



CLOUSTON associates

BREEN RESOURCES RECOVERY FACILITY

VISUAL IMPACT ASSESSMENT

S20-0039-R02
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Cover page: Breen Resources Facility

This page: Cronulla State Park looking east toward Cronulla Beach and Boat Harbour Park

BREEN RESOURCES RECOVERY FACILITY LANDSCAPE CHARACTER & VISUAL IMPACT ASSESSMENT

Client:

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Existing Breen Resources Facility looking south east toward the Greenhills Hockey Complex and Boat Harbour Park

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EXECUTIVE SUMMARY



Breen Resources Facility

EXECUTIVE SUMMARY

CLOUSTON Associates has been engaged to prepare a Landscape Master Plan and conduct a Visual Impact Assessment (VIA) for the proposed New Resource Recovery Facility (RRF) and Embellished Marang Parklands.

The Proposal is comprised of the delivery of the Embellished Marang Parklands, the continuation of landfilling on the residual parts of Lot 5 and the construction of the New Resource Recovery Facility.

Specifically, the Proposal involves the following key integrated components:

- Construction and operation of a resource management facility;
- Use of suitable material processed by the New Resource Recovery Facility to cap, contour and re-profile areas of the Proposal Site and to construct the Embellished Marang Parklands on Lots 1122, 1123 and Lot 6
- Re-profiling of parts of the Proposal Site within Lots 1122, 1123 and 6
- Delivery of an activated and integrated community space in the form of the Embellished Marang Parklands on Lots 1122, 1123 and Lot 6.

A Landscape Master Plan has been designed for the proposed land form, and the delivery of the active and passive open spaces in the form of parklands on Lots 1122, 1123 DP794114 and Lot 6 DP1158627.

The proposal will see the existing waste management infrastructure removed and the site of the existing facility integrated into the proposed new parklands.

The VIA addresses the possible effects of change on the landscape. Viewpoints have been selected surrounding the proposal site with a major focus on locations where the proposal would potentially be most visible to the general public. Analysis has been conducted for both the parklands and New Resource Recovery Facility in order to provide a setting context. Note that visual impacts are assessed against existing views.

Viewpoint analysis is accompanied by block model visualisation of the proposed New Resource Recovery Facility relocation within the landscape context.

Of the 7 viewpoints selected and analysed the findings are as follows:

Location	Visual Impact Rating
1.Existing Breen Resources carpark entry	Low
2.Outside existing hockey fields amenity building	Low

EXECUTIVE SUMMARY



Heritage sand dunes.



Public tracks through the dunes.

EXECUTIVE SUMMARY

3.Existing soccer field opposite the Greenhills Skate Park	Moderate/High
4.Captain Cook Drive roundabout	Low
5.Future (Proposed) sports field	Moderate
6.Private land across Lindum Road	Moderate
7A.Existing lookout platform (View during operations)	High
7B.Existing lookout platform (View after operations are completed)	Moderate/High

A range of potential mitigation measures have been considered to reduce any visual impacts. After an analysis of these impacts the most appropriate form of mitigation is through 'Alleviation', focused on new planting that improves the setting for the new buildings and facilities.

Vegetation will reduce the visual impact of aspects of the proposal but the visibility of the buildings and the scale of those buildings is not such as to warrant screening. Plant selection will respond to the natural dune ecology of the area and facilitate rehabilitation of land as well as complementing in the rest of the parklands.

Importantly, while much of the focus of the VIA falls necessarily upon the visual impacts of the proposed built form associated with the New Resource Recovery Facility – determining to what extent the built form will be visually evident and thus the potential for impact on the viewer – the context of this assessment offers a much wider set of significant improvements to the visual amenity for the setting of the New Resource Recovery Facility, that entails recreating a more contextual 'dune type' landform from the existing landfill and the creation of a new and unique coastal dune and heath parkland.

With that in mind it also noteworthy that contemporary VIA methodologies are based on impact ratings that do not include a scale for positive visual contribution. While the visual impacts of the New Resource Recovery Facility can reasonably be said to fall within the standard impact ratings, there is a reasonable argument that the remodelling of landform and the creation of the new parklands, which provide the setting for that New Resource Recovery Facility, could be considered a positive contribution to the local landscape and its visual amenity.

This report therefore concludes that overall, the scale, character and catchment of visual impacts of this proposal are sufficient to allow the proposal to proceed on visual impact grounds.

EXECUTIVE SUMMARY



Prince Steet lookout



Existing public lookout platform

EXECUTIVE SUMMARY



Hockey fields



Existing public lookout platform and walkway

INTRODUCTION



Kurnell

INTRODUCTION

BACKGROUND

The existing recycling infrastructure is located on land that will become the Embellished Marang Parklands. To deliver the Embellished Marang Parklands on Lots 1122 and 1123 and Lot 6, this existing infrastructure needs to be demolished and/or relocated.

Breen is therefore proposing to construct and operate a new integrated resource management facility to consolidate all functional recycling activities within the eastern part of the Proposal Site. This will allow Breen to deliver the recreational space and other publicly accessible parklands in the western part of the Proposal Site to the community. It will also provide improved recycling capability in line with NSW Government priorities and targets to increase resource recovery from the C&D and C&I sectors.

The Proposal is comprised of the delivery of the Embellished Marang Parklands, the continuation of landfilling on the residual parts of Lot 5 and the construction of the New Resource Recovery Facility.

Specifically, the Proposal involves the following key integrated components:

- Construction and operation of a resource management facility, comprising:
 - A New Resource Recovery Facility on the eastern part of the Proposal Site (Lot 5), including consolidation of existing waste management activities within this part of the Proposal Site; and
 - A waste disposal facility, being the continuation of current land restoration, landfilling and contouring operations at the Proposal Site by permanent application of some of the residual waste materials from the New Resource Recovery Facility to land on Lot 5;
- Use of suitable material processed by the New Resource Recovery Facility to cap, contour and re-profile areas of the Proposal Site and to construct the Embellished Marang Parklands on Lots 1122, 1123 and Lot 6;
- Re-profiling of parts of the Proposal Site within Lots 1122, 1123 and 6, with some existing waste materials from those lots.
- Delivery of an activated and integrated community space in the form of the Embellished Marang Parklands on Lots 1122, 1123 and Lot 6, to provide a superior parkland to that proposed under the VPA as detailed in Section 4.4.3 of the EIS (referred to as the Embellished Marang Parklands). This will include, among other things, integrated water usage and management and utilising personnel, plant, material and infrastructure across the whole of the Site.

To enable the above Proposal, the Existing Breen Resources Facility on Lots 1122, 1123 and 6 (this includes those parts of Lots 1122, 1123 and 6 that will comprise the Playing Fields) will be demolished and/or relocated (as required) to Lot 5.

PURPOSE OF THIS REPORT

CLOUSTON Associates has been commissioned to prepare a report in support of a State Significant Development Application (SSDA) to develop a new consolidated state of the art integrated resource facility and public parklands on the current Breen Resources Facility. The Parklands are to be named the Marang Parklands.

A VIA is required as part of the response to the Secretary's Environmental Assessment Requirements (SEAR's) to outline the effect the proposed changes will have on key viewpoints for the proposal. For SEAR's requirements, refer to Appendix C.

THE PROPOSAL SITE

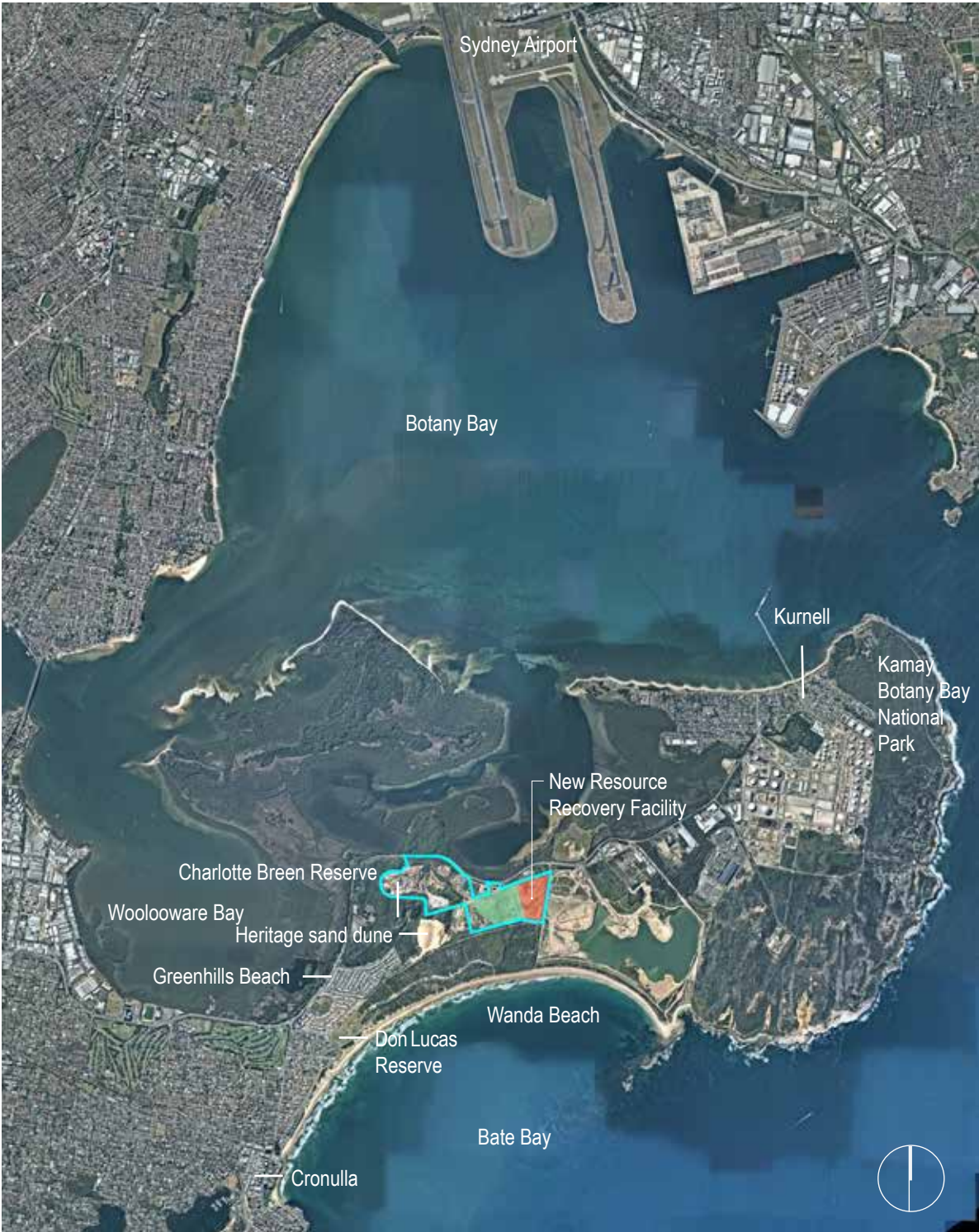


Figure 1: The Proposal Site and Context

THE PROPOSAL SITE

CONTEXT

The Proposal Site is located on the southern side of Botany Bay on the Kurnell Peninsula in the Local Government Area (LGA) of Sutherland Shire (See Figure 1 and 2). The Proposal Site lies approximately 15km south of the Sydney CBD and 3km to the north east of Cronulla town centre; The CBD is visible on the skyline when viewed from the proposal site across Botany Bay.

The Proposal Site is bounded to the north by Captain Cook Drive, providing access from North Cronulla through to Kurnell, as well as the proposal site itself. A new sports field and skate park have been constructed along the Captain Cook Drive frontage. Further to the west on Captain Cook Drive, two hockey fields have been constructed.

To the south of the proposal site is a public reserve, Cronulla State Park, which leads to Wanda Beach, fronting onto Bate Bay.

To the east of the proposal site is bounded by an unconstructed extension of Lindum Road. A public walkway connects to the beach and also gives access to a public viewing platform. Beyond the Lindum Road Reserve is a sand mining site that is being progressively mined for sand used in the construction sector and backfilled with virgin excavated natural materials. The sand mining site has been the subject of development applications in the past including an application for a tourism precinct.

To the west of the proposal site is the Heritage Sand Dune, Charlotte Breen Reserve and Sydney Water's Cronulla sewage treatment plant. Beyond Charlotte Breen Reserve to the south west is the new residential suburb of Greenhills Beach, comprising low density residential housing.



Figure 2: The Proposal Site Context and Lot Boundary



Electricity transmission easement line cross part of the proposal site

THE PROPOSAL SITE

ACCESS

The Proposal Site is accessed by vehicle from Captain Cook Drive. There is a dedicated cycle lane along Captain Cook Drive connecting to the adjacent residential developments at Shearwater Landing and Green Hills Beach. It is a 40-50 minute walk from Cronulla town centre to the proposal site and the 987 loop bus service from Cronulla to Kurnell stops outside the proposal site.

CURRENT USERS

The Proposal Site is used by demolition companies, builders and construction companies as well as the general public to deposit off a variety of construction waste disposal items.

The new recreational area north of the proposal site is used by sporting groups who play on the sports field and hockey fields, and the general public who use the skate park.

The general public also access the public walkway on the eastern boundary, as well as the public lookout to the south.

ENVIRONMENTAL AND CULTURAL HERITAGE

The nearby Cronulla Sand Dune and Wanda Beach Coastal Landscape to the south and west of the proposal site have environmental and cultural significance. They are listed on the State Heritage Register as a landscape of historical and contemporary cultural significance to the Aboriginal community.

However the proposal site itself is a heavily remodelled and degraded dunescape with no documented heritage significance.

INFRASTRUCTURE

An electricity transmission line easement runs along the northern boundary of the proposal site, between the Proposal Site, the sporting field and the skate park recreational area. The easement contains Ausgrid 132kV overhead powerlines.

EXISTING LANDSCAPE CHARACTER

The coastal dune landscape of much of the Kurnell Peninsula has been heavily modified over many decades by sand extraction industries.

The heritage dune to the south west of the proposal site remains intact and the coastal heath of the Cronulla State Park to the south and the Charlotte Breen Reserve are extensive. The construction of the hockey fields and sports fields in the sites northern boundaries provide an organised landscape accompanied by new creative plantings.

However, the proposal site itself is heavily modified with a range of areas of open spoil, source – incidental plant regrowth (both native and weed species) and the presence of large machinery and vehicles, fencing, facility buildings and car parking. A powerline also crosses the proposal site.

In general the landscape character of the proposal site in its present form is of very mixed quality and could not be considered as representing the coastal and dune heath that typically characterises the Kurnell locality.

PLANNING CONTEXT



Sand dune vegetation on the proposal site

PLANNING CONTEXT

Embellished Marang Parkland DA Landscape Masterplan

A masterplan has been developed for the Embellished Marang Parkland. The masterplan provides an opportunity to establish a parkland that responds to the original morphology of the natural dune ecology of the area and extends the recreational opportunity and amenity for the local community. Relevant issues are:

- Benefits to the community and Council outlined in the masterplan are relevant to the proposal site:
 - New recreational opportunities
 - Improved ecological diversity
 - Opportunities for learning
 - Improved access
 - A more sustainable park
 - Minimising maintenance
 - Opportunities for community involvement
- Materials and plant palettes are relevant for the proposal site.

THE PROPOSAL



Figure 3: The proposed Resource Recovery Facility and the adjoining Embellished Marang Parklands

LEGEND

- Project Boundary
- Landscape Boundary

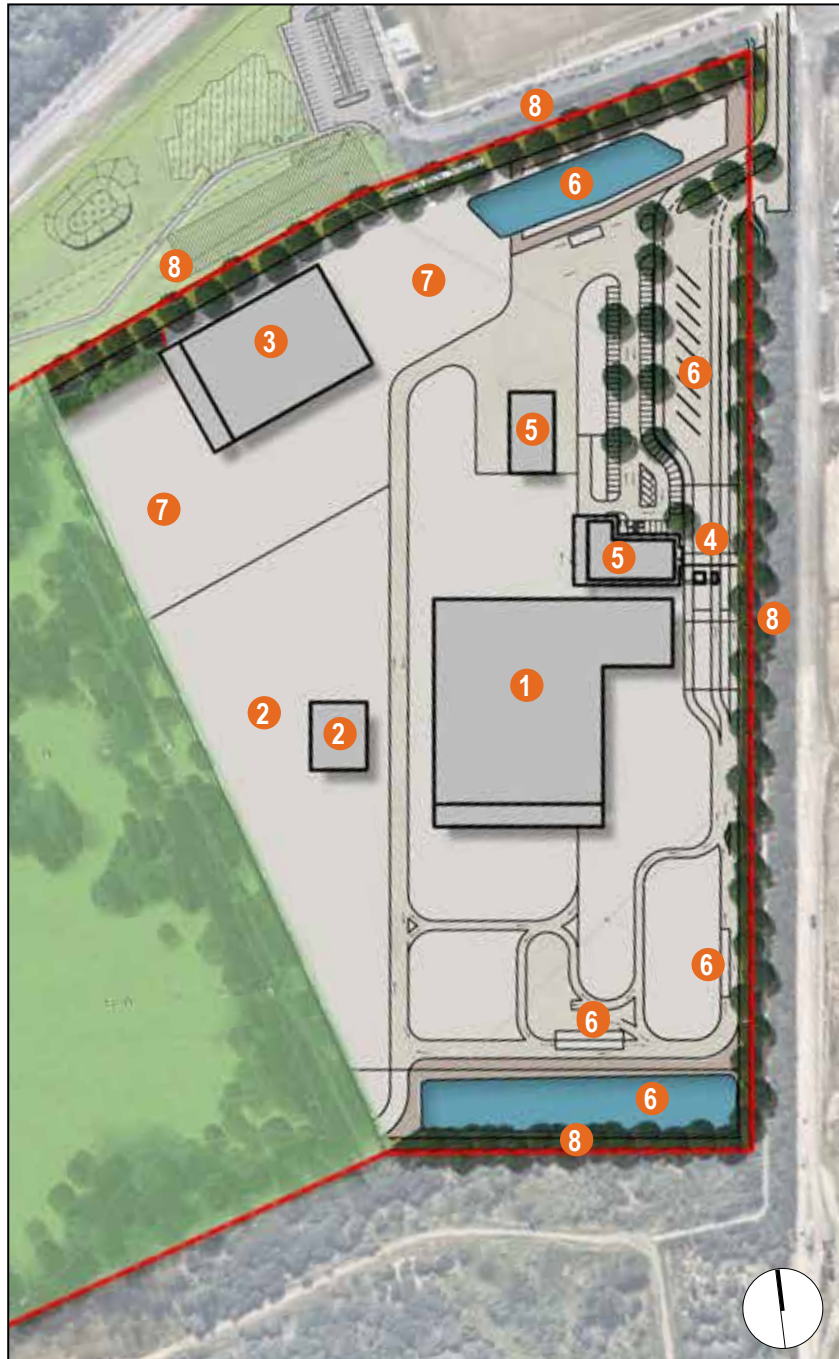
DETAILS FOR THE PROPOSAL

The Proposal involves the following key integrated components:

- Construction and operation of a resource management facility, comprising:
 - A New Resource Recovery Facility on the eastern part of the Proposal Site (Lot 5), including consolidation of existing waste management activities within this part of the Proposal Site; and
 - A waste disposal facility, being the continuation of current land restoration, landfilling and contouring operations at the Proposal Site by permanent application of some of the residual waste materials from the New Resource Recovery Facility to land on Lot 5;
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THE PROPOSAL



RESOURCE RECOVERY FACILITY LAYOUT

The principle elements of the New Resource Recovery Facility illustrated in Figure 4 include:

1. An enclosed 7,500m² (approximate) C&D waste processing building plus 900m² (approximate) Floc/ Bale store
2. 750m² (approximate) Concrete recycling plant with associated concrete processing area
3. 3,500m² (approximate) soil processing plant with associated stockpile area
4. Weighbridges to ensure secure access to the Proposal Site for all commercial vehicles and public drop-off/small vehicles that are bringing material to the Proposal Site or taking material off site
5. Site office, administration building and workshop
6. Associated facilities including a parking area, primary and secondary wheel washes, two recovered water basins for stormwater management and to allow for water recovery and reuse, internal roadways, fencing and visual screening
7. Stockpiles and storage areas for stockpiling of recovered materials
8. Landscape buffer with mounding and planting

Figure 4: Resource Recovery Facility concept

THE PROPOSAL - RESOURCE RECOVERY FACILITY

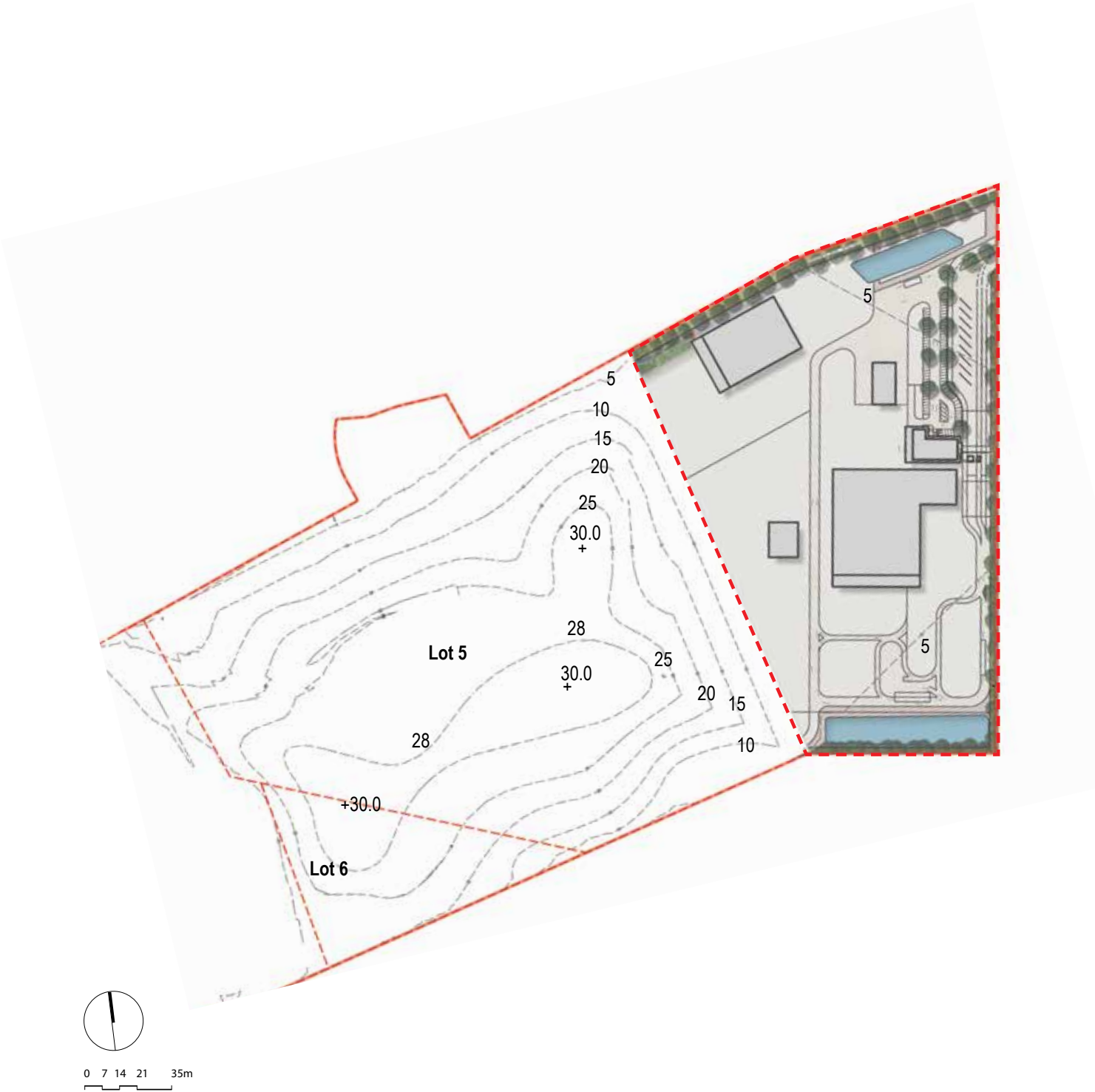


Figure 5: Proposed contours for Lot 5, Lot 6 and New Resource Recovery Facility. The FFL of the proposed buildings in the New Resource Recovery Facility are approximately at RL 5 to RL 6. The proposed land form to the west of the New Resource Recovery Facility (Lot 5 and Lot 6) will partially obscure views from the west.

THE PROPOSAL - RESOURCE RECOVERY FACILITY



Figure 6: Facility Site Details and Extent of Boundary Mounding

VISUAL IMPACT ASSESSMENT

APPROACH TO VISUAL IMPACT ASSESSMENT

Visual Impact Assessments aim to ensure that all possible effects of change and development in the landscape, views and visual amenity are taken into account. It is concerned with how the surroundings of individuals or groups of people may be specifically affected by change in the landscape, both quantitatively and qualitatively.

Judgement as to the significance of the effects is arrived at by a process of reasoning, based upon analysis of the baseline conditions, identification of receptors and assessment of their sensitivity, as well as the magnitude and nature of the changes that may result from any development.

This assessment is an independent report and is based on a professional analysis of the landscape and the proposal at the time of writing. Given that the exact nature and origins of the proposal site's future uses is not known. This assessment has not entailed user stakeholder engagement on visual impact per se.

The analysis and conclusions are therefore based solely on a professional assessment of the anticipated impacts, based on a best practice methodology.

RELEVANT METHODOLOGIES

In the planning context of NSW there are several methodologies documented by the NSW State Government that relate to the assessment of visual impact for varying types of development.

The most relevant to this assessment is EIA-N04 Environmental Impact Assessment Practice Note: Guideline for Landscape Character and Visual Impact Assessment. Roads and Maritime Services, Sydney, NSW.

Importantly also the Commissioners of the NSW Land and Environment Court have developed Planning Principles that relate to visual impact assessment derived from two key cases, namely *Tenacity Consulting v Warringah Council* and *Rose Bay Marina Pty Limited v Woollahra Municipal Council* (2013).

The latter case prompted the Commissioners to establish a suite of Planning Principles relating to public domain views, in which the assessment required five steps to be followed:

Step 1: identify the nature and scope of the existing views from the public domain. This identification should encompass (but is not limited to):

- the nature and extent of any existing obstruction of the view
- relevant compositional elements of the view (such as is it static or dynamic and, if dynamic, the nature and frequency of changes to the view)
- what might not be in the view - such as the absence of human structures in the outlook across a natural area
- is the change permanent or temporary
- what might be the curtilages of important elements within the view.

VISUAL IMPACT ASSESSMENT

Step 2:

identify the locations in the public domain from which the potentially interrupted view is enjoyed. (Note that the Planning Principles give primacy of views from the public domain over views from private land).

Step 3: identify the extent of the obstruction at each relevant location.

Step 4:

identify the intensity of public use of those locations where that enjoyment will be obscured, in whole or in part, by the proposed development.

Step 5:

identify whether or not there is any document that identifies the importance of the view to be assessed. The absence of such provisions does not exclude a broad public interest consideration of impacts on public domain views.

FIELD OF VIEW

It is important to note that the process of assigning visual impact ratings to viewpoints has been undertaken during a site visit and is calculated from a human vision perspective, on the proposal site. Photographic images should be considered representative only.

The photos within the following viewpoint analysis are taken with a camera with the following specification:

- Camera used: NIKON D810
- Camera lens: TAMRON SP 24-70mm F/2.8Di VC USD G2 A032N
- Focal length in 35mm Film 24mm

For more details regarding field of view, refer to Appendix A and B, Visual Impact Photomontage and Methodology Report by Virtual Ideas.

QUANTITATIVE AND QUALITATIVE VALUES

The visual experience of the area and its landscape setting varies depending on the viewer's standpoint within and outside the proposal site and indeed from the viewer's personal perceptions of what they may appreciate in any given setting.

This requires an assessment to address both the quantitative (objective) characteristics of the landscape and views and the qualitative (subjective) assessment of the values ascribed to those scenes.

INDICATIVE VIEW VISUALISATIONS

This viewpoint analysis is accompanied by block model visualisations of the New Resource Recovery Facility relocation within the landscape context. These block models have been created using 3D modelling and geographical mapping software in order to accurately position the New Resource Recovery Facility relocation within the landscape. The images are designed to provide an impression of the size and scale (massing) of the Proposal within the view frame. In final construction the colors, shadows and articulation will, if anything render the buildings less dominant than these block models convey.

VISUAL IMPACT ASSESSMENT



Figure 9: Selected Viewpoints

VISUAL IMPACT ASSESSMENT

CHRONOLOGY OF ASSESSMENT

For this visual impact assessment the sequential assessment steps employed in determining the potential visual impact of the New Resource Recovery Facility relocation are as follows:

- Establishing the baseline – drawing on background documents and site investigation to document the existing landscape character and visual environment of the study area and its visual catchment. This leads to determining the most significant views and vistas currently enjoyed within the surrounding area.
- Visual Impact Assessment - assessment of the visual impacts of proposed development for the New Resource Recovery Facility relocation, set against the planning and design principles. This leads to determining any mitigation measures that may be required to reduce visual impacts from the preferred development option.

SELECTED VIEWPOINTS

The selection of views for detailed evaluation has been based on the following sources:

- Visual assessment policy guidance in particular the NSW Land and Environment Court Planning Principles
- Background documents
- Desktop mapping
- In field evaluation.

View selection criteria have included:

- Locations where the New Resource Recovery Facility is most visible to the public
- Views from the New Resource Recovery Facility at close quarters
- Views from adjoining roads
- Views in the context of the proposed parklands
- One private view from an adjoining landowner

The following view points have been identified and selected as key locations from which the proposal would potentially be most visible to the general public:

1. Existing Breen Resources carpark entry
2. Outside existing hockey fields amenity building
3. Existing soccer field opposite to the Greenhills Skate Park
4. Captain Cook Drive roundabout
5. Future playing field
6. Private land across Lindum Road
7. Existing lookout platform

Note that View 6 is from private adjoining land to the east.

Note also that View 7 has been assessed in two phases (during and post construction to illustrate the impact of the landform on views, independent of proposed vegetation).

EXISTING AND PROPOSED VIEWS

Each view is represented with a photograph of the existing scene followed by a photomontage of the same view with the proposal completed with all associated planting at or about estimated maturity.

While the principle form of mitigation is tree and shrub planting, this planting is already part of the overall design. Hence the rating assessment is made with planting in place.

VISUAL IMPACT ASSESSMENT



Existing View 1



Proposed View 1

VISUAL IMPACT ASSESSMENT

VIEWPOINT 1

LOCATION	Existing Breen Resources carpark entry
DISTANCE	20m
RECEPTORS	Road users
NO. OF VIEWERS	Low
EXISTING VIEW	The existing facility entry and the overhead power lines running adjacent to Captain Cook Drive and into the proposal site dominate the existing view. Existing mature vegetation to the right of the view (along the road verge) obstructs views to part of the proposal site. The existing land fill sits in the background and in the middle of the view frame.

EXPECTED VISUAL IMPACT / MITIGATION

While the existing driveway and entry will be modified it has been shown as it currently exists for purposes of comparison and to reveal the proposed mid-ground and background. The proposal shows an improved visual scene in the form of a new rolling skyline landform and new planting forming a partly canopied ridgeline.

Receptor Type	Public
Viewpoint Number	1
Sensitivity rating of receptor	LOW
Magnitude - Distance	HIGH
Magnitude - Quantum of view	LOW
Magnitude - Period of View	LOW
Magnitude Scale of change	LOW
Overall Magnitude rating	MODERATE/LOW
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	LOW



Viewpoint Location.

VISUAL IMPACT ASSESSMENT



Existing View 2



Proposed View 2

VISUAL IMPACT ASSESSMENT

VIEWPOINT 2

LOCATION	Outside existing hockey fields amenity building
DISTANCE	10m
RECEPTORS	Carpark and amenity building users
NO. OF VIEWERS	Low
EXISTING VIEW	The existing view is dominated by the existing carpark in the foreground with areas of bare spoil and some plants regressing in the mid background. Waste management vehicles and plants can be seen on the horizon.

EXPECTED VISUAL IMPACT / MITIGATION

The proposed sculptured landform which forms the platform for the proposed fields will be highly visible from this view.

The associated planting on the access road to the proposed playing fields (such as tree and understorey planting), have a positive impact on the visual scene from this viewpoint and helps to mitigate the level of change as a result of the proposed earthworks. If required, further planting could be added to parts of the embankments, but this is not a critical mitigation requirement.

Receptor Type	Public
Viewpoint Number	2
Sensitivity rating of receptor	LOW
Magnitude - Distance	HIGH
Magnitude - Quantum of view	LOW
Magnitude - Period of View	LOW
Magnitude Scale of change	LOW
Overall Magnitude rating	MODERATE/LOW
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	LOW



Viewpoint Location.



VISUAL IMPACT ASSESSMENT



Existing View 3 (Note - Panels in the foreground is temporary)



Proposed View 3

VISUAL IMPACT ASSESSMENT

VIEWPOINT 3

LOCATION	Existing soccer field adjoining the amenities building
DISTANCE	30m
RECEPTORS	Soccer field and park users
NO. OF VIEWERS	Low
EXISTING VIEW	The existing view is dominated by the grass at the edge of the soccer field and the vegetated spoil mounds in the background.

EXPECTED VISUAL IMPACT / MITIGATION

Due to proximity, the proposed buildings will be highly visible from this view.

The associated mounding and planting on the New Resource Recovery Facility boundary will reduce visual impacts the most when the trees are fully mature. In effect the visual impacts will be slightly higher until they grow, but this difference would not be sufficient to warrant a change of rating. The mounding and larger shrubs will achieve the bulk of the impact reduction within a short period of planting.

Receptor Type	Public
Viewpoint Number	3
Sensitivity rating of receptor	HIGH
Magnitude - Distance	HIGH
Magnitude - Quantum of view	MODERATE
Magnitude - Period of View	MODERATE
Magnitude Scale of change	MODERATE
Overall Magnitude rating	MODERATE
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	MODERATE/HIGH



Viewpoint Location.

VISUAL IMPACT ASSESSMENT



Existing View 4



Proposed View 4

VISUAL IMPACT ASSESSMENT

VIEWPOINT 4

LOCATION	Captain Cook Drive roundabout at Lindum Road
DISTANCE	110m
RECEPTORS	Road users
NO. OF VIEWERS	Low
EXISTING VIEW	The existing view is dominated by Lindum Road with existing spoil landform and vegetation just discernible in the background, as well as power lines and a light tower. Existing fencing and boundary planting filter views to the sportsfield to the east.

EXPECTED VISUAL IMPACT / MITIGATION

The proposed facility buildings will be visible in the background but due to the distance and the existing vegetation in the foreground, the visual impact rating is expected to be low, as the existing trees will help to filter views of the built form within the proposal.

Proposed tree planting on the New Resource Recovery Facility boundary will assist in further reducing any impacts.

Receptor Type	Public
Viewpoint Number	4
Sensitivity rating of receptor	LOW
Magnitude - Distance	MODERATE
Magnitude - Quantum of view	LOW
Magnitude - Period of View	LOW
Magnitude Scale of change	MODERATE
Overall Magnitude rating	LOW
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	LOW



Viewpoint Location.



VISUAL IMPACT ASSESSMENT



Existing View 5



Proposed View 5

VISUAL IMPACT ASSESSMENT

VIEWPOINT 5

LOCATION	Future (Proposed) sport field
DISTANCE	10m
RECEPTORS	Sport field users
NO. OF VIEWERS	Low
EXISTING VIEW	The existing view is dominated by the current waste management operations in the foreground. Existing hockey fields lie in the mid-ground to the left of the view frame, with city skyline and water views visible in the distance. Powerlines are also visible running from left to right of the view.

EXPECTED VISUAL IMPACT / MITIGATION

The new landform creates a green and regular foreground; however, it cuts off views to the existing hockey fields in the mid-ground. For the most part views to the water of Botany Bay and the CBD skyline in the background remain unaffected.

Receptor Type	Public
Viewpoint Number	5
Sensitivity rating of receptor	HIGH
Magnitude - Distance	HIGH
Magnitude - Quantum of view	LOW
Magnitude - Period of View	MODERATE
Magnitude Scale of change	LOW
Overall Magnitude rating	MODERATE/LOW
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	MODERATE



Viewpoint Location.



VISUAL IMPACT ASSESSMENT



Existing View 6



Proposed View 6

VISUAL IMPACT ASSESSMENT

VIEWPOINT 6

LOCATION	Private land (sand mining use) across Lindum Road
DISTANCE	70m
RECEPTORS	Private land users
NO. OF VIEWERS	Low
EXISTING VIEW	The view is comprised of the haulage road to the left of the foreground with existing sparsely vegetated spoil mounds on the Proposal Site in the background. Powerlines are also visible.

EXPECTED VISUAL IMPACT / MITIGATION

Despite the proximity of the New Resource Recovery Facility buildings, the proposed mounding and tree/shrub planting would filter views to the buildings. Current uses of the land from which this viewpoint is taken generate few visual receptors. The mature vegetation would provide a landscape buffer to the New Resource Recovery Facility buildings.

Receptor Type	Public
Viewpoint Number	6
Sensitivity rating of receptor	LOW
Magnitude - Distance	HIGH
Magnitude - Quantum of view	MODERATE
Magnitude - Period of View	LOW
Magnitude Scale of change	HIGH
Overall Magnitude rating	MODERATE
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	MODERATE



Viewpoint Location.

VISUAL IMPACT ASSESSMENT



Existing View 7



Proposed View 7

VISUAL IMPACT ASSESSMENT

LOCATION	Existing lookout platform
DISTANCE	20m
RECEPTORS	Trail users
NO. OF VIEWERS	Low
EXISTING VIEW	The existing view is in an elevated position from a viewing platform with a footpath and mature vegetation in the foreground. The viewing platform sits on a minor promontory and is principally oriented towards the beach and surf at Bate Bay, but also offers views to across Botany Bay to the north. Views of the water and city skyline sit in the distance.

VIEWPOINT 7A

(View during operations)

Note: 2 montages have been provided for views 7 (during operations and after operations to illustrate the effect of the proposed landform with and without vegetation). This has been provided specifically with respect to this viewpoint being a public lookout.

EXPECTED VISUAL IMPACT / MITIGATION

The proposed landform and constructed mounds will dominate this view, and remove the view of Botany Bay to the northeast. Although proposed planting will significantly increase the level of vegetation visible (which generally has a positive impact) the loss of the city skyline, and specifically the water views, will result in a 'High' visual impact, with any further mitigation techniques unlikely to change the 'High' rating. The presence of ongoing operation and source view of the New Resource Recovery Facility also contribute to the 'High' rating.

Receptor Type	Public
Viewpoint Number	7A
Sensitivity rating of receptor	HIGH
Magnitude - Distance	HIGH
Magnitude - Quantum of view	HIGH
Magnitude - Period of View	MODERATE
Magnitude Scale of change	HIGH
Overall Magnitude rating	HIGH
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	HIGH



Viewpoint Location.



VISUAL IMPACT ASSESSMENT



Existing View 8



Proposed View 8

VISUAL IMPACT ASSESSMENT

LOCATION	Existing lookout platform
DISTANCE	20m
RECEPTORS	Trail users
NO. OF VIEWERS	Low
EXISTING VIEW	The existing view is in a elevated position from a viewing platform with a footpath and mature vegetation in the foreground. The viewing platform sits on a minor promontory and is principally oriented towards the beach and surf at Bate Bay, but also offers views to across Botany Bay to the north. Views of the water and city skyline sit in the distance.

VIEWPOINT 7B

(View after operations are completed)

EXPECTED VISUAL IMPACT / MITIGATION

The proposed landform and constructed mounds will dominate this view. Although proposed planting will significantly increase the level of vegetation visible (which generally has a positive impact) the loss of the city skyline, and specifically the water views, will result in a 'High' visual impact, with any further mitigation techniques unlikely to change the 'High' rating. The presence of ongoing operation and source view of the New Resource Recovery Facility also contribute to the 'High' rating. The presence of vegetated mounds and trees in the fore mid ground will reduce the visible impacts when compared with the operations phase.

Receptor Type	Public
Viewpoint Number	7B
Sensitivity rating of receptor	HIGH
Magnitude - Distance	HIGH
Magnitude - Quantum of view	MODERATE
Magnitude - Period of View	MODERATE
Magnitude Scale of change	MODERATE
Overall Magnitude rating	MODERATE
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	MODERATE/HIGH



Viewpoint Location.



MITIGATION RECOMMENDATIONS AND CONCLUSION



MITIGATION RECOMMENDATIONS AND CONCLUSION

APPROACHES TO MITIGATION

There are typically six broad approaches to mitigating the visual impacts of any change to a scene that entails built form development. These are through:

- **The Design Brief** - typically best practice for visual management of a proposed development entails identification of significant views in planning documents and the integration of these into the Design Brief, also including any specific guidance as to how the design should respond to minimising such impacts
- **Avoidance** – where the visual impact of the proposal is deemed of a scale that cannot be mitigated by any of the approaches outlined below, this approach implies relocating the proposal elsewhere on the proposal site with lesser visual impacts or not proceeding with the proposal on the proposal site at all
- **Reduction** – typically this approach seeks to mitigate impacts through the reduction of some part of the proposed structure or development (ie. reduced height or omission of parts of the built structure/s)
- **Alleviation** – this approach entails design refinements to the proposal to mitigate visual impacts. These refinements might typically include built form articulation, choice of material and colours and/or planting design
- **Offsite Compensation** – where none of the above approaches will provide adequate visual impact mitigation for offsite visual receptors, this approach entails offsite works on the land from which the viewpoint is experienced (eg screening close to the viewpoint).
- **Management** – in this approach the mitigation response typically entails an operational or management action such as construction management.

Set out below are the relevant responses to these approaches with respect to the proposed facility relocation.

RECOMMENDED MITIGATION

A summary of the relevance of any of the six forms of mitigation outlined above is briefly summarised as follows:

- **Design Brief** – the design parameters for the location and design of the Recovery Facility have altered in order to mitigate the visual impacts of the New Resource Recovery Facility
- **Avoidance** - there is no viable alternative location for this facility
- **Reduction** - built form is to the minimum scale and height required to meet operational requirement as environmental controls
- **Alleviation** - planting and minor mounding are reasonable forms of mitigation for this proposal. However, the design for the New Resource Recovery Facility already includes mounding and tree planting, so no additional measure would appear required.
- **Offsite Compensation** - there are no significant viewpoints from around the proposal site's locality that are sufficiently impacted to warrant off site compensation.
- **Management** - there are no operational options that will reduce visual impacts, assuming that lighting design will already to minimize light spill.

MITIGATION RECOMMENDATIONS AND CONCLUSION

CONSTRUCTION IMPACTS

The Proposal will involve a construction phase with associated additional visual impacts. The following activities are likely to occur:

- clearing of vegetation
- setting up of the proposal site compounds
- stockpiling
- earthworks
- the proposal site fencing and lighting
- increased the proposal site traffic including heavy vehicles

During the construction period, all viewpoints studied within this report are likely to have increased visual impacts. Views of the proposal site compounds, storage areas and increased the proposal site traffic (including trucks) will possibly lead to solve a reduction in visual amenity. Impacts will reduce to an acceptable level as viewing distance and screening vegetation increase. These visual impacts will be of a temporary nature and will reduce for all viewpoints once the proposal is complete.

OPERATIONAL IMPACTS

The most likely significant operational impact when the New Resource Recovery Facility is commissioned would be from external lighting at night. Some ambient light is likely to be visible, but all lighting design should seek to reduce light spill. It should also be noted that the existing and proposed sporting facilities will also involve extensive night lighting.

CONCLUSION

A comprehensive visual impact assessment of the proposal has been conducted. The study has identified and evaluated the key views before progressing to an assessment of quantitative and qualitative criteria using best practice methodology.

Whilst it is acknowledged that the perceived visual impact of the proposal will vary from person to person, the methodology used to evaluate visual impact in this instance is informed by internationally accredited approaches and CLOUSTON Associate’s experience in the field of visual impact.

This methodology takes into consideration the local context and references both international standards and local legislation, policy and the NSW Land and Environment Court Principles. A summary of the ratings is shown below:

Location	Visual Impact Rating
1.Existing Breen Resources carpark entry	Low
2.Outside existing hockey fields amenity building	Low
3.Existing soccer field opposite to the Greenhills Skate Park	Moderate/High
4.Captain Cook Drive roundabout	Low
5.Future (Proposed) sport field	Moderate
6.Private land across Lindum Road	Moderate
7A.Existing lookout platform (View during operations)	High
7B.Existing lookout platform (View after operations are completed)	Moderate/High

MITIGATION RECOMMENDATIONS AND CONCLUSION

In weighing up the overall implications of the visual impacts described in this assessment, we note the following conclusions can be drawn on the impacts of the New Resource Recovery Facility relocation for the visual amenity of the surrounding area:

- The remodelling of the earthworks to create a rolling landform for the future parklands will create an improved visual amenity for many of the views
- The Resource Facility buildings will be visible in several views but when accompanied by planting the buildings will not be visually dominant.
- New planting of native species (using a coastal headland dune plant palette) in the foreground, mid-ground and/or background of many views will improve visual amenity
- There will be some loss of views from existing locations, (especially view 7). However, more elevated views of similar vistas would be available close by on Lot 6 and across from the proposed lookout at the high point of the Embellished Marang Parklands.

In summary therefore the visual impacts of the New Resource Recovery Facility are not significant from public views or adjoining private land. Furthermore, the wider parkland setting in which the facility will lie will not cause a negative visual impact to the surrounding area and can be said to provide a significant improvement in visual amenity when compared with the existing scene.

Importantly, while much of the focus of the VIA falls necessarily upon the visual impacts of the proposed built form associated with the New Resource Recovery Facility – determining to what extent the built form will be visually evident and thus the potential for impact on the viewer – the context of this assessment offers a much wider set of significant improvements to the visual amenity for the setting of the New Resource Recovery Facility that entails recreating a more contextual 'dune type' landform from the existing landfill and the creation of a new and unique coastal dune and heath parkland.

With that in mind it also noteworthy that contemporary VIA methodologies are based on impact ratings that do not include a scale for positive visual contribution. While the visual impacts of the New Resource Recovery Facility can reasonably be said to fall within the standard impact ratings, there is a reasonable argument that the remodelling of landform and the creation of the new parklands, which provide the setting for that New Resource Recovery Facility, could be considered a positive contribution to the local landscape and its visual amenity.

This report therefore concludes that overall, the scale, character and catchment of visual impacts of this proposal are sufficient to allow the proposal to proceed on visual impact grounds.

APPENDICES



APPENDIX A - DETAILED METHODOLOGY

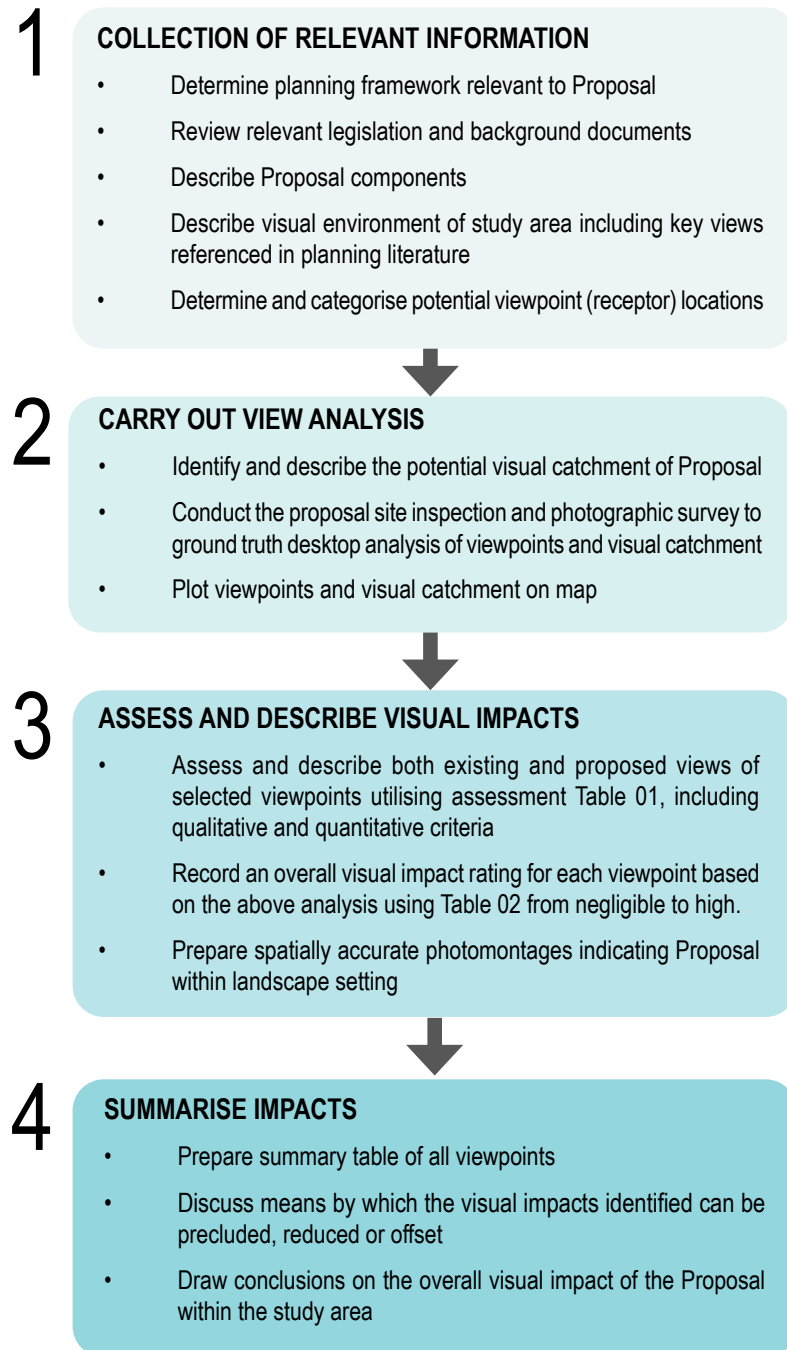


Figure 1 - Summary of CLOUSTON methodology.

APPENDIX A - DETAILED METHODOLOGY

METHODOLOGY

Landscape Character and Visual Impact Assessment aims to ensure that all possible effects of change and development in the landscape, views and visual amenity are taken into account. It is concerned with how the surroundings of individuals or groups of people may be specifically affected by change in the landscape, both quantitatively and qualitatively.

The Commission of the NSW Land and Environment Court have developed Planning Principles that relate to visual impact assessment and have developed assessment steps to be followed:

Step 1: Identify the nature and scope of the existing views from the public domain. This identification should encompass (but is not limited to):

- the nature and extent of any existing obstruction of the view
- relevant compositional elements of the view (such as is it static or dynamic and, if dynamic, the nature and frequency of changes to the view)
- what might not be in the view – such as the absence of human structures in the outlook across a natural area
- is the change permanent or temporary
- what might be the curtilages of important elements within the view

Step 2: Identify the locations in the public domain from which the potentially interrupted view is enjoyed. (Note that the Planning Principles give primacy of views from the public domain over views from private land).

Step 3: Identify the extent of the obstruction at each relevant location.

Step 4: Identify the intensity of public use of those locations where that enjoyment will be obscured, in whole or in part, by the proposed development.

Step 5: Identify whether or not there is any document that identifies the importance of the view to be assessed. The absence of such provisions does not exclude a broad public interest consideration of impacts on public domain views. Heritage items (such as Aboriginal and environmental) should also be considered, as should direct impacts on the local community.

QUANTITATIVE AND QUALITATIVE VALUES

The visual experience of the area and its landscape setting varies depending on the viewer's standpoint within and outside the proposal site and indeed from the viewer's personal perceptions of what they may appreciate in any given setting.

This requires an assessment to address both the quantitative characteristics of the landscape views (what elements form the scene? What features dominate? What breadth of view is offered – narrow vista or wide panorama?) and the qualitative assessment of the values ascribed to those scenes.

The quantitative-based strategies are less debatable (can that view still be seen when the new built form is introduced? How much of that view will we lose?) than is establishing the qualitative strategies (which view is more important to retain?); the latter could be perceived differently by every viewer that sees that scene. Such variation of perception is particularly acute around the built form.

FIELD OF VIEW

The choice of lens, camera format and final presentation has a significant bearing on the understanding of the proposal site photos. There is a balance to be struck in seeking to replicate the human eye with respect to focal length, looking straight ahead and the experience of the view with its wider context, so that a proposal's appearance and its place within its environment can be recognised and understood.

In recognising that no photographic image can exactly replicate the view of the human eye, extensive literature has been published on the nearest equivalent combination of focal length and field of view of a camera that best emulates human vision.

Much of this literature is contradictory with a further complication to this process being the differing sensor formats of digital cameras which affect the apparent focal length and field of view.

It is important to note that the process of assigning visual impact ratings to viewpoints is undertaken during a site visit and is calculated from a human vision perspective on site. Photographic images should be considered to be representative only.

Viewpoint photos have been taken with a camera with the following specification:

- Camera used: NIKON D810
- Camera lens: TAMRON SP 24-70mm F/2.8Di VC USD G2 A032N
- Focal length in 35mm Film 24mm

Refer to Appendix B, Visual Impact Photomontage and Methodology Report by Virtual Ideas for more details.

ASSESSMENT METHODOLOGY

CLOUSTON Associates has developed a best practice methodology based on internationally accredited approaches and 20 years of experience in the field of visual assessment. There are several critical dimensions demonstrated through this assessment and evaluation:

- Ensuring all receptors (viewers) have been adequately identified, even at distance, with emphasis on public domain views
- Comprehensive evaluation of context to determine visual catchment of the proposal site from these areas
- Being clear on and separately defining quantitative impacts (distance, magnitude, duration etc) as against qualitative impacts (viewer type and context of view)

APPENDIX A - DETAILED METHODOLOGY

- Providing a clear rationale for how impacts are compared and contrasted
- Ensuring photomontages include views from the highest potential impact locations, identified from analysis above
- Being clear on the differing forms of mitigation options, namely avoidance, amelioration (eg design), mitigation (eg screening) and compensation (on or offsite)

ASSESSMENT PROCESS

The initial step involves the collection of relevant information regarding the Proposal, and its compatibility with the surrounding landscape. Desktop analysis is undertaken to determine the visual catchment of the Proposal and potential visual receivers through the use of mapping and topography analysis. Site visits are then undertaken to confirm the visual catchment and visual receivers.

The next step is to carry out a view analysis that identifies the potential visual catchment and areas from which the Proposal Site may be viewed. Viewpoints are analysed and defined into different categories and sensitivities in terms of their land use context and spatial relationship to the Proposal Site and the landscape in which they are located. A photographic inventory from identified key viewpoints is suggested, plotting the viewpoints on a map.

An evaluation matrix is then completed that summarises the full range of viewer situations identified, assessing the indicative contribution to potential visual impact of key factors for each selected viewpoint. The scores for these key factors are then averaged to determine a High, Moderate, Low or Negligible impact rating.

VIEW SELECTION CRITERIA

The selection of views for detailed evaluation for the Proposal are based on the following sources:

- visual assessment policy guidance in particular the NSW Land and Environment Court Planning Principles;
- desktop mapping;
- in-field evaluation;
- SEARS requirements.

Informed by the above considerations, the selection criteria for views to be assessed in detail will include potentially impacted views from:

- the public domain (principally streets, parks and waterways)
- pedestrians and cyclists
- views and vistas identified within local planning documents
- close and direct views
- transport (private and public)
- distant and filtered views
- any impacted heritage areas or items.

APPENDIX A - DETAILED METHODOLOGY

CHRONOLOGY OF ASSESSMENT

For this LCVIA the sequential assessment steps employed in determining the potential visual impact of the Proposal Site are as follows:

Stage 1:

Establishing the baseline – drawing on background documents and the proposal site investigation to document the existing landscape character and visual environment of the study area and its visual catchment. This leads to establishing the most significant views and vistas within and surrounding the Proposal Site.

Stage 2:

Visual Impact Assessment - assessment of the visual impacts of the Proposal Site set against the planning and design principles. This leads to determining any mitigation measures that may be required to reduce visual impacts from the preferred development option.

RATING SYSTEM

The overall visual impact rating of a proposal on any given viewpoint/visual receptor is based on themes of magnitude and sensitivity, recorded using a four band scoring system from negligible to high.

- Sensitivity: each visual receptor type has an inherent and varied sensitivity to change in the visual scene based on the personal context in which their view is being experienced (ie. At home, on the street, in a park etc). This sensitivity has a direct bearing on the perception of visual impact experienced by the receptor and qualifies the quantitative impacts
- Magnitude: a measure of the magnitude of the visual effects of the development within the landscape. A series of quantitative assessments are studied, including distance from development, quantum of view, period of view and scale of change
- Overall Impact Rating: The severity of these impacts is calculated using matrix Table 1 – based on a combination of magnitude and sensitivity.

	HIGH MAGNITUDE	MODERATE MAGNITUDE	LOW MAGNITUDE	NEGLECTIBLE MAGNITUDE
HIGH SENSITIVITY	HIGH	HIGH - MODERATE	MODERATE	NEGLECTIBLE
MODERATE SENSITIVITY	HIGH - MODERATE	MODERATE	MODERATE/ LOW	NEGLECTIBLE
LOW SENSITIVITY	MODERATE	MODERATE/LOW	LOW	NEGLECTIBLE
NEGLECTIBLE	NEGLECTIBLE	NEGLECTIBLE	NEGLECTIBLE	NEGLECTIBLE

Table 1: Visual Impact Rating as a combination of Sensitivity and Magnitude. Source: Environmental Impact Assessment Practice Note: Guideline for Landscape Character and Visual Impact Assessment (EIA-N04). Roads and Maritime Services.

APPENDIX A - DETAILED METHODOLOGY

	FACTOR		NEGLIGIBLE	LOW IMPACT	MODERATE IMPACT	HIGH IMPACT
QUALITATIVE	Viewer Sensitivity	Each visual receptor type has an inherent and varied sensitivity to change in the visual scene based on the personal context in which their view is being experienced. This sensitivity has a direct bearing on the perception of visual impact experienced by the receptor and qualifies the quantitative impacts. Number of viewers also has a bearing on sensitivity. Viewpoints have a varied number of potential receivers depending on whether the viewpoint is public or private, the popularity of the viewing location and its ease of accessibility. Views from public reserves and open space are often given the highest weighting due to the increased number of viewers affected.	Vacant lot, uninhabited building, car park.	Minor roads, service providers.	Residential properties with limited views, commercial properties, scenic public roads (eg official tourist routes).	Public open space, public reserves, living areas or gardens/ balconies of residential properties with direct views of Proposal.
	Distance of View	The effect the Proposal has on the view relating to the distance between the Proposal and the visual receptor. The distances are from the approximate boundary of the Proposal Site.	Over 3000m	Viewing distance of between 1000-3000m	Viewing distance between 100m and 1000m	Viewing distance between 0 and 100m
QUANTITATIVE	Quantum of View	The quantum of view relates to the openness of the view and the receptor's angle of view to the scene. A development located in the direct line of sight has a higher impact than if it were located obliquely at the edge of the view. Whether the view of the Proposal is filtered by vegetation or built form also affects the impact, as does the nature of the view (panoramic, restricted etc.). A small element within a panoramic view has less impact than the same element within a restricted or narrow view.	Only an insignificant part of the Proposal is discernible	An oblique, highly filtered or largely obscured view of the Proposal or a view where the Proposal occupies a very small section of the view frame.	A direct view of the Proposal or its presence in a broader view where the Proposal occupies a moderate proportions of the view frame.	A direct view of the Proposal or its presence (sometimes in a very narrow highly frames view), where the Proposal occupies the greater proportion of the view frame.
	Period of View	The length of time the visual receptor is exposed to the view. The duration of view affects the impact of the Proposal on the viewer - the longer the exposure the more detailed the impression of the proposed change in terms of visual impact.	Less than 1 second	1 to 10 seconds: often from a road or walking past.	1 to 5 minutes: usually from a road/ driveway entrance, walking past.	Significant part of the day: usually residential property.
	Scale of Change	Scale of change is a quantitative assessment of the change in compositional elements of the view. If the proposed development is largely similar in nature and scale to that of existing elements in the vicinity, the scale of change is low. If the development radically changes the nature or composition of the elements in the view, the scale of change is high. Distance from the development would accentuate or moderate the scale and variety of visible elements in the overall view and hence influence this rating.	Proposal barely discernible	Elements and composition of the view would remain largely unaltered.	Elements within the view would be at odds with existing features in the landscape	Elements within the view would greatly dominate existing features in the landscape

Table 2: Sensitivity and Magnitude Rating Criteria.

APPENDIX A - DETAILED METHODOLOGY

LOCATION		• Viewpoint location
DISTANCE		• Distance to the proposal site boundary
RECEPTORS		• Description of viewers
NO. OF VIEWERS		• Number of viewers
EXISTING VIEW		• Description of current view
EXPECTED VISUAL IMPACT		
		• Description of expected view

Receptor Type	Private	
Viewpoint Number	2	
Sensitivity rating of receptor	MODERATE	• Assessment matrix table
Magnitude - Distance	MODERATE	
Magnitude - Quantum of view	MODERATE	
Magnitude - Period of View	MODERATE	
Magnitude Scale of change	HIGH	
Overall Magnitude rating	MODERATE	
Overall VISUAL IMPACT RATING (combination of sensitivity and magnitude ratings)	MODERATE	• Overall visual impact rating

Table 3: Example of Assessment Format Before Mitigation Measures.

PHOTOMONTAGES

Virtual Ideas have produced spatially accurate photomontages in line with the NSW Land and Environment Court guidelines. See Appendix B - Photomontage and Methodology Report.

APPENDIX B - VI PHOTOMONTAGE AND METHODOLOGY REPORT



BREEN RESOURCE CENTRE

Visual impact photomontage and methodology report
October 2020

VIRTUAL IDEAS

APPENDIX C - SEAR'S

Planning Secretary's Environmental Assessment Requirements

**Section 4.12(8) of the *Environmental Planning and Assessment Act 1979*
Schedule 2 of the Environmental Planning and Assessment Regulation 2000**

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