

## 1.3 STUDY METHOD

The Montemare team developed a three phase project methodology to meet the requirements of the project brief and to deliver the project outcomes Council sought. A detailed methodology is presented below:

STAGE	TASKS
Product & Market Scoping	<ul style="list-style-type: none"><li>• Project &amp; Area Familiarisation</li><li>• Broad Context &amp; Opportunities</li><li>• Case Studies &amp; Industry Trends</li><li>• Market &amp; Demand Analysis</li><li>• Opportunities Appraisal</li></ul>
Investment Appraisal	<ul style="list-style-type: none"><li>• Industry/Commercial Sector Sounding</li><li>• Attractive Investment Product Concepts</li><li>• Investment Benefits Case</li></ul>
Options Analysis (TBC)	<ul style="list-style-type: none"><li>• Priority Concept Description</li><li>• Cost Estimation</li><li>• Likely Business &amp; Operational Performance</li><li>• Option Analysis &amp; Recommendation</li></ul>
Draft & Final Reporting	<ul style="list-style-type: none"><li>• Summary Key Findings</li><li>• Draft Report</li><li>• Consultation &amp; Review</li><li>• Final Report</li></ul>

## Section Two: Product & Market Scoping

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## 2.0 INTRODUCTION

This section provides a summary of the key study findings, from the market and product scoping. It includes:

- Site & area overview
- Previous research review
- Industry trends
- Market & demand analysis

## 2.1 SITE & AREA OVERVIEW

Hornsby Quarry is to the west of the Hornsby Central Business District with vehicular access from Dural Street and Quarry Road and within 10 minutes walk of the Hornsby train station.

The Quarry is adjacent to residential properties to the north, Berowra Valley National Park to the west, Council lands within Old Mans Valley to the east and bushland known as Hornsby Park and owned by the department of Sustainable Natural Resources to the south.



Figure 1B01: Plan of the combined study area indicated by the red outline, including the Hornsby Quarry Acquisition area (green outline) Old Mans Valley lands (yellow outline) and Hornsby Park and other land parcels in red.

The total area of the site that could be considered part of the broader recreation and adventure sports precinct is in the order of 45 ha, characterised by a range of parcels of land and landscape settings, summarised in the table below.

The site has the capacity and potential to deliver both high quality local open space and adventure recreation tourism opportunities. Executed correctly these activities will complement and support the success of the other.

Council has expressed a desire to maintain a balance between public recreation and commercial recreation/adventure sports tourism.

The Old Man Valley is the most obvious choice for local open space and associated facilities, given the topography and access, whereas the Quarry site is better suited to more commercially orientated adventure recreation activities and tourism development. The latter includes support infrastructure and services such as visitor arrival areas, Café/restaurant, function centre and accommodation.

Name	Ownership	Size (ha)	Zoning	PoM Setting/ Categories	Hierarchy level	Existing facilities
<b>Hornsby Quarry</b>	HSC Community Land	20	RE1 Public Recreation	n/a	Potential Regional	• No public access
<b>Old Mans Valley Open Lands</b>	HSC Community Land	11 (6 for use)		• Natural Area • General Community Use	Regional	• Mountain bike trails • Walking trails
<b>Hornsby Park</b> (Site includes Hornsby Pool)	Crown Reserve under the care and control of Council	14.4		• Natural Area • Sportsground • General Community Use • Park	District (Regional with Pool)	• Playground • Barbecue • Amenities • Car park • Hornsby Olympic Pool
<b>Other parcels of land</b>	Council owned bushland or Crown Reserve or operational land	-		(Undeveloped road reserve)	Local with potential for District/ Regional in combination with development of study area	• No facilities
<b>Total size</b>		<b>45.4</b>				

Table ES01 Summary of study area land parcels

The consultant teams experience with similar projects indicates, the current site zoning – RE1 Public Recreation, standard definition, allows for some but not all potential commercial tourism development or mix that might prove appropriate and viable for the site and this will need to be addressed during more detailed planning and development.

The site has outstanding manmade and natural beauty that would be well suited to adventure and nature based recreation and tourism, as the following photos taken from the sites DRAFT Recreation Opportunities Masterplan depict.

The sites natural beauty arises not only from the site itself but of the cavernous nature and relatively unspoilt bush setting of the whole valley. Once inside the quarry there is a sense of remoteness due to the lack of obvious urban and residential development and this contributes to the attractiveness of the site for commercial adventure recreation and tourism, as well as community openspace.

Council will need to consider how to protect the sites “visual catchment” if it is to maximise the community and commercial adventure recreation and tourism opportunities at the site. This could be achieved by introducing further planning controls on the height and visual impact of building development in the catchment, so as to prevent development breaking through the canopy of the surrounding bushland to the north, west, south and east.



*Hornsby Quarry - view from western side of quarry, looking east showing diatreme*



*Hornsby Quarry - view from northern side of quarry, looking south showing fill areas*



*Hornsby Quarry - view from northern side, at lake level of quarry, looking south west towards south western fill zone*

## 2.2 INDUSTRY TRENDS & CASE STUDIES

The global adventure sector has evolved in leaps and bounds over the past two decades from specialised and often marginal individual operations in National Parks and Forests to the new world of adventure parks and precincts. These new parks offer a multi-pronged adventure experience centred around an adventure hero. The hero experience is what differentiates the Park with the most successful being a combination of re-invented all aged ropes courses and multi level zip line journeys. This trend is also evident in Australia with new adventure parks in major cities from Launceston to Cairns and Melbourne to Perth in the last 3-5 years.

While the Zip often forms the 'hero' experience, the industry has become commercially sustainable through offering a range of complementary year round adventure products suitable to schools, business and leisure groups and individuals. Such product may be kayaking and sailing, rock climbing and abseiling, mountain biking and horse riding. Summer Sledding is an evolving product strong in European and American ski villages which may take hold locally in the medium term in Australia.

### 2.2.1 Adventure Parks

Wikipedia provides a good definition and description of an adventure park as follows:

[http://en.wikipedia.org/wiki/Adventure\\_park](http://en.wikipedia.org/wiki/Adventure_park)

While a ropes course (challenge course) is sometimes a *challenging outdoor personal development and team-building activity*, an **Adventure Park** or "Aerial" / "Treetop" / "European-Style" Adventure Park has clearly a *more recreational purpose*.

**"Recreational-oriented" Adventure Parks / Ropes Courses** are usually designed for a larger volume of visitors. They do not follow a specific educational concept, but see the individual, physical and mental challenge as a predominantly recreational activity. Neither climbing techniques nor special/specific physical fitness experience are necessary. Typical slogans are: *Have Fun, Test your Courage, Overcome your Own Fears, Be Outside, Be in the Nature, Do some Physical Activities, etc.*

In an Adventure Park, the visitors independently run a variety of trails of increasing difficulty levels. Each trail consists of several poles or trees that are connected by different acrobatic elements or zip-lines. For the safety of the visitors, a belay system is required for the high elements/trails.

Adventure Parks can be broken down into a huge variety of specific types. They differ according to the following main criteria:

- Type of parks: stationary / mobile
- Structural System: trees / poles / buildings / metallic structure
- Target visitors: all / kids from 4 years old / disabled
- Height of the lifeline: "mid-height", "out of reach"

- Belay system: self / permanent / continuous
- Locations: touristic / urban

Forest Adventure Parks are very popular. They take advantage of the beauty of a forest, of the trees (no investment in poles) and offer an outdoor activity surrounded by nature. Not only do they offer an adventure “at height” in a forest, but also the benefit for customers of experiencing the spectacular natural beauty of trees, hills, cliffs and/or rivers. In forest parks, there is a particular focus on tree-friendly installation. In most cases, the platforms are held to the trees through the principle of friction. When the exercise elements are mounted the trees are protected by coats of wood or rubber to prevent rubbing from the ropes.

Depending on how they are used and where they are located, parks on poles are an excellent alternative. They offer complete freedom in terms of park design and location but, at the same time, require higher investment (in the poles). The heat of the summer can be a challenge. A mix of poles/trees at the edge of a forest has the potential to work well.

Indoor parks have the great advantage of being an “all year round” operation but with the corresponding weakness of that strength at times when fine weather encourages outdoor activities. These trails are often built on a modular metallic structure. New parks on wood poles have shown that an indoor park can also provide a good experience.

Adventure Parks can be found in a multitude of places/locations. Examples of trends:

- Close to large tourist destinations
- In Ski Resorts as an attraction during summer months (a boom in Switzerland and several European countries)
- In Amusement Parks, Holiday Clubs/Villages, Hotel Club and Resorts, etc.
- Urban parks or close to conglomerations (e.g. the park in the center of Lyon, France)
- Close to a significant pool of potential customers, such as a large Shopping Mall, Zoo, Campsite, etc.
- Small (kids) parks for shopping malls (as indoor), city events, etc.

Large Adventure Parks usually have several trails of increasing difficulty levels and can reach up to 10 trails. With 10 to 20 acrobatic elements per trail, the park can easily reach up to 200 elements (it is usually between 40 and 200 elements).

The majority of trails are for everyone from the age of 7 years old (sometimes 10). The difficulty level starts at a low level or “green trail” and progresses to a very challenging level or “black trail”. Specific trails for kids from 4 years are very popular with families

and provide a boost to the business (up to 20-30% more clients). Sometimes there are specific trails for the disabled.

Children love Adventure Parks. In a park they can act independently, try and fail and try again, and overcome their own fears without any risk (a continuous belay system is strongly recommended). Thanks to the variety of levels, each time they can push their own boundaries and reach their own challenges. This is a perfect outdoor activity (with individual, physical and mental challenges) to learn through play.

The acrobatic elements are artificial obstacles (exercises) made from ropes, nets and wood in various forms, and which are installed at different heights in trees. The clever arrangement of such obstacles encourages many basic forms of movement such as climbing, hand over hand, balancing, holding, slipping and sliding. A good mix of elements and zip-lines increases the diversity and interest of parks – People love zip-lines.

Recreational-oriented Adventure Parks are usually designed for a **larger volume of visitors**: In Europe 10,000 to 60,000 or even more participants per season are common and often with a high variation pattern (high attendance on weekends and during vacations).

The recently opened TreeTops adventure park at Western Sydney Parklands achieved 30,000 visits in its first year of operation (Source. ALM, Issue 2 2014).

## 2.2.2 Summary of Industry Trends

The case studies of existing adventure sport attractions indicate the following key trends and success factors:

- Heavy investment in “Adventure Parks” that offer multiple-product, to enable operators to diversify revenue streams, and that meet market needs/demand across a range of ages, skill, ability and levels of adventure.
- These are “high-volume” visitor attractions commonly attracting between 10,000 and 60,000 visits per annum.
- Co-located and in close proximity to existing activity hubs and/or leisure precincts, assisting in providing multiple product, high exposure and footfall traffic and supporting services and amenity.
- Highly accessible location both to a large source market and that has good physical access by way of transport.
- Products must be highly differentiated, unique and creative. The emphasis is on “new” and “one off”. Successful adventure sport attractions are of a sufficient quality to attract people in their own right. (ie they don’t need a destination approach – they are a primary attractor).

- Importantly, adventure sport tourism operators do not need to have high quality support buildings (ie interpretive centre/café etc) that might impose prohibitive start-up capital costs on the business. These are desirable, but not essential and can come at a later date and be provided by other operators as a value add and secondary source of income to Council.
- Product expansion, renewal and reinvention are important to the long-term sustainability of adventure sport tourism businesses. In this sense it is important that the site location, size and characteristics lend itself to expansion over time into new product areas.
- Group, corporate and school markets are very important to the ongoing viability of adventure sports tourism businesses. These markets are not the highest yield markets but form base business turnover.
- The ability to operate year round and night and day operations is important to offer variety and unique experiences day to day.

## 2.3 MARKET & DEMAND ANALYSIS

This Section summarises the market profile, competitive environment and potential demand for adventure sports tourism product in the Hornsby area.

### 2.3.1 Market Assessment

Hornsby Shire is located in Sydney's northern suburbs - about 25 kilometres from the Sydney GPO.

#### Residential Capture

The following table shows serviced age groups for Greater Sydney. These percentages have been applied to filter down each capture area to aged 12-60.

### Age structure - service age groups

Greater Sydney		2011	
Service age group (years)	Number †	% †	
Babies and pre-schoolers (0 to 4)	298,848	6.8	
Primary schoolers (5 to 11)	382,758	8.7	
Secondary schoolers (12 to 17)	325,871	7.4	
Tertiary education and independence (18 to 24)	418,937	9.5	
Young workforce (25 to 34)	676,836	15.4	
Parents and homebuilders (35 to 49)	961,037	21.9	
Older workers and pre-retirees (50 to 59)	537,730	12.2	
Empty nesters and retirees (60 to 69)	394,291	9.0	
Seniors (70 to 84)	314,285	7.2	
Elderly aged (85 and over)	81,043	1.8	
<b>Total population</b>	<b>4,391,636</b>	<b>100.0</b>	

Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.

### Northern Sydney Regional Catchment

There is a large potential source market within the Northern Sydney 35km catchment area.

Shire or Suburb Area	Aged 12-60	Aged 12-17
Hornsby Shire 165,090	109785	12217
North Sydney 67,722	45035	5011
Mosman 29,605	19687	2191
Parramatta 166,856	110959	12347
Auburn City 73,738	49036	5457
Holroyd City 99,163	65943	7338
Blacktown City 301,096	200229	22281
Penrith City 178,465	41465	4614
Hawkesbury City 62,353	41465	4614
Manly 43,371	28842	3209

Pittwater Council 61,201	40699	4529
Warringah Council 140,741	93593	10415
<b>TOTALS</b>	<b>846737</b>	<b>94223</b>

With 81.8% of adults (+15 years) participating in exercises, sport and recreation in the past 12 months (ERASS, 2012) the potential market capture has been reduced to 692,631 residents aged 12-60 including 94,223 students aged 12-17 within a 35 km radius.

## Tourism Capture

Tourism for this research was defined by: Fly-in: Visitors using air transport to enter Sydney and Leisure: Visitors who have travelled to Sydney for holiday purposes or to visit friends or relatives.

### Domestic

According to the National Visitor Survey (NVS), undertaken by Tourism Research Australia (TRA), in 2013, Sydney received nearly 8.0 million domestic overnight visitors including:

'Visiting friends and relatives (VFR)' (37.4%) was the largest purpose for visitors to the region, followed by 'holiday or leisure' (29.2%) and 'business' (27.8%)

### International

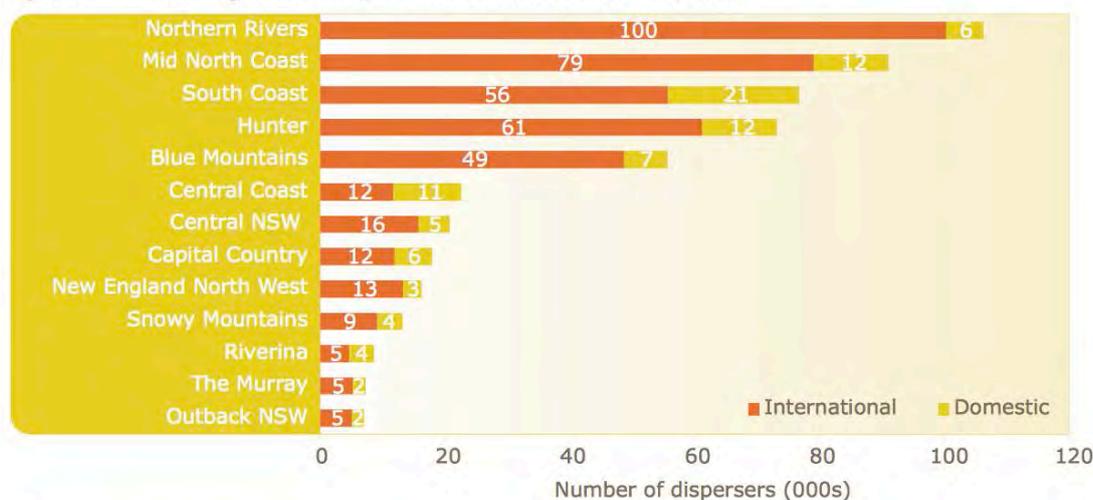
In 2013, Sydney received over 2.8 million international overnight visitors

'Holiday / pleasure' (54.3%) was the largest purpose for visitors to the region, followed by 'visiting friends and relatives (VFR)' (24.2%) and 'business' (14.3%)

[http://www.destinationnsw.com.au/\\_data/assets/pdf\\_file/0020/235190/Sydney-YE-Sep-13.pdf](http://www.destinationnsw.com.au/_data/assets/pdf_file/0020/235190/Sydney-YE-Sep-13.pdf)

Dispersers were most likely to stay overnight in the Northern Rivers (106,000 visitors), followed by Mid North Coast (91,000), the South Coast (77,000), the Hunter (73,000) and the Blue Mountains (56,000) (Figure 2).

**Figure 2** NSW regions visited by international and domestic dispersers



Source: TRA 2011  
 Domestic visitor estimates are a yearly average over a 3-year base period – years ending June 2009 to June 2011; International visitor estimates are for year ending June 2011.

Drawing international and domestic visitors from Sydney and the 23,000 visiting the Central Coast is the primary opportunity.

### Travellers to Hawkesbury River, Central Coast and Northern NSW

1.3 million visitors with 62% from Sydney totals 809,900 travellers from Sydney to Central Coast

‘Holiday or leisure’ (52.2%) was the largest purpose for visitors to the region, followed by ‘visiting friends and relatives (VFR)’ (40.8%)

Private or company vehicle’ (91.0%) was the most popular form of transport used by visitors to the region

With 81.8% physically active the potential is adjusted to 662,498 travellers to Central Coast.

[http://www.destinationnsw.com.au/\\_data/assets/pdf\\_file/0017/235403/Central-Coast-YE-Sep-13.pdf](http://www.destinationnsw.com.au/_data/assets/pdf_file/0017/235403/Central-Coast-YE-Sep-13.pdf)

### Market Summary

- 692,631 residents aged 12-60 (including 94,223 students aged 12-17) within a 35 km radius.
- 662,498 Sydney travellers to the Hawkesbury River and Central Coast
- 4.56m domestic travellers to Sydney visiting friends and relatives or on holiday

- 2.19 m international travellers to Sydney visiting friends and relatives or on holiday
- Corporate team building events, size unknown.

The commercial operators have indicated the combined market potential is substantial and of a sufficient size to support a viable year round adventure tourism business in the Hornsby area.

Further supporting their positive market assessment is the close proximity of the train station. The easily accessible train link further enhances the operator's ability to capture the full market potential within the Northern Sydney catchment. The other leisure investment within the precinct (ie Mountain Bike Trails and Aquatic Centre) is also highly appealing as it suggests the beginnings of a sport/leisure precinct.

### 2.3.2 Competitive Assessment

The following provides a high level assessment of potential competitors to potential commercial product within the Hornsby capture region:

#### Hornsby

- Berowa Valley National Park (rock climbing)
- Hawkesbury River

No adventure commercial operations of significance were identified

#### Central Coast

- Glenworth Valley (Horse Riding, Quad Bikes)  
<http://www.glenworth.com.au>
- Tree Top Adventure Park (High Ropes and Zip)  
<http://www.treetopadventurepark.com.au/home/central-coast>

#### Northern & Western Sydney

##### Horse Riding

- Palomino Riding School
- Samarai Park Riding School and Agistment
- Sydney Equestrian Centre
- Operators in Galston, Arcadia, Glenorie and Dural areas.

##### Rock Climbing

- Bloc Climbing Centre, North Parramatta
- Climb Fit, St Leonards
- The Edge Rock Climbing Centre, Castle Hill

##### Abseiling

- Abseiling Sydney, Darlinghurst

#### Indoor Adventure/Playground

- Peak Pursuits, Castle Hill (Indoor Activity Centre)  
<https://www.peakpursuits.com.au/home.php>

#### School Adventure Education/Camps

Anecdotal evidence suggests there are a number of adventure education operators in the region such as 'Southbound Adventures', supported by a large number of school accommodation/outdoor education facilities in rural Hornsby and North West region, which would support high levels of school group usage.

#### Adventure Parks

- Sydney Tree Top Safari and Tree Top Adventure Park Elizabeth Drive Abbotsbury, Western Sydney  
<http://www.treetopadventurepark.com.au/index.php>
- Urban Jungle Adventure Park, Sydney Olympic Park  
<http://www.urban-jungle.net.au>
- Trees Adventure, Grose River Park, Yarramundi  
<http://treesadventure.com.au/grose-river-park/>

### Summary of the Competitor Review

The competitor Review indicates:

- No commercial adventure sport operations of significance were identified in the Hornsby area.
- Limited outdoor adventure sport opportunities in the region. Main adventure attraction is the Treetop Adventure Park, Central Coast.
- Existing cluster of river based and equestrian/horse riding activities in the region.
- Up to four adventure parks in the capture region and recent investment in outdoor and indoor adventure facilities indicating growth and investment in the sector, mimicking international growth trends.
- Discussions with National Parks and Wildlife and local tourism organisations indicates more mountain bike and horse riding product is coming on line within the next 2-3 years, and significant interest by commercial operators and events operators in adventure sport product in the region.

Discussions with commercial operators indicate while there are a handful of Adventure Parks (4) in the capture market, there is room for further growth of this product in the immediate area provided the customer experience is highly differentiated. Discussions with the operators suggests that the Hornsby Quarry site offers the level of differentiation required due to site features - unique Quarry Landscape, including steep slopes potential for water and long-span crossing and surrounding natural environment.

## Section Three: Investment Appraisal

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### 3.0 INTRODUCTION

This section provides guidance as to the commercial attractiveness of the Hornsby Quarry site opportunity for the primary attraction product – adventure sports. It also outlines potential investment commitments and expectations and possible benefits to Hornsby.

The investment appraisal will need to be tested in the future with more detailed business feasibility, design and development planning, envisaged as later stages of this project. Further investigations should also be undertaken into other commercial opportunities evident at the site (ie Café/Restaurant/Function Centre and Accommodation).

This Section includes the following:

- Adventure Sports Commercial Operator Sector Sounding
- Attractive Investment Product Concepts
- Investment Benefits Case

### 3.1 COMMERCIAL OPERATOR SOUNDING

The project team undertook interviews with a range of international, national and local operators that have experience and a track record of delivering successful adventure sports tourism product.

Operators were given a summary of the site and asked a range of questions around:

- whether you see any potential Adventure Sports Tourism Opportunity at the site,
- the extent of that opportunity and
- would your organisation consider investing in the site and what would your expectations be if you were to invest in a development at that site.

Six operators were spoken to including:

- Mark Challis, Trees Adventures
- Sandrine Gaymard, Ecoline
- John Sharpe, Riverlife Brisbane
- Nigel Hobbs, AJ Hackett Bungy
- Sarah Vincent, BridgeClimb (Declined to comment)
- GoApe (Declined to comment)

The following table provides a summary of the commercial operator responses.

INVESTOR ATTRACTIVENESS CRITERIA	SITE STATUS	TREES ADVENTURE	ECOLINE	RIVERLIFE	AJ HACKETT BUNGY
Access to local population	See Statistics	<ul style="list-style-type: none"> <li>Catchment area strong</li> </ul>	<ul style="list-style-type: none"> <li>Catchment area strong</li> </ul>	<ul style="list-style-type: none"> <li>Catchment area strong for schools and locals, corporate tougher</li> </ul>	Tourism will drive the majority of business
Tourism Potential	See Statistics	<ul style="list-style-type: none"> <li>Ability to attract Sydney tourism</li> </ul>	<ul style="list-style-type: none"> <li>Ability to attract Sydney tourism</li> </ul>	<ul style="list-style-type: none"> <li>Needs to be significant enough to attract tourists from Sydney and CC</li> </ul>	Low AJ only invests in high traffic tourism areas
Power, water and waste management infrastructure	Water Y Power Y Waste N	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>
Adequate toilets	No	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>	<ul style="list-style-type: none"> <li>Supplied by Council</li> </ul>
Adequate parking for cars and coaches	100 existing Limited expansion	<ul style="list-style-type: none"> <li>100 sealed and 100 grass overflow + coach</li> </ul>	<ul style="list-style-type: none"> <li>100 sealed and 100 grass overflow + coach</li> </ul>	<ul style="list-style-type: none"> <li>80 sealed and 80 grass overflow + coach</li> </ul>	

INVESTOR ATTRACTIVENESS CRITERIA	SITE STATUS	TREES ADVENTURE	ECOLINE	RIVERLIFE	AJ HACKETT BUNGY
Buildings for booking and information, food and beverage, storage and maintenance	Crusher Building (run down structure)	<ul style="list-style-type: none"> <li>Investor to supply</li> <li>Basic buildings (refurbed cargo containers)</li> </ul>	<ul style="list-style-type: none"> <li>Investor to supply</li> <li>Basic buildings (refurbed cargo containers)</li> </ul>	<ul style="list-style-type: none"> <li>Investor to supply</li> <li>Basic buildings (refurbed cargo containers)</li> </ul>	<ul style="list-style-type: none"> <li>AJ build something iconic as their site centre</li> </ul>
Public access / transport	2 Train Lines from Sydney to North Coast (10 minute walk to site)	<ul style="list-style-type: none"> <li>Train access highly appealing</li> </ul>	<ul style="list-style-type: none"> <li>Train access highly appealing and difficult to find</li> </ul>	<ul style="list-style-type: none"> <li>Train access highly appealing</li> </ul>	NA
Site Beauty and Appeal	See images	<ul style="list-style-type: none"> <li>Very High</li> <li>Water and site slopes key elements</li> </ul>	<ul style="list-style-type: none"> <li>Very High</li> <li>Water and site slopes key elements</li> </ul>	<ul style="list-style-type: none"> <li>Very high</li> <li>Water essential</li> </ul>	<ul style="list-style-type: none"> <li>Very high</li> <li>Water and dramatic environment high appeal</li> </ul>
Site Product Suitability (multiple products)	Water, Rock Faces, Open Parklands,	<ul style="list-style-type: none"> <li>Surrounding land and water makes site highly appealing for multiple product, a must for commercial success</li> </ul>	<ul style="list-style-type: none"> <li>Surrounding land and water makes site highly appealing for multiple product, a must for commercial success</li> </ul>	<ul style="list-style-type: none"> <li>Surrounding land and water makes site highly appealing for multiple product, a must for</li> </ul>	<ul style="list-style-type: none"> <li>Ability to deliver</li> </ul>

INVESTOR ATTRACTIVENESS CRITERIA	SITE STATUS	TREES ADVENTURE	ECOLINE	RIVERLIFE	AJ HACKETT BUNGY
				commercial success	
Existing Public	Mountain Biking	MTN Biking seen as a positive and public product welcomed	<ul style="list-style-type: none"> <li>• MTN Biking seen as a positive and public product welcomed</li> </ul>	<ul style="list-style-type: none"> <li>• MTN Biking seen as a positive and public product welcomed</li> </ul>	<ul style="list-style-type: none"> <li>• MTN Biking seen as a positive and public product welcomed</li> </ul>
Commercial Agreement		<ul style="list-style-type: none"> <li>• 20 year lease essential</li> <li>• Long term commitment and willingness to work through tougher earlier years with incentives</li> <li>• Some concern about proximity houses and impact on operation flexibility</li> </ul> Open 7 days from day 1	<ul style="list-style-type: none"> <li>• 20 year lease essential</li> <li>• Long term commitment and willingness to work through tougher earlier years with incentives</li> </ul>	<ul style="list-style-type: none"> <li>• 20 year lease essential</li> <li>• Ability for operators to dictate their opening days and hours (tough first 4 years)</li> </ul>	<ul style="list-style-type: none"> <li>• 20 year lease essential</li> </ul>

INVESTOR ATTRACTIVENESS CRITERIA	SITE STATUS	TREES ADVENTURE	ECOLINE	RIVERLIFE	AJ HACKETT BUNGY
Product		<ul style="list-style-type: none"> <li>• High Ropes</li> <li>• Zip Journey (over water)</li> <li>• Water product</li> <li>• They have 3 sites and 1 45 minutes away but this is strongly differentiated</li> </ul> Flexibility to operate day and night	<ul style="list-style-type: none"> <li>• High Ropes</li> <li>• Zip Journey (over water)</li> <li>• Water product</li> <li>• Summer Sledding</li> </ul>	<ul style="list-style-type: none"> <li>• High Ropes</li> <li>• Zip Journey (over water)</li> <li>• Water product</li> </ul>	<ul style="list-style-type: none"> <li>• Bungy</li> <li>• Zip</li> <li>• Swing</li> </ul>

### 3.1.1 Summary of Commercial Investor Sounding

The following key messages can be taken from the commercial operator comments:

- The site natural offering and its location are highly appealing with a high impact water zone and rail access being key success factors
- Operation facilities can be simple and low cost supplied by the investor, however moving power, waste and water around the site as required would require Council investment, perhaps a partnership
- Operators seek a long term lease minimum 20 years and concessions during early years (1-4) to ensure visibility through start-up (schools and corporate groups take time to grow)
- The opportunity to expand into multiple product streams is highly appealing

## 3.2 INVESTMENT AND COMMITMENT

The following summarises likely required Operator and Council investment and commitment:

### Council

Council would be requested to provide:

- Lease
  - 20 Year Lease (minimum)
  - Lease concessions in years 1-4 (by negotiation)
  - Granting operator control over days and hours of operation (will start weekends and grow as business grows)
- Infrastructure
  - Water, power and waste management to site booking centre / hub (near existing car park)
  - Sealed car parking for 100 with grass overflow (numbers by negotiation) + adequate coach turnaround and drop-off / pick-up

## Operator

The operator will commit to:

- All product infrastructure
- All buildings including booking centre and small café / food spot
- Marketing
- All operations.

### 3.3 ATTRACTIVE PRODUCT CONCEPTS

Operators were asked to identify attractive or likely product concepts suitable for the Hornsby Quarry. However due to the overall attractiveness of the site and the importance of products being “new”, “highly differentiated” and “first to market” for success operators were unwilling to provide specific details about potential products and concepts.

Final product concepts would have to be determined following actual site visits and more detailed analysis on behalf of the operator and subject to a commercial in confidence tendering and or EOI process. However, having said this, the general product theme would most likely be an Adventure Park (or precinct) taking advantage of the site distinctive Quarry, over water and natural bushland characteristics.

## 3.4 INVESTMENT BENEFITS CASE

This section outlines the likely financial and non-financial returns to Hornsby from the establishment of commercial adventure tourism at the Hornsby Quarry and Old Man's Valley site.

### 3.4.1 Key Benefits

The research consultation and findings reveal the following key benefits likely to result from adventure sport tourism investment at Hornsby Quarry include, but are not limited to:

#### Economic Development

- Potential driver/catalyst for the expansion of adventure tourism, adventure sports events and hospitality business in the Shire.
- Enhanced Brand & Marketing Power, leveraged through an "evident" adventure sports identity and through the ability to host major events, providing media exposure and attracting additional visitors to the region.
- Direct and indirect employment benefits through additional \$ turnover in the local economy.
- Resident attraction & retention, through enhanced local lifestyle, education and economic opportunity.

#### Community Development Benefits

- Market Development - create a desire to be involved in sport and recreation and potential additional visits to new aquatic centre by being part of a sports-activity precinct/hub.
- Unique offering to local residents (natural/physical/cultural), something not previously offered in the shire.
- Enhanced community facilities & social inclusion.
- Exposure to global trends and world class recreation facilities.

#### Health Benefits

- Increased participation in sport & recreation activity improving physical, social & mental health.

- Preventative health and reduced impact on health budgets, through reduced impact of chronic diseases and prolonged healthy aging.

### Education Benefits

- Enhanced attractiveness of local education options and Tafe campus, through the ability to offer quality student campus life services.
- Potentially assisting with the retention of local students & young people in the area.

### Environmental Benefits

- Protection of EEC's, significant geological features and landscapes.
- Encouragement of participation in active transport.
- Potentially low impact and sustainable economic activities (resource use and impact on biodiversity).

## 3.4.2 Possible Financial Return to Council

Operators indicated a fixed rent plus income share is the most common lease payment arrangement they have experienced operating on government/community lands. The main reason for this model is the shared commercial risk (and reward) between the operator and land owner.

Operators were asked to indicate the potential market \$ value of a fixed rent plus income share arrangement at Hornsby Quarry. The following scenario reflects the collective thoughts of the adventure tourism operators interviewed on potential lease structure and market \$ value.

The scenarios and potential financial returns are considered conservative, as they relate to a single activity only. Meaning, they don't take into account the potential for multiple adventure tourism products and services that could be operated out of the site. Similarly, they do not take account of other potential tourism opportunities at the site such as visitor services, food & beverage, functions/events and accommodation.

We have developed two indicative scenarios to illustrate likely financial returns to Council - "base" and "optimistic". All earnings per head are factitious and should not be considered earnings.

### Base Case

Based on a "base case" scenario of:

- Pax per year - 40,000 visitors
- Entry Prices - \$30 pax
- Base rent - \$10,000 per month, up to 20,000 pax
- Income Share - 15% 20,000-30,000 pax, reducing to 10% at 30,000 + pax

This would see the following outcomes:

- Business revenue - \$1,200,000 pa
- Fixed Rent - \$120,000 pa
- Income Share - \$75,000 pa
- Annual Rent - \$175,000 pa

## Optimistic Case

Based on a more 'optimistic' scenario of:

- Pax per year - 40,000 visitors
- Entry Prices - \$40 pax
- Base rent - \$10,000 per month, up to 20,000 pax
- Income Share - 15% 20,000-30,000 pax, reducing to 10% at 30,000 + pax

This would see the following outcomes:

- Business revenue - \$1,200,000 pa
- Fixed Rent - \$120,000 pa
- Income Share - \$100,000 pa
- Annual Rent - \$220,000 pa

Based on these scenarios, this would see a return to Council in the order of \$175,000 to \$220,000 pa from a single Adventure tourism operation.

## Section Four: Conclusions

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## 4.0 INTRODUCTION

This Section outlines the project team's findings and recommended next steps for council's consideration.

### 4.1 TOURISM OPPORTUNITY APPRAISAL

While the Master Plan identified a range of potential recreation and visitor experiences, the following experiences are considered to be commercially operational:

- Café / Restaurant
- Function/Meeting Space
- Adventure Play (kids)
- Summer Sledding
- Zip Line
- Tree Tops Walks / High Ropes
- Mountain Biking
- Water Activities
- Rock Climbing
- Abseiling

Drawing from the site assessment, demand potential, competitive landscape and investor interviews the Hornsby Quarry site is perfectly placed to attract Adventure Park investment – That is delivering a range of adventure sports tourism product and experiences across the year and to broad markets.

The sites natural characteristics, proximity to population catchments and rail transport make this site highly appealing to the adventure investor.

It is likely, at a later stage and subject to the successful establishment of the adventure sports tourism attraction that further value add investment in food & beverage, meetings/function, major events and accommodation suitable to the group/corporate travel market could also be added to the site.

The successful establishment of adventure sports and other tourism activities on the site are likely to provide many local economic, social and environmental benefits. Economically the Quarry attraction and associated activities will enhance local economic development through increased visitation and spend, direct and indirect employment, brand value and the stimulation of further commercial investment in complementary tourism activities, services and supply chain. The local community will

benefit by enhanced facilities and lifestyle, the encouragement of participation in social and cultural activities and health benefits associated with physically active lifestyles.

Environmental benefits include the protection of EEC's, significant geological and landscapes and low impact development.

## 4.2 NEXT STEPS

The consultant team recommend the following next steps:

- Ensure and confirm landform(s) that provides for a flexible future use of the site that includes a range of adventure sport tourism & recreation pursuits. This includes cavernous nature of quarry, over water options, exposed rock face and natural landscape setting.
- Investigate and protect the landscape setting of the Quarry and OMV.
- Confirm site vision, Council objectives and parameters for the sites development.
- Undertake feasibility study to identify:
  - Most feasible site stabilisation and fill scenarios,
  - Identify a range of priority development components/options that are responsive to the sites stabilisation and fill scenarios, vision and objectives.
  - the financial business case for priority development options, under each stabilisation and fill scenario, identifying operational and capex costs, governance and management model, funding and financing, project delivery strategy,
  - site concept masterplan,
  - Community benefits and implications across the whole of life development.
- Prepare an Expression of Interest package that seeks submissions for the commercial use of the quarry for a range of adventure recreation pursuits (following confirmation of the landform of the site)
- Prepare and implement stakeholder communications strategy.

## APPENDIX E: EARLY DESIGN OPTIONS

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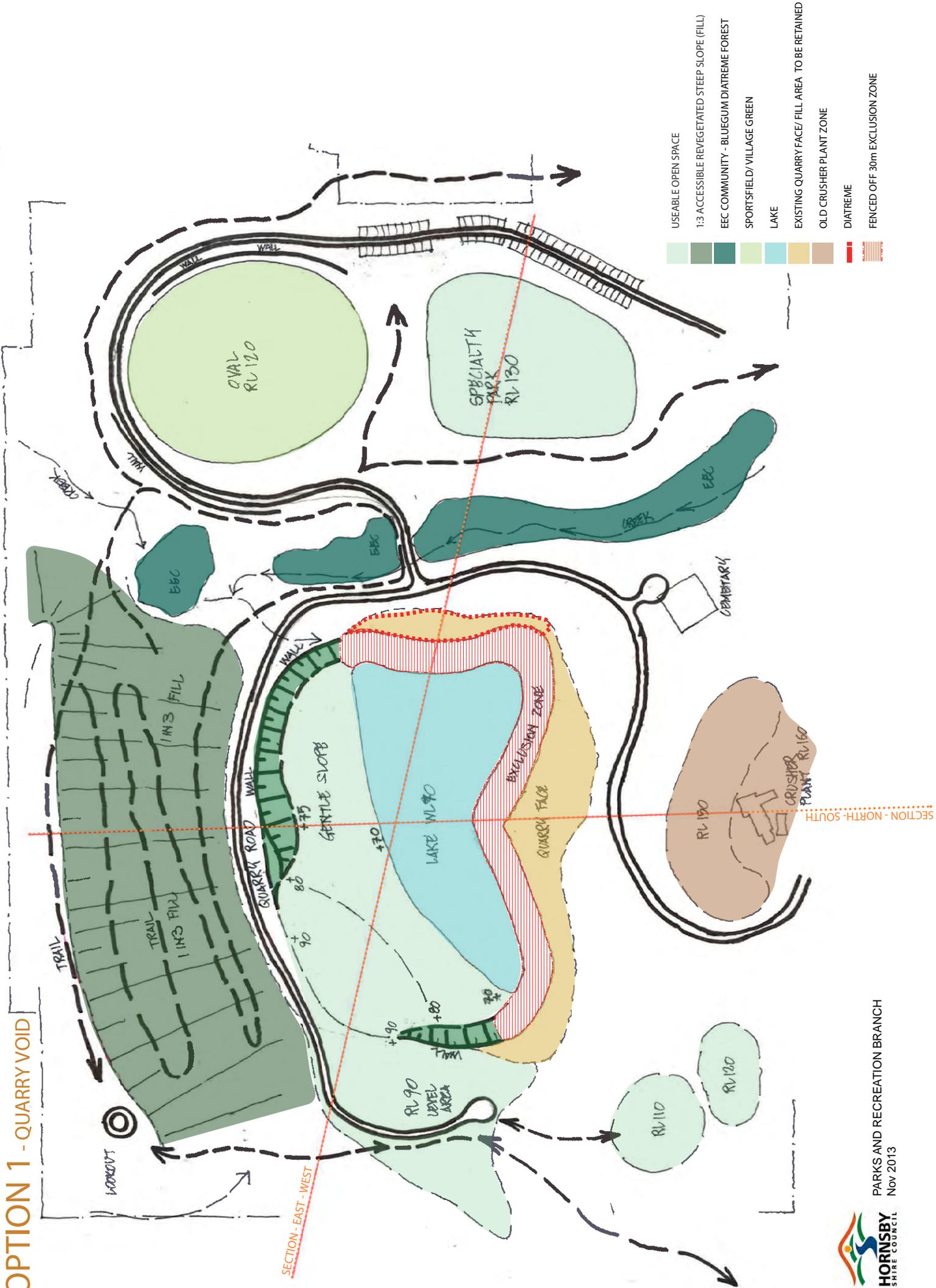
### 8.1 LANDFORM DESIGN OPTION REVIEW

As part of the Recreation Potential Study HSC prepared a series of Early Design Options. These precede the Landform options included in the main body of the report. The following options were assessed in a similar way to the Landform Design Options:

1. Usable Open Space - type, total amount and accessible space that can be used for recreation.
2. Local community needs - open space for residential areas to the north and south of the site focusing on passive recreation (picnics, walking, bushwalking, play) and active recreation (informal ball games, outdoor exercise).
3. Regional attraction - facilities/activities within the site that could attract visitors from all over Sydney (and beyond). The approach should be to cater for a 'day out' with complimentary activities and services provided on site. The site should also be designed and promoted in such a way that it encourages repeat visitation.
4. Mix and range of recreation activities - cater for a wide range of groups. The 45Ha site could accommodate a range and mix of activities. However the range and mix should be complimentary and make the most of the unique location and characteristics of the site.
5. Specialised recreation potential - focusing on one particular recreation activity could exclude a large group of potential visitors. As with the mix and range of activities above, any specialised recreation activities should be chosen because of their appropriateness to the site. For instance adventure activities won't be for everyone. However being able to watch others participating in them, take in site views, have lunch, go for a walk etc. will appeal to the average person/family.
6. Overall site experience - unique qualities (remoteness, wilderness, cultural heritage and quarry walls and structures) are retained and enhanced.
7. Existing environment - Endangered Ecological Communities are retained, protected and enhanced where appropriate.
8. Potential financial gain - ability to generate income for Council and enhance the local economy.

As HSC continue to develop and refine landform design options these headings can be used to assess the options and determine the recreational value of each option.

# OPTION 1 - QUARRY VOID

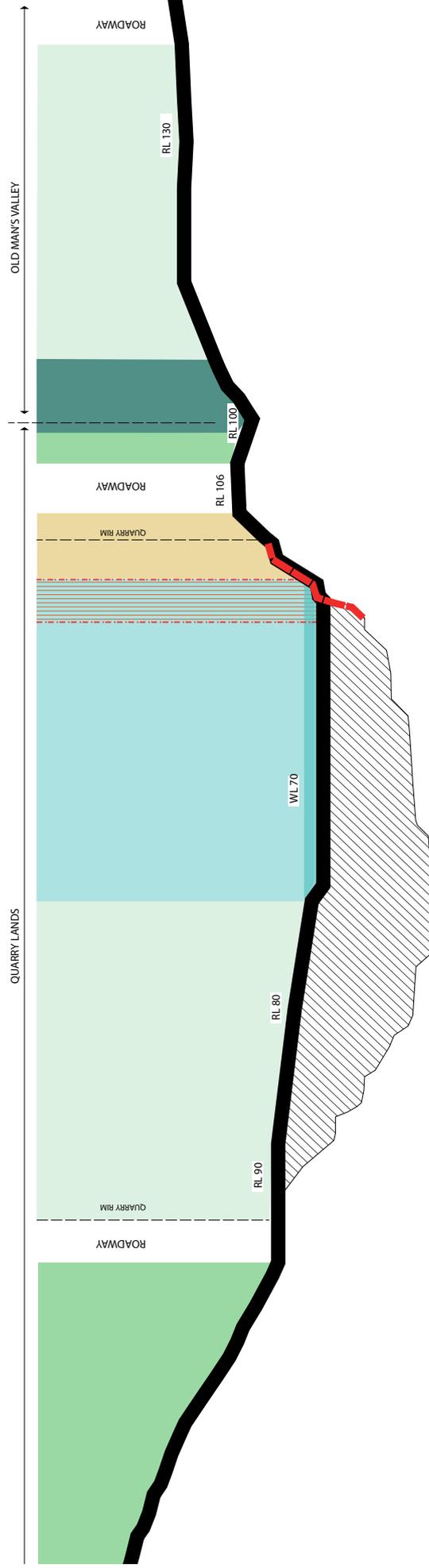


## EARLY DESIGN OPTIONS

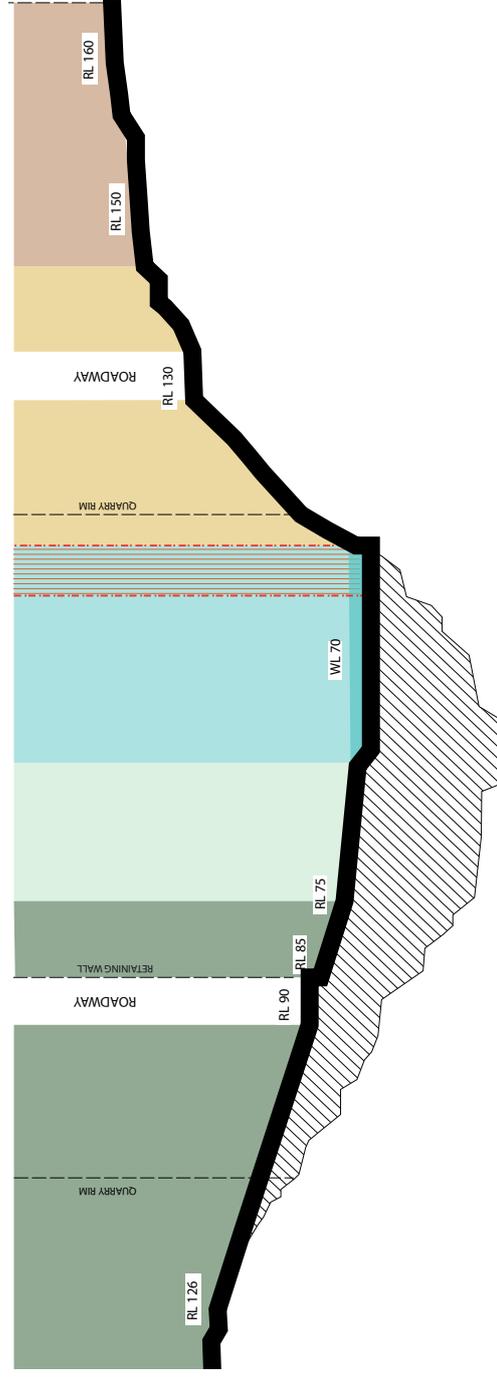
### 8.1 LANDFORM DESIGN OPTION REVIEW

<b>Option 1: Quarry Void</b>	This option provides minimal intervention. The southern face of the quarry is largely unchanged. There is fill on the north side to enable adventure recreation opportunities. Overall, this option focuses on maximising adventure recreation opportunities in a natural setting.
<b>Usable Open Space</b> (as shown in opposite map)	<p><i>Types of open space and potential activities</i></p> <ul style="list-style-type: none"> <li>• 5Ha - OMV (Oval/ Specialty Park) - active sports, one off events, play space</li> <li>• 3Ha - Quarry Parklands - adventure play, amphitheatre, BMX dirt jumps, boardwalks, picnics, barbecues</li> <li>• 1Ha - Old Crusher Plant - rock climbing, abseiling, community facility</li> <li>• 1Ha - South western area - a new level space available for a wide range of recreation pursuits.</li> <li>• 4Ha - Northern/southern slopes - rock climbing, abseiling.</li> <li>• 14Ha - Total usable space</li> </ul> <p><i>Accessibility:</i></p> <ul style="list-style-type: none"> <li>• Walking into and around the site will involve some steep inclines and declines. It may not be possible to design Disability Discrimination Act (DDA) compliant paths throughout the site.</li> <li>• The Oval and Specialty Park located within OMV are the most accessible spaces within the overall site i.e. they are situated at a reasonably level area above the quarry. Both spaces could be accessed from Quarry Road or an upgraded Bridge Street fire trail to the north of the TAFE building. For the purposes of open space for local community needs it may be sensible to focus on this area.</li> </ul>
<b>Local community needs</b>	<ul style="list-style-type: none"> <li>• Local community passive open space needs would be met through the provision of adventure play, boardwalks, picnic and barbecue areas, kick-about spaces etc.</li> <li>• The opening up of the site for public recreation would be a vast improvement on the current local provision of open space in the locality.</li> <li>• However access into the site, especially the lower western side will need to be carefully considered to allow residents to walk or cycle to the site. In reality some local residents may choose to drive to the site.</li> <li>• Local residents may also find that they are sharing 'their local park' with many 'outsiders' and some of the spaces may lack the intimacy of a smaller local park.</li> <li>• Overall the introduction of new areas of usable open space for passive recreation activities would meet the needs of the local community. The introduction of an additional ?Ha would increase the amount of local parks in this part of Hornsby.</li> </ul>
<b>Regional attraction</b>	<ul style="list-style-type: none"> <li>• The following facilities (assuming they are of a high standard and offer an unique experience, closely linked to the site's unique characteristics) could attract visitors from all over Sydney (and possibly beyond): Zip line; High Ropes and Tree top walk; Lake; Retained mountain biking.</li> </ul>
<b>Existing environment</b>	<ul style="list-style-type: none"> <li>• Loss of vegetation on northern side to create 1:3 slopes</li> <li>• EEC retained near OMV. However potential uses such as high ropes and tree top walk could be a point of conflict</li> </ul>

# OPTION 1 - QUARRY VOID



SECTION - EAST - WEST



SECTION - NORTH - SOUTH

- USEABLE OPEN SPACE
- 1:3 ACCESSIBLE REVEGETATED STEEP SLOPE (FILL)
- EEC COMMUNITY - BLUEGUM DIATREME FOREST
- EXISTING BLACKBUTT GULLY FOREST
- LAKE
- EXISTING QUARRY FACE/ FILL AREA TO BE RETAINED
- OLD CRUSHER PLANT ZONE
- DIATREME
- FENCED OFF 30m EXCLUSION ZONE



## EARLY DESIGN OPTIONS

<p><b>Mix and range of recreation activities</b></p>	<ul style="list-style-type: none"> <li>Retention of a lake provides a variety of activities that are largely not provided in the rest of the Shire (apart from river environments).</li> <li>The lake is the largest size of the four options and could potentially cater for a greater number of activities. However the exclusion zone may decrease the usable space.</li> <li>Land based activities focus on adventure recreation and make best use of the 1:3 slope on the northern side. With access from Bridge Road this area could be a focused adventure recreation zone with other parts of the site providing other activities. The level difference could be a natural device for separating the activities.</li> <li>Options for the Old Crusher Zone take advantage of an existing building and tall man made structures. The level area around the old building could be used for passive recreation activities allowing visitors to view the quarry without venturing too far from Dural Street/Quarry Road. It could also be used for on site car parking.</li> </ul>
<p><b>Overall site experience</b></p>	<ul style="list-style-type: none"> <li>The Quarry void would be filled to RL 70 retaining the top 'bench' of the diatreme. This option represents a middle ground (when compared to Option 2 and 3) where a significant amount of the verticality and depth of the quarry void would be lost</li> <li>The southern face of the quarry would remain relatively untouched adding to the story of the site and the unique setting.</li> <li>The introduction of a range of recreation activities on the northern face could be seen to be enhancing the overall experience, by opening up a section of unusable space for adventure activities. The retention of a lake on site also enhances the overall experience.</li> </ul>
<p><b>Potential financial gain</b></p>	<ul style="list-style-type: none"> <li>Management/lease arrangements associated with Zip line; High Ropes and Tree top walk; Lake (scuba diving, zorbing etc.); Abseiling, Rock climbing, Cafe, Nursery etc.</li> <li>Overnight stays, food outlets and adventure based retail could also benefit from some of the above uses for the site.</li> </ul>

## EARLY DESIGN OPTIONS

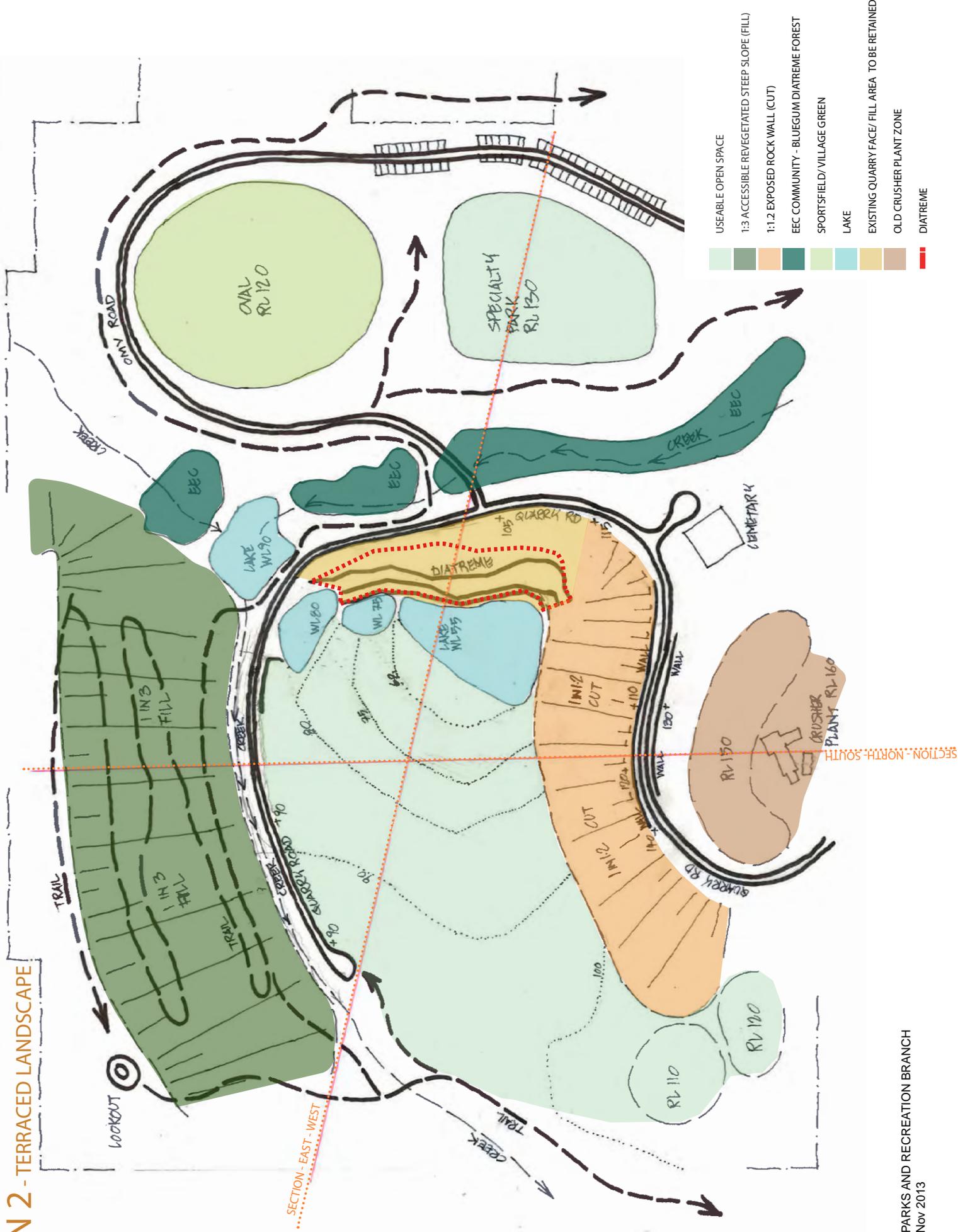
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### Key questions:

1. Does this option provide sufficient usable open space to cater for the needs of the local community or do we need additional open space?
  - Based on the open space hierarchy provided in Appendix A a local park should be between 0.2 and 0.5 Ha in size and a neighbourhood park should be between 0.5 and 1 Ha in size. Therefore it is expected that the new facilities and passive recreation activities within Old Mans Valley Lands will meet the needs of the local community.
2. Are we able to accommodate a mix and range of activities or do we think that a specialised recreation approach is more suitable? Does providing a specialised recreation approach for the quarry limits its potential?
  - A mix and range of activities will need to have a focus, rather than a long wish list of unrelated activities. A specialised recreation use for this particular site does not necessarily exclude other users, for instance lookouts, viewing platforms, cafes, picnic areas overlooking the adventure activities/lake/summer sledding would allow visitors to watch the activities without having to participate .
  - A specialised recreation approach needs to be linked to the quarry character and should not limit its potential. The topography and natural setting seem to lend themselves well to an adventure specialised park.
3. Is this type of provision sufficient to cater for the needs of the local community?
  - Other passive uses such as picnic and barbecue areas, play spaces, walking trails should be provided alongside a specialised use. In this way the local community can utilise the site for their basic open space needs.
4. Does filling the hole to RL 70 reduce the overall experience of the site? Does leaving the southern face of the quarry untouched contribute substantially to the overall experience of the site?
  - Filling the quarry hole to RL 70 would not necessarily reduce the overall experience of the site. The filling of the void reduces the unique characteristics and feel of wilderness and remoteness that is experienced in the quarry void.
  - The lower parts of the southern face where the walls are made of exposed rock are more visually interesting than the upper parts which have been constructed using fill.



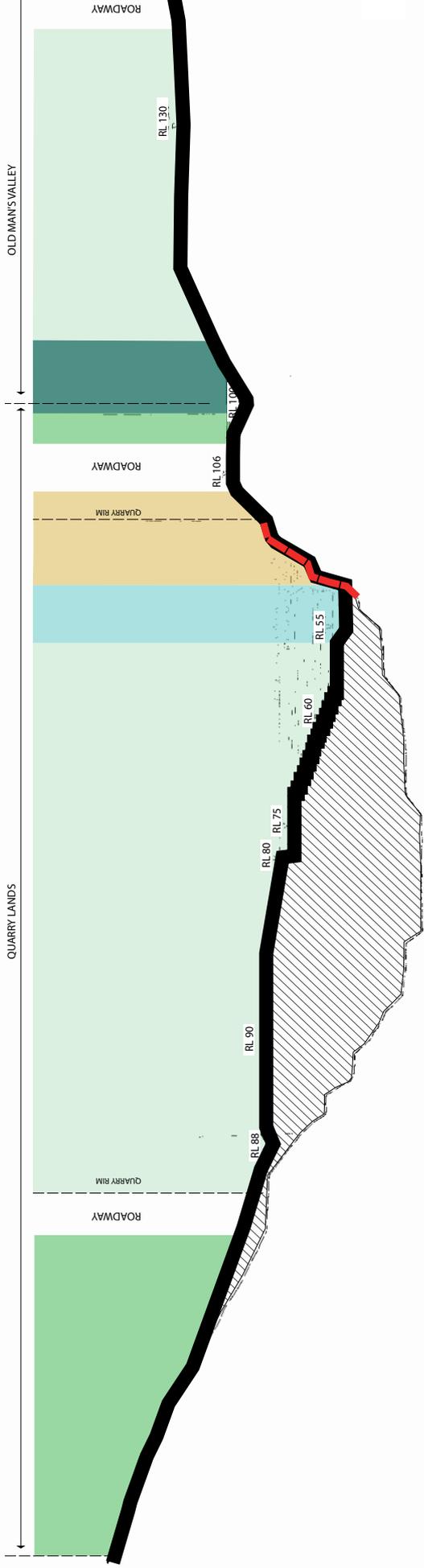
# OPTION 2 - TERRACED LANDSCAPE



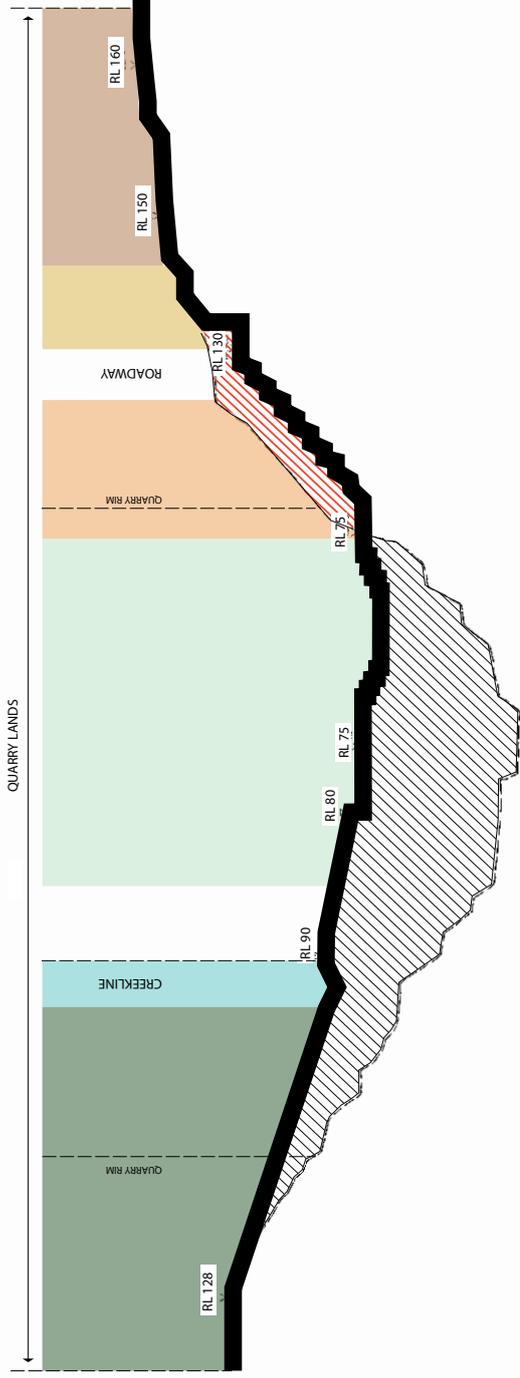
## EARLY DESIGN OPTIONS

<p><b>Option 2: Terraced Landscape</b></p>	<p>Option 2 retains the diatreme to a lower level and provides an opportunity for an amphitheatre to the west, with a series of terraced open spaces stepping down to the lake. It has a cascading waterscape stepping down to the lake in the base of the amphitheatre and a cut slope to the south to maximise usable open space. There is a fill slope to the north with trail and adventure opportunities.</p>
<p><b>Usable Open Space</b></p>	<p><i>Types of open space and potential activities</i></p> <ul style="list-style-type: none"> <li>• 5Ha - OMV (Oval/ Specialty Park) - active sports, one off events, play space.</li> <li>• 4.5Ha - Quarry Parklands - adventure play, amphitheatre, mountain biking, picnic and BBQ facilities.</li> <li>• 1 Ha - Old Crusher Plant - rock climbing, abseiling, community facility.</li> <li>• 4Ha - Northern/southern slopes - boardwalks, picnics, barbecues, rock climbing, abseiling</li> <li>• 1Ha - South western area - a new level space available for a wide range of recreation pursuits.</li> <li>• 15.5Ha - Total usable space</li> </ul> <p><i>Accessibility:</i> As per option 1.</p>
<p><b>Local community needs</b></p>	<ul style="list-style-type: none"> <li>• Similar to Option 1</li> <li>• The introduction of an orchard and/or community garden could provide greater connection/involvement for the local community.</li> </ul>
<p><b>Regional attraction</b></p>	<ul style="list-style-type: none"> <li>• The following facilities (assuming they are of a high standard and offer a unique experience, closely related to the site's unique characteristics) could attract visitors from all over Sydney (and possibly beyond): Zip line; High Ropes and Tree top walk; Cascading waterscape; Retained mountain biking; event/performance space/ amphitheatre</li> <li>• Additional facilities for this option including a cultural facility, BMX pump track, summer sledding could be more of a regional attraction than Option 1.</li> </ul>
<p><b>Existing environment</b></p>	<ul style="list-style-type: none"> <li>• Loss of vegetation on northern side to create 1:3 slopes.</li> <li>• Loss of Vegetation on southern side to create 1:1.2 cut slopes.</li> <li>• EEC retained near OMV. However potential uses such as high ropes and tree top walk could be a point of conflict</li> </ul>
<p><b>Mix and range of recreation activities</b></p>	<ul style="list-style-type: none"> <li>• Retention of a small lake with cascading pools provides a variety of activities that are largely not provided in the rest of the Shire (apart from river environments). However the lake is the smallest of all three options and would most likely be an ornamental lake possibly with some swimming or paddling. The opportunity for adventure based recreation on the lake is limited.</li> <li>• The 1:3 slope on the northern side and 1:1.2 cut slope on the southern side provide for a variety of adventure activities. This sets up two adventure zones with different experiences on either side of the quarry. This could lead to duplication of facilities.</li> <li>• The 1:1.2 slope allows for man made abseiling and rock climbing structures to be constructed during the cut construction with a view to catering for all abilities and the creation of an outdoor training wall, linked with the crusher plant building.</li> </ul>

# OPTION 2 - TERRACED LANDSCAPE



SECTION - EAST - WEST



SECTION - NORTH - SOUTH

- USEABLE OPEN SPACE
- 1:3 ACCESSIBLE REVEGETATED STEEP SLOPE (FILL)
- 1:1.2 EXPOSED ROCK WALL (CUT)
- EEC COMMUNITY - BLUEGUM DIATREME FOREST
- EXISTING BLACKBUTT GULLY FOREST
- LAKE
- EXISTING QUARRY FACE/ FILL AREA TO BE RETAINED
- OLD CRUSHER PLANT ZONE
- DIATREME



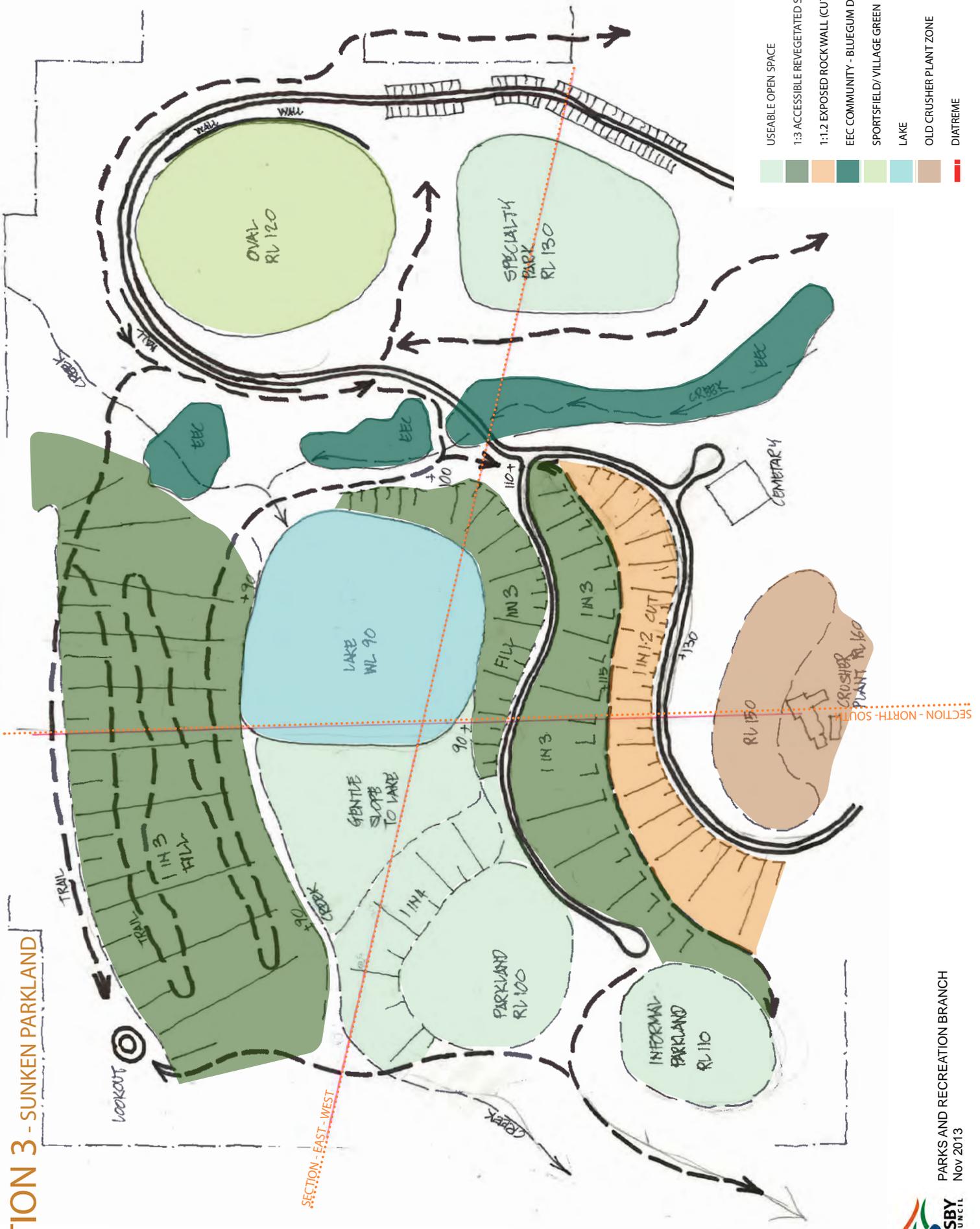
## EARLY DESIGN OPTIONS

<p><b>Overall site experience</b></p>	<ul style="list-style-type: none"> <li>• The Quarry void would be filled to RL 55 retaining the diatreme in full. This is a significant part of the quarry character.</li> <li>• However the existing rock walls on the southern side would be removed to allow for 1:2 cut slopes.</li> <li>• The overall experience of the verticality of the quarry would be retained when standing at the lake and to a certain extent looking east within the lower quarry parklands.</li> <li>• Option 2 has more recreation activities proposed and could create a series of conflicting objectives/uses which will need to be designed and managed carefully.</li> <li>• Overall the combination of adventure and cultural activities may cater for a larger audience.</li> </ul>
<p><b>Potential financial gain</b></p>	<ul style="list-style-type: none"> <li>• Management/lease arrangements associated with Zip line; High Ropes and Tree top walk; Abseiling, Rock climbing, Cultural facility, Viewing tower.</li> <li>• Overnight stays, food outlets and adventure based retail could also benefit from some of the above uses for the site.</li> </ul>

### Key Questions

1. What activities can the additional usable open space accommodate that cannot be accommodated elsewhere on the site?
  - The additional open space could be used to provide a down hill zorbing track; BMX competition facility, large cultural events such as Christmas Carols, theatre acts etc.
2. How big an area do we actually need to accommodate these activities?
  - A sizeable area will be required to allow enough space for the adventure activities. Overflow space for setting up events and other areas associated with management, future accommodation etc. will also be sizeable. Exact sizes have not yet been determined (See Appendix D).
3. How important is the cultural aspect? Are there substantial benefits in allowing for a large amphitheatre for cultural events?
  - The cultural aspect of the site is very important. The history of quarrying, the families ties, the links to the development of Hornsby and the northern suburbs of Sydney are important stories associated with the site that should be told through interpretive devices as the site is developed.
  - The re-use of the abandoned crushing plant is also an important part of the cultural aspect of the site. The adaptive re-use of the building and the site should retain industrial features.
  - In terms of cultural activities the importance of these will most probably be developed over time as the site is opened up and locals and visitors start to use the site. The approach should be to create a flexible space in the lower quarry parklands that could be used as an amphitheatre, rather than constructing an amphitheatre that could exclude other uses in the future and when there are no events.
4. Does retaining the entire Diatreme up to RL 55 contribute to the overall experience of the site?
  - The diatreme contributes to the overall character and uniqueness of the site. It also adds to the drama of the site especially as a potential back drop for recreation activities and cultural events if the area near the lake was used as an amphitheatre.
  - The combination of the retention of the diatreme and the cut of the southern wall in order to stabilise is harder to assess. The removal or cutting into of either of the features results in the overall loss of the quarry character.
  - In terms of the overall site experience there are no recreation activities proposed on the diatreme.

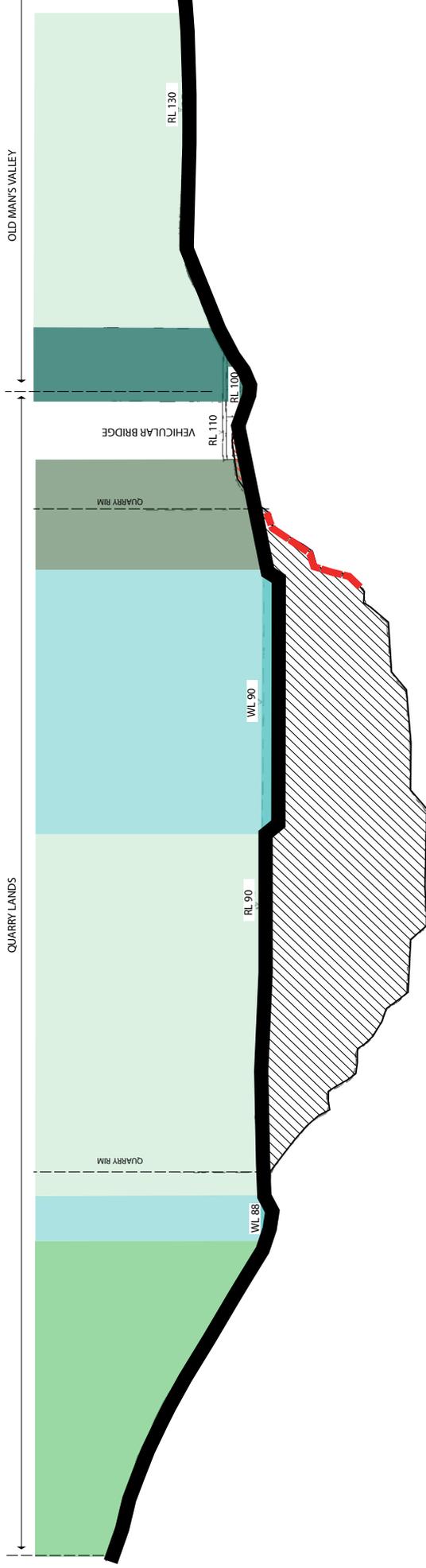
# OPTION 3 - SUNKEN PARKLAND



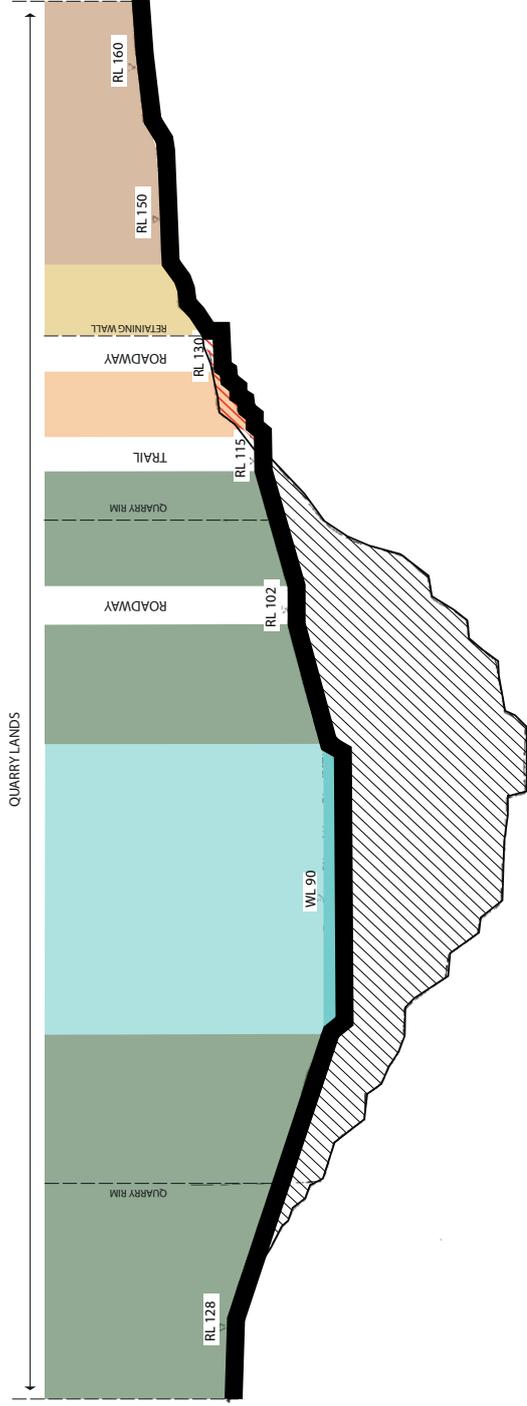
## EARLY DESIGN OPTIONS

<b>Option 3: Sunken Parkland</b>	This option explores opportunities to create parkland in the quarry by creating a sunken landscape that sits well below OMV and provides a generous space for a lake and parkland. This option requires filling to RL 90.
<b>Usable Open Space</b>	<i>Types of open space and potential activities</i>
	<ul style="list-style-type: none"> <li>• 5Ha - OMV (Oval/ Specialty Park) - active sports, one off events, play space</li> <li>• 4.5Ha - Quarry Parklands - picnic, barbecue, mountain biking</li> <li>• 1Ha - Old Crusher Plant - recreation/cultural focus</li> <li>• 1Ha - South western area - a new level space available for a wide range of recreation pursuits.</li> <li>• 6Ha - Northern/southern slopes - rock climbing, abseiling.</li> <li>• 17.5Ha - Total usable space</li> </ul>
	<p><i>Accessibility:</i></p> <ul style="list-style-type: none"> <li>• As per option 1.</li> <li>• Additional internal site roads allow access to the south western corner (instead of the north western corner in Option 1 and 2).</li> </ul>
<b>Local community needs</b>	<ul style="list-style-type: none"> <li>• Similar to Option 1</li> </ul>
<b>Regional attraction</b>	<ul style="list-style-type: none"> <li>• It is assumed the following activities could be allowed for in this option - Zip line; High Ropes and Tree top walk; Swimming, Kayaking, Scuba diving, summer sledding; retained mountain biking.</li> </ul>
<b>Existing environment</b>	<ul style="list-style-type: none"> <li>• Loss of vegetation on northern side to create 1:3 slopes.</li> <li>• Loss of vegetation on southern side to create 1:1.2 cut slopes.</li> <li>• EEC retained near OMV. However potential uses such as high ropes and tree top walk could be a point of conflict</li> </ul>
<b>Mix and range of recreation activities</b>	<ul style="list-style-type: none"> <li>• Retention of a large lake provides a range of water based activities that could extend to kyaking, canoeing, scuba diving, swimming etc.</li> <li>• The 1:3 fill on the northern side and 1:1.2 cut on the southern side provide for a variety of adventure activities. This sets up two adventure zones with different experiences on either side of the quarry. This could lead to duplication of facilities. The southern side could focus on abseiling and rock climbing and the northern side could focus on high ropes and tree top walk.</li> <li>• The sunken parkland provides a large open space in the middle of the site. This could be used for a variety of passive recreation activities.</li> </ul>
<b>Overall site experience</b>	<ul style="list-style-type: none"> <li>• The overall site experience is somewhat depleted due to the loss of the quarry walls and verticality of the site.</li> <li>• The bushland setting and connection to the valley is retained.</li> </ul>
<b>Potential financial gain</b>	<ul style="list-style-type: none"> <li>• Management/lease arrangements associated with Zip line; High Ropes and Tree top walk; Abseiling, Rock climbing, Cultural facility, Viewing tower.</li> <li>• Overnight stays, food outlets and adventure based retail could also benefit from some of the above uses for the site.</li> </ul>

# OPTION 3 - SUNKEN PARKLAND



SECTION - EAST - WEST



SECTION - NORTH - SOUTH

- USEABLE OPEN SPACE
- 1:3 ACCESSIBLE REVEGETATED STEEP SLOPE (FILL)
- 1:1.2 EXPOSED ROCKWALL (CUT)
- EEC COMMUNITY - BLUEGUM DIATREME FOREST
- EXISTING BLACKBUTT GULLY FOREST
- LAKE
- EXISTING FILL AREA TO BE RETAINED
- OLD CRUSHER PLANT ZONE
- DIATREME

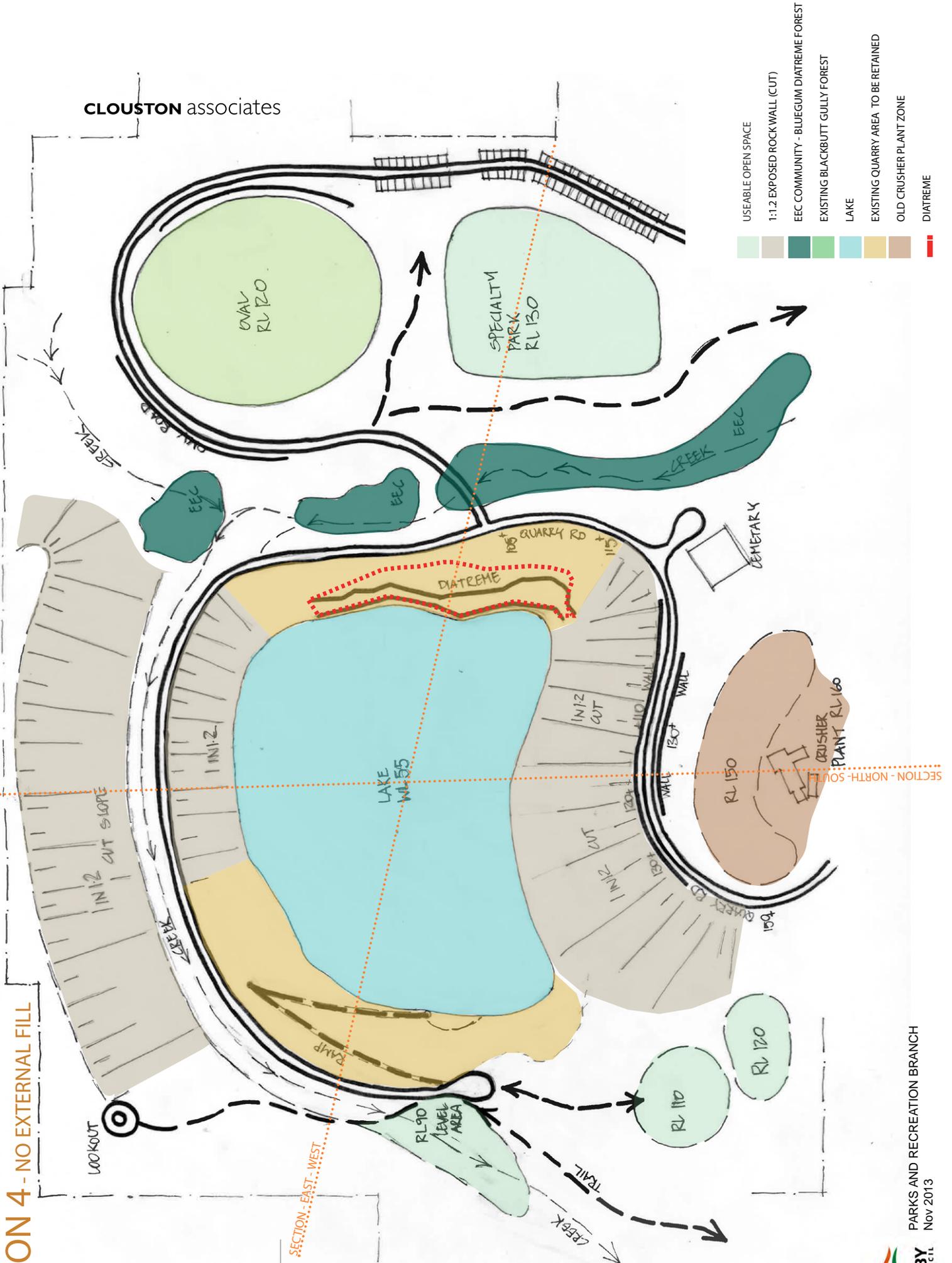
## EARLY DESIGN OPTIONS

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### Key Questions

1. Does the filling up to RL 90 devalue the overall experience of the site?
  - This will depend on the recreation activities that are proposed within the site and if the benefit of the sunken gardens outweighs the retention of quarry features.
  - The quarry character is nearly completely lost (except for the old crusher plant) with the filling of the void to the 'rim'. The diatreme and northern and southern walls would be covered up.
  - The changes in level become less dramatic and the verticality of the site is lost, reducing the appeal for adventure based recreation.
2. Does the cost of undertaking stabilisation works to the southern cut side justify the benefits of the additional space provided?
  - The benefit of the additional open space is that overall, when compared to the other options, the amount of 'level' open space is the largest for this option by allowing sports activities to occur in the western side of the site. However this is possibly not the best use of the site in terms of the unique location, potential impact on environmental values and infrastructure required to provide sports facilities on the western side of the site. Running a road through this point will be expensive and may provide only limited value as a space for vehicle parking.
  - On the other hand if another type of open space or recreation activity that could generate an income for Council could be located on the western side, over time this may justify the cost of the stabilisation works.

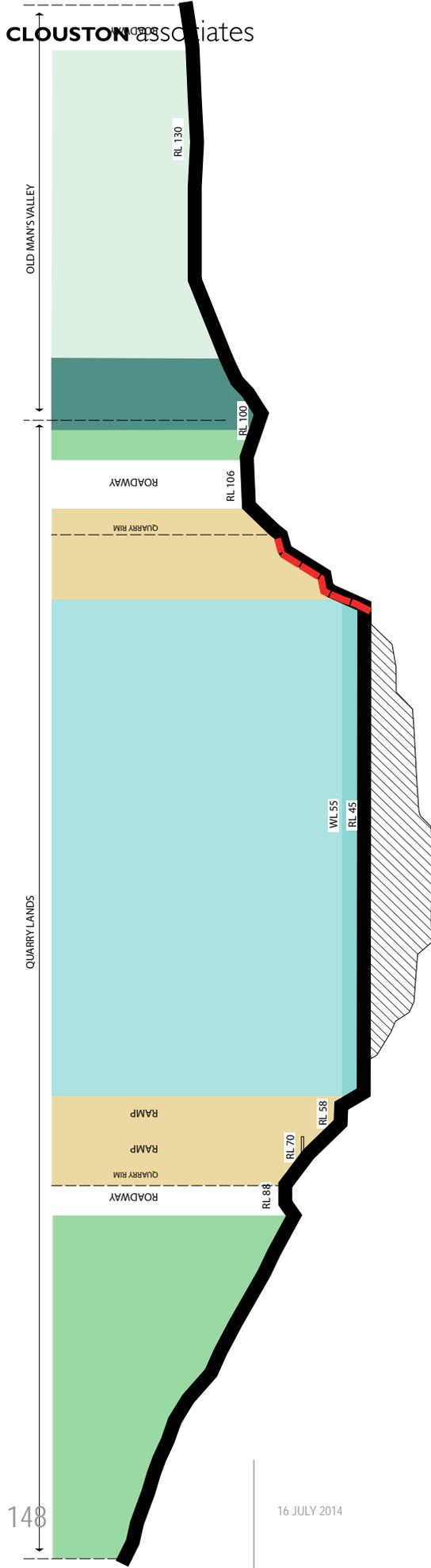
OPTION 4 - NO EXTERNAL FILL



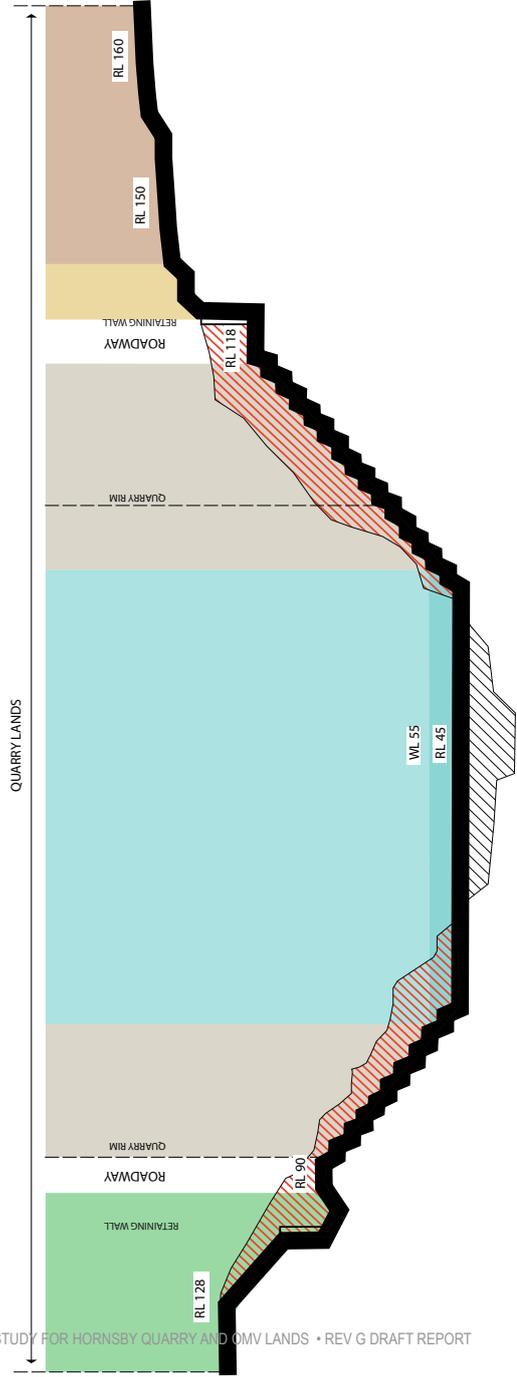
## EARLY DESIGN OPTIONS

<b>Option 4:No external fill</b>	This option explores the opportunity of creating a unique public space without relying on fill from external sources. Creation of parkland is limited. However the dramatic landscape and 'quarriiness' is retained.
<b>Usable Open Space</b>	<i>Types of open space and potential activities</i>
	<ul style="list-style-type: none"> <li>• 5Ha - OMV (Oval/ Specialty Park) - active sports, one off events, play space</li> <li>• 0Ha - Quarry Parklands</li> <li>• 1Ha - Old Crusher Plant - recreation/cultural focus</li> <li>• 1Ha - South western area - a new level space available for a wide range of recreation pursuits.</li> <li>• 0Ha - Northern/southern slopes</li> <li>• 7Ha - Total usable space</li> </ul>
	<p><i>Accessibility:</i></p> <ul style="list-style-type: none"> <li>• Limited access to the lake. Public access roads would not be needed to the bottom of the quarry (maintenance access would need to be maintained)</li> </ul>
<b>Local community needs</b>	<ul style="list-style-type: none"> <li>• Local community passive open space needs would be met through the provision of the oval and specialty park with the possibility of creating adventure play, picnic and barbecue areas, kick-about spaces etc. in Old Mans Valley.</li> <li>• The opening up of the site for public recreation would be a vast improvement on the current arrangements where access to the quarry is restricted.</li> <li>• The retention of the quarry structure/void and expansion of the lake reduces the amount of useable space but does retain a unique landscape, nearly in its entirety that could become a visitor attraction.</li> <li>• Local residents may also find that they are sharing 'their local park' with many 'outsiders' and some of the spaces may lack the intimacy of a smaller local park.</li> </ul>
<b>Regional attraction</b>	<ul style="list-style-type: none"> <li>• It is assumed the following activities could be allowed for in this option - Zip line; High Ropes and Tree top walk; retained mountain biking.</li> </ul>
<b>Existing environment</b>	<ul style="list-style-type: none"> <li>• Loss of vegetation on northern side to create 1:1.2 slopes.</li> <li>• Loss of vegetation on southern side to create 1:1.2 cut slopes.</li> <li>• EEC retained near OMV. However potential uses such as high ropes and tree top walk could be a point of conflict</li> <li>• Reduction in broader environmental issues of transporting fill from elsewhere</li> <li>• Water resource and potential for irrigation and fire fighting uses</li> </ul>
<b>Mix and range of recreation activities</b>	<ul style="list-style-type: none"> <li>• Retention of a large lake (largest of the four options) provides the opportunity for a range of water based activities. However the plan does not show any useable open space adjacent to the lake, suggesting it will have limited access to the water via a ramp or stairs.</li> <li>• The 1:1.2 cut slopes on the southern and northern side provide for a variety of adventure activities. This sets up two adventure zones with different experiences on either side of the quarry. This could lead to duplication of facilities. The southern side could focus on abseiling and rock climbing and the northern side could focus on high ropes and tree top walk.</li> </ul>
<b>Overall site experience</b>	<ul style="list-style-type: none"> <li>• The overall site experience is heightened in comparison to some of the other options due to the retention of the quarry walls and verticality of the site.</li> <li>• The bushland setting and connection to the valley is retained.</li> </ul>

# OPTION 4 - NO EXTERNAL FILL



SECTION - EAST - WEST



SECTION - NORTH - SOUTH

- USEABLE OPEN SPACE
- 1:1.2 EXPOSED ROCK WALL (CUT)
- EEC COMMUNITY - BLUEGUM DIATREME FOREST
- EXISTING BLACKBUTT GULLY FOREST
- LAKE
- EXISTING QUARRY AREA TO BE RETAINED
- OLD CRUSHER PLANT ZONE
- DIATREME

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## EARLY DESIGN OPTIONS

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<p><b>Potential financial gain</b></p>	<ul style="list-style-type: none"> <li>• Management/lease arrangements associated with Zip line; High Ropes and Tree top walk; Abseiling, Rock climbing, Cultural facility, Viewing tower.</li> <li>• Overnight stays, food outlets and adventure based retail could also benefit from some of the above uses for the site.</li> </ul>
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### Key Questions

1. Does retaining the entire Diatreme to RL 55, the creation of a larger lake and the southern and western slopes contribute to the overall experience of the site?
  - The diatreme contributes to the overall character and uniqueness of the site. It also adds to the drama of the site.
  - The creation of the larger lake could add to the visual experience but with limited public access to the water it will have restricted recreation potential. Access to the waters edge will still need to be provided.
  - The existing void (i.e. eastern, southern and northern slopes/walls) would be retained, even though it would be altered to improve public safety. It could be expected that this option will retain key elements of the 'quariness' of the site.

PROJECT TEAM



Southern quarry wall

## PROJECT TEAM

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### HORNSBY SHIRE COUNCIL TEAM

Peter Kemp – Manager, Parks and Recreation  
Kurt Henkel - Landscape Coordinator  
Dana Spence - Parks Assets Coordinator  
Tamara Obradovic - Landscape Architect/Project Manager  
David De-Fina (DD) - Landscape Architect/Project Manager  
Rob Rajca (RR) - Manager Design and Construction  
Craig Clendinning (CC) - Project Co-ordinator Design

### CONSULTANT TEAM

The Recreation Potential Study has been prepared by  
Crosbie Lorimer - Director  
Cassandra Denney - Associate

of

### CLOUSTON Associates

*Landscape Architects • Urban Designers • Landscape Planners*

Level 2, 17 Bridge Street • Sydney NSW 2000

PO Box R1388 • Royal Exchange NSW 1225 • Australia

Telephone (02) 8272 4999 • Facsimile (02) 8272 4998

Email • [sydney@clouston.com.au](mailto:sydney@clouston.com.au)

Web • [www.clouston.com.au](http://www.clouston.com.au)

