of the site from surrounding areas.

2. INTRODUCTION

2.1. Objectives

The objectives of this report are as follows:

- To identify and describe the existing visual/landscape environment and to evaluate its current qualities including an assessment of visual quality.
- To identify viewsheds and to locate and/or identify typical viewpoints from which the impacted areas may be seen.
- To determine what likely impacts the proposal may cause to the prevailing visual/landscape quality of the area and to make recommendations, where appropriate, to mitigate the visual impact of the proposed development if required.

2.2. Methodology

The methodology applied to this study involves systematically evaluating the visual environment pertaining to the site and using value judgements based on community responses to scenery. This identifies aspects that are more objective (such as the physical setting, character and visibility of a proposal), from more subjective aspects, such as the compatibility of the proposal within the setting.

Visual data collection involves an initial desktop study, followed by systematically evaluating the visual environment from relevant viewpoints through fieldwork to determine the actual potential for views to the site. Once a viewpoint has been identified, data is recorded both photographically (and when required, by survey) and as detailed notes.

The selection of viewpoints has generally been based on locations where potential for views of the proposed development would occur. Viewpoint selection criteria include: consideration of where views can be obtained from publicly frequented locations, such as major traffic corridors; prominent look-outs or locations of high scenic value; or, where members of the local community may be affected.

This field study assessment has been carried out following the steps noted below:

a) Desktop Analysis. Identifying key components of interest through extensive desktop analysis from a variety of sources. These resources range from relevant planning and environmental resources and written documents, to digital aerial photography, cadastral data, vegetation mapping and terrain modelling.

b) Field study. Carried out by a qualified landscape professional to gather primary, photographic resources of key components highlighted through desktop analysis. A collation of ground-truth data as gathered during the preliminary desktop assessment and any additional field study required that desktop analysis did not capture. Where weather or other reasons have prevented the capture of required information, a supplementary site visit has occurred to ensure correct and accurate data. Photographs are used to best capture the landscape character of the area, inform the reader of the representation of the view from each viewpoint, as well as provide baseline visual references for the production of photomontage and photographic simulations. It should be noted that photographic resources have been captured by Terras Landscape Architects, unless noted otherwise.

This written assessment has been carried out following the steps noted below:

1. Establish the site context and describe the site. A description of the site and its context.

2. Describe the visual environment. A description of the site's immediate and broader context as well as photos from surrounding landscape character areas to demonstrate the broader landscape setting and features.

3. Identify the visibility of the existing landscape catchment and any viewpoints. This includes a review of the existing visual environment/landscape setting of the locality and the preparation of a Visual Envelope Map (VEM) to explore the study locality. This requires the preparation of a viewpoint analysis using a representative number of viewpoints located within a reasonable distance of the site located within its visual catchment.

4. Assess the likely landscape and visual impacts with regards to visual access, visual quality, visual sensitivity and magnitude of change. A brief description of the proposal is included within this section followed by an assessment of the likely impacts based on a composite of the sensitivity of the view and the magnitude of the proposal being a combination of scale, size and character having regard to the proximity of the viewer.

5. Report illustration. Include illustrations such as photomontages and other three-dimensional (3D) imaging where necessary to clarify the landscape and visual changes and potential impacts to the site and surrounding viewpoints.

6. Summary and conclusion. Include a summary of the main findings of the report, and if appropriate, a discussion of the overall likely level of landscape and visual impact of the proposed development on the site and surrounding viewpoints.

The purpose of the above methodology is to reduce the amount of subjectivity entering into the impact assessment and to provide sufficient data to allow for third party verification of results as well as compliance with the requirements of any site-specific scenic quality guidelines.

2.3. Technical Methodology for Photos and Montages

The creation of photomontages and visualization tools follows established Technical Guidance and Best Practice resources. Ensuring accuracy across all aspects is crucial for the validity of visual representations.

The level of verification required varies based on the type and application of the visualization data. The following visualisations included within this report have been prepared with reference to the Landscape Institute Technical Guidance Note "Visual Representation of Development Proposals - Table 2: Visualisation Types 1-4," 17 September 2019.

In saying such, the following methodology has been undertaken to ensure validity of each visually represented viewpoint:

1. A cylindrical, photo-stitched panorama has been prepared to establish landscape character and context of each viewpoint.
2. Within this panorama, an approximate extent of works line has been provided to convey the extent of built form in each viewpoint. **Note: This does not represent what is visible from each viewpoint but merely the maximum proposed extent of works in the viewed landscape.**

The photomontages included within this report have been produced using the following methodology:

3. An indicative outline of the extent of the baseline image used to develop the photomontage (shown on the following page to the photo-stitched panorama), if applicable. **Note: While photo-stitched imagery considers peripheral visual experience, it is unsuitable for photomontage application due to potential distortions in field of view and focal length during the merging process, which can compromise the accuracy of the focused scene**
4. A baseline image of the viewpoint to convey the current viewed landscape. Taken with a full frame sensor camera + 50mm fixed lens; OR, if not available, a crop-sensor camera with 28mm or 35mm fixed lens, or equivalent used to achieve 50mm FFS (i.e. Canon 100D crop-sensor camera has a 1.6x crop factor. Therefore, 50/1.6=31mm would be the closest equivalent to FFS 50mm). Dependent on the visualisation type, the photograph is either captured at a comfortable eye-level height for the photographer, as noted, or captured using a tripod set to 1.6m. Weather, lighting, camera configuration and date of collection is included on each viewpoint page.
5. A computer generated model is developed using the locational and geodata collected. The configuration of each viewpoint is fine-tuned using 3D modelling program(s) to match the camera setting employed

from the baseline images. Locational accuracy is a critical component to the validity and accuracy of photomontages data and has been collated using satellite imagery, GPS data, and/or survey points collected by a qualified surveyor, where noted. Dependent on the type of visualisation, the model is inputted into multiple software to convey vegetation over a set period(s) of time and fine-tuned to create an accurate represented of the viewpoint with the proposal. In order to replicate an indication of viewed landscape, point cloud data is overlaid with the proposed site model and baseline photograph, providing an indication of the proposal's placement and visibility from the assessed viewpoints. The proposed development is then overlaid to the baseline image and produced as a wireframe, massing or photorealistic model--dependent on the type of visualisation required.

6. A sectional elevation profile has been created in order to identify any views of the proposal from selected locations. Using vectorworks site modeling and sectional profile tools each section is overlayed with the proposed and existing site models to indicate proposed cut and fill and what views this might create or remove.

2.4. Terminology

The below meaning for the following terms shall apply to this report:

- Character a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, and often conveys a distinctive 'sense of place'. This term does not imply a level of value or importance.
- Landscape is an all-encompassing term that refers to areas of the earth's surface at various scales. It includes those landscapes that are: urban, peri-urban, rural, and natural; combining bio-physical elements with the cultural overlay of human use and values.
- Magnitude of change refers to the extent of change that will be experienced by receptors. This change may be adverse or beneficial. Factors that could be considered in assessing magnitude are: the proportion of the view / landscape affected; extent of the area over which the change occurs; the size and scale of the change; the rate and duration of the change; the level of contrast and compatibility.
- Mitigation measures to avoid, reduce and manage identified potential adverse impacts.
- The proposal/development site is that activity which has the potential to produce a visual impact either during the works or as a result of it.
- The sensitivity refers to the capacity of a landscape or view to accommodate change without losing valued attributes. Includes the value placed on a landscape or view by the community through planning scheme protection, and the type and number receivers.
- The subject site (referred to also as the site) is defined as the land area directly affected by the proposal within defined boundaries.
- The study area consists of the subject site plus the immediate surrounding land potentially affected by the proposal during its construction and operation phase.
- The study locality is the area of land within the regional visual catchment whereby the proposal can be readily recognised. Generally this is confined to a six-kilometre radius beyond which individual buildings are difficult to discern especially amongst other development where contrasts are low. Further, visual sensitivity generally declines significantly beyond this range due to the broad viewing range that can be had from vantage points. For this study the locality has been limited to the visual catchments that have distances less than a quarter-kilometre as views beyond this are extremely restricted.
- Values are any aspect of landscape or views that people consider to be important. Landscape and visual values may be reflected in local, state or federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed
- View refers to any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.
- The viewpoint is the specific location of a view, typically used for assessment purposes.
- Viewshed refers to areas visible from a particular location (may be modelled or field-validated).
- Visual absorption capacity involves the potential for the physical attributes (landform, vegetation and built form) of a scene to absorb a particular change.
- Visual amenity is the attractiveness of a scene or view.
- The visual catchment involves areas visible from a combination of locations within a defined setting (may be modelled or field validated).
- The visual effect is the interaction between a proposal and the existing visual environment. It is often expressed as the level of visual contrast of the proposal against its setting or background in which it is viewed.
- Visual representation refers to the graphic representation of a proposal in context showing its likely appearance and scale.

3. Study Area

3.1. Site Context

The subject site is located in Karuah, off the Pacific Highway along Blue Rock Close. It is located approximately a 1 hour drive from Newcastle City and Nelson Bay. The site is set within the MidCoast Local Government area.

The KEQ site consists of Lots 12 & 13 DP 1024564. Figure 2 shows the location of the KEQ in the context of the Karuah Quarry Complex, which includes:

- The KEQ
- The KHRQ (Lot 21 DP 1024341 & Lot 11 DP 1024564)
- The proposed Karuah South Quarry (Lot 11 DP 1024564 & SSD 17-8795) *(Note: the Proposed Karuah Pit Consolidation Project does not affect the proposed Karuah South Quarry).*
- The biodiversity offset area established for the KEQ (Lot 13 DP 1024564, Lot 5 DP 838128 & Lot 14 DP 1024564)
- The conservation area established for the KHRQ (Lot 12 DP 1024564)
- The footprint of the formerly proposed Karuah Red Quarry

The site is currently used as an andesite quarry with current consent for continued quarry extraction and associated operations until 31 December 2034. The area surrounding the site is predominantly vegetation and pastoral grass lands, there is limited residential with the exception of some rural dwellings to the east and south of site.

The site is subject to the Great Lakes Region Development Control Plan (DCP) 2013 and is zoned as RU2 Rural Landscape in the Great Lakes Local Environmental Plan (LEP) 2014. The site is located within Rural Landscape (RU2) within the Great Lakes LEP (2014) which has been identified to change to Primary Production Small Lots (RU4) under the draft MidCoast Draft LEP. Extractive industry is a permissible use in both the RU2 and draft RU4 zones.

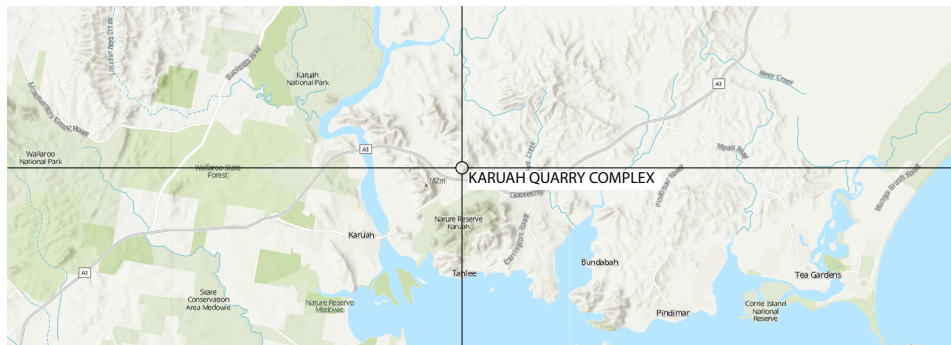


Figure 1 Location Plan

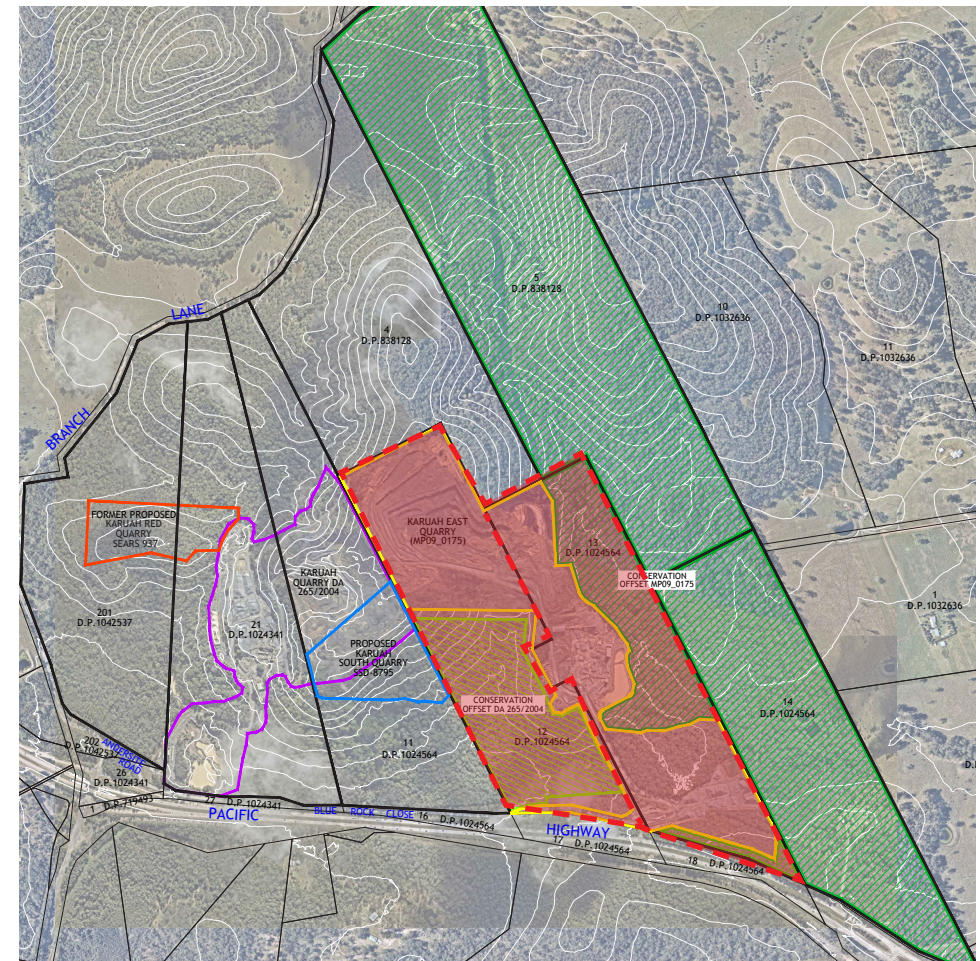


Figure 2 Location plan showing KEQ in the context of the Karuah Quarry Complex

study area



Figure 3 Land zoning diagram (Great Lakes LEP 2014)



Figure 4 Karuah East Quarry / MP09_0175