Evaluation of public benefits associated with the dedication of the Powerhouse site

Final Report

Department of Planning and Infrastructure

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SGS Economics & Planning

Independent insight.

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EXECUTIVE SUMMARY

Scope of work

The scope of work detailed in the study brief is as follows:

1. Examine and review the public benefits associated with dedication of the Powerhouse Building and associated curtilage with particular reference to the valuation report prepared by Rosecorp Management Service Pty Ltd dated 21 January 2010 on behalf of the proponent
2. Critique and advise on assumptions made, methodology and the subsequent conclusion of the report by Rosecorp Management Services dated 21 January 2010 regarding the costing and valuation of the public benefits delivered by the dedication of part of the Powerhouse building and associated cartilage
3. Analyse and evaluate the net benefits delivered by dedication of the Powerhouse Building as required by the Breakfast point Concept Plan 2005
4. Consult with the Department's Major Projects Assessment Branch, City of Canada Bay Council and the proponent as part of the review

Outcome of review of feasibility modelling

Rosecorp

A $1.2 million offer, in lieu of the public dedication of part of the Power House and curtilage, was put forward by Rosecorp in the *Proposal for Demolition of the Existing Building and Redevelopment for Residential Use* submitted to Council in January 2010. As part of this Proposal, Rosecorp prepared a development feasibility (or Residual Land Value (RLV)) analysis for the housing redevelopment project being proposed. The analysis showed that the $1.2 million contribution would result in a tolerable profit on cost of 16.86%, while a counter offer of $3.5 million from the Council would reduce this profit to 4.19%, which Rosecorp considered to be unacceptable, given the uncertainty of conditions present in the existing structure and risks of increasing costs.

In general, SGS suggests that the justifications, presented by Rosecorp for the demolition of the Powerhouse building and redevelopment of residential dwelling, are fair. Most of the cost and revenue estimates/assumptions used in the feasibility testing are also found consistent with the standard range recommended by the Rawlinson's and sales prices for the adjacent lots recorded by RPData. However, a number of following issues have arisen from the review of the RLV analysis:

- **Flawed profit calculation**: The profit measure seems to be completely independent of the revenues estimates for the six residential dwellings. Instead, the profit calculated in Rosecorp's feasibility analysis shows the residual in expected profit (of 25 percent on cost) set by Rosecorp, after allowing for the VPA contribution. To overcome this issue, SGS suggests using the actual land acquisition cost (instead of the derived residual land value) for the land cost in the feasibility calculation.
- **Lack of sensitivity testing on key assumptions:** We suggest sensitivity testing to be undertaken to show the impacts of varying the key assumptions/estimates, including remediation cost and sales revenue, on the development feasibility.
- **Lack of clarity on the interest calculation:** Rosecorp needs to explain how the interest costs are calculated in the feasibility analysis, as applying the rate of 8.9 percent per annum results in a total interest payment of around $1.910 million, which is $0.375 million higher than the $1.535 million reported.
- **Lack of clarity on the expected profit (on cost) calculation:** Similarly, we find that applying a 25 percent profit (as stated in Rosecorp's calculation) to the total delivery cost of around $14 million returns a profit, which is $0.89 million lower than the $4.39 million figure reported. Again, this higher figure needs to be justified by Rosecorp.

Canada Bay Council

According to the abstract provided by the Council, justifications for the $3.5 million offer are:

- land formerly to be dedicated to Council would accommodate three of the six residential dwellings being proposed
- Council is therefore entitled to half of the profit and half of the land value calculated by Rosecorp, which is around $3.5 million.

In principle, SGS agrees that Council is entitled to at least half of the Residual Land Value (estimated to be around $2.186 million by Rosecorp), from the residential development on the Powerhouse site. This is because that over half of the Powerhouse site would be dedicated to Council under the planning consent of the Concept Plan.

However, Council would not be likely to be directly involved with developing the six residential dwellings and would not be exposed to risks associated with this development. Given that the developer bears all the development risks but profits are shared, an appropriate allowance should be made in the RLV calculation.

Outcome of assessment of public benefits of open space

For the purpose of this study, the public benefits associated with dedicating the Powerhouse site as a public open space have been estimated using the travel cost method (or revealed preference method). Although the user survey method (in which respondents are asked how much they are willing to pay for a described environmental good) would provide a direct measure of the user benefits (including consumer surplus), such method falls beyond the budget and scope of this study.

We have simulated the visitation to the Powerhouse site, if dedicated for community uses as open space, using the Parks Victoria (PV) parkland visitation forecasting model[1]. The low and high scenarios are modelled on the public awareness score of 5 and 15 respectively. The results produced by the PV model show that the annual visitation to the open space is likely to reach 10,700 or 18,000 by 2036 under each scenario.

The annual user benefit has been derived by applying an average travel cost of $5.6 per visit to the annual visitation number. After discounting the annual benefits using a 7 percent real discount rate, the present value of these user benefits over 25 years is estimated to be around **$0.75 million** under the low visitation scenario and **$1.2 million** under the high visitation scenario.

Considering the current offer of parks, gardens, scenic walks and cycleways at Breakfast Point and lack of will from either party to develop the Powerhouse site into community uses, we suggest that the value of user benefits derived from the open space is likely to be at the lower end of this range.

Recommended value for the 'loss' of public dedication

To suggest a reasonable offset figure for the removal of public dedication, we consider the RLV approach as a better evaluation technique. This is due to the fact that:

- there is no clear proposal for a community use for the Powerhouse building
- survey data for willingness to pay and willingness to visit the Powerhouse site does not exist
- the application of the PV model may be problematic given the very small size of the open space.

As such, we have produced a revised land value calculation provided by Rosecorp to Canada Bay Council reflecting the issues identified by our review of the Rosecorp's analysis. The table below compares the revised calculation with Rosecorp's calculation.

[1] Zanon, D. (1998) A Model for Estimating Urban Park Visitation An Occasional Paper published by Parks Victoria

REVISED RLV CALCULATION FOR THE RESIDENTIAL DEVELOPMENT

	Rosecorp calculation	SGS calculation
REVENUE		
Sales 6 houses/dwelling	$25,200,000	$25,200,000
Gross Revenue	$25,200,000	$25,200,000
Selling costs		
Marketing Costs (1.25% of GR)	$315,000	$315,000
Agents Fees (2.5% of GR)	$630,000	$630,000
Sales Legal Fees ($3500 per dwelling)	$21,000	$21,000
Miscellany ($1000 per dwelling)	$6,000	$6,000
Total	$972,000	$972,000
GST	$2,160,000	$2,202,545
NET REVENUE	**$22,113,000**	**$22,025,455**
DEVELOPMENT COSTS	**$14,001,830**	**$14,001,830**
Interest on costs (8.9% p.a. over 18 months)	**$1,535,000**	**$1,910,238**
Profit target		
% on cost	25%	20%
Expected profit	**$4,390,000**	**$2,800,366**
RESIDUAL LAND VALUE	**$2,186,170**	**$3,313,021**

Source: Rosecorp's estimates and SGS estimates

Highlighted key changes include:

- **Interest on costs** – as noted in the earlier section, applying an interest rate of 8.9% per annum to the total development cost of $14 million results in a total interest cost of $1.9 million per annum, instead of $1.5 million shown in Rosecorp's calculation.
- **Expected profit** – we have reduced the 25 percent profit target used in the original calculation to 20 percent, which is considered as a typical level used in a development feasibility analysis. But in reality this will depend on the level the developer is prepared to accept, considering the risks involved in a project.

The revised calculation shows that the residential development is likely to result in a RLV of around $3.3 million. As half of the Powerhouse site would be dedicated to Council under the planning consent of the Concept Plan, we suggest that a reasonable offset figure for the loss of the public dedication would be half of the $3.3 million land value, which equates to $1.65 million.

1 INTRODUCTION

1.1 Study background

The Breakfast Point Concept Plan was approved under Part 3A of the Environmental Planning and Assessment Act 1979. Condition 11 of the approval was the dedication of part of the Powerhouse Building and associated cartilage to the City of Canada Bay Council for the benefit of the general public. A modification application has been submitted to the department seeking to remove this condition and allow demolition of the Powerhouse Building and the construction of six dwellings in its place.

Canada Bay council has objected to the proposal due to the absence of appropriate compensation for the loss of public benefit. There has been some discussion of an appropriate figure but at this time the parties have failed to reach agreement.

This study has been commissioned to provide independent analysis and assessment of the costing and valuation of public benefits as a result of the dedication of part of the Powerhouse Building and associated cartilage. The purpose of this process is to come to a resolution on a fair and accurate consideration in relation to the dedication of part of the Powerhouse Building and associated curtilage as required by the Breakfast Point Concept Plan approval.

1.2 Scope of work

The scope of work detailed in the study brief is as follows:

1. Examine and review the public benefits associated with dedication of the Powerhouse Building and associated curtilage with particular reference to the valuation report prepared by Rosecorp Management Service Pty Ltd dated 21 January 2010 on behalf of the proponent
2. Critique and advise on assumptions made, methodology and the subsequent conclusion of the report by Rosecorp Management Services dated 21 January 2010 regarding the costing and valuation of the public benefits delivered by the dedication of part of the Powerhouse building and associated cartilage
3. Analyse and evaluate the net benefits delivered by dedication of the Powerhouse Building as required by the Breakfast point Concept Plan 2005
4. Consult with the Department's Major Projects Assessment Branch, City of Canada Bay Council and the proponent as part of the review

2 PEER REVIEW OF EXISTING VALUATIONS

2.1 Rose Group

Review of the $1.2 million offer

BACKGROUND

In the *Proposal for Demolition of the Existing Building and Redevelopment for Residential Use* submitted by Rosecorp to the Canada Bay Council in January 2010, an offer of **$1.2 million** was put forward to Council in lieu of the dedication of part of the Power House and curtilage to Council. This financial contribution was proposed to be provided under a Voluntary Planning Agreement (VPA) for Council to use to support the costs of other public facilities currently provided or which may be provided in the future.

The Proposal also stated that after reviewing various alternative uses of the Powerhouse site, Rosecorp concluded that the best use for the site would be the demolition of the existing structure and the construction of six houses. Other main justifications for this Proposal include the followings:

- The feasibility appraisal of the forecast revenue and construction/ on-going maintenance cost estimates prepared by WT Partnership shows that the adaptive re-use of the existing Powerhouse building would cost $4.4 million to Breakfast Point Pty Ltd over time and therefore would be not financially viable.
- Council would be relieved from the ongoing burden of care, control and maintenance of the part of the Powerhouse and curtilage, if condition 11 of the original development consent were removed. WT Partnership estimated the ongoing maintenance cost to the external fabric of the readapted building to be $180,000 every 20 years, $25,000 every five years and $15,000 for annual repairs.
- In Breakfast Point Pty Ltd's opinion, the demolition of existing structure for residential development may be more desirable to the surrounding residents.
- The NSW Heritage Office and NSW Department of Planning and Infrastructure do not object an application for the demolition of the existing structure, providing the items of heritage significance are appropriately recorded and/or retained via an interpretation display within Breakfast Point.

VALUATION METHOD

The $1.2 million offer put forward by Rosecorp in the Proposal was supported by a feasibility analysis, which showed that the $1.2 million contribution would result in a profit on cost of 16.86%, while a $3.5 million counter offer from the Council would cut the profit to 4.19%. Rosecorp considers the 4.19% profit too low to make the development feasible, given the uncertainty of conditions present in the existing structure and risks of increasing costs in demolition and remediation.

The feasibility analysis basically calculates the residual profit after deducting the total project deliver costs, interest expenses, land cost and VPA contributions from the net development revenues. The detail about this method is explored in the 'issues arising' section.

DATA SOURCES/ ASSUMPTIONS

The main assumptions/estimates used in the feasibility assessment include:

- Gross revenue - $4.2 million per dwelling
- Selling expenses, including marketing and agent fees – 3.75% of the gross revenue
- Construction cost– $1.6 million per dwelling
- Site remediation cost – $1.85 million
- Professional fees - $850,000 (or 6.5% of the construction cost)
- Interest expenses – 8.9% per annum

- Land cost - $2.18 million

We have sense-checked these estimates/assumptions against indicative construction cost estimates from Rawlinsons Construction Handbook (2012) and sales prices for the adjacent lots from RPdata. The values fall within a standard range. The exception is the land cost and site remediation cost discussed in the following section.

However, no clear source is indicated for the estimates/assumptions used in the feasibility analysis.

ISSUES ARISING

In general, the justifications, presented by Rosecorp for the demolition of the Powerhouse building and redevelopment of residential dwellings, are fair. However, a number of key issues arise from the review of the feasibility analysis, as discussed below.

- **Flawed profit calculation.** SGS has reviewed the method and some assumptions used in the feasibility calculation. Overall, we suggest that the method used to calculate the profit and the performance measure (profit on cost) is flawed. This is because the land cost being used in the feasibility analysis is a residual value after deducting all the delivery costs, interest expenses and expected profit of 25 percent on cost from the expected net revenues of six houses. This is often referred as a Residual Land Value (RLV). In this case, it was estimated to be around $2.1 million. We have illustrated the calculation in Equation 1.

  Equation 1

  $$Land\ cost = Net\ revenues - Total\ delivery\ cost - Interest\ expense\ (8.9\%\ p.a.\ on\ cost\ over\ 18\ months) - Expected\ profit\ (25\%\ on\ cost)$$

  The equation used to calculate the profit of the development and profit on cost (the performance measure being quoted in the Proposal) is expressed as:

  Equation 2

  $$Profit = Net\ revenues - Total\ delivery\ cost - Interest\ expense\ (8.9\%\ p.a.\ on\ cost\ over\ 18\ months) - Land\ cost - VPA\ contribution$$

  After substituting 'land cost' equation (equation 1) into the Equation 2, the profit calculated in the feasibility analysis can be interpreted as a residual value after deducting the VPA contribution from the 25% percent profit on delivery costs. This is because net revenues, total delivery costs and interest expenses are all cancelled out in Equation 3.

  Equation 3

  $$Profit = \cancel{Net\ revenues} - \cancel{Total\ delivery\ cost} - \cancel{Interest\ expense\ (8.9\%\ p.a.\ on\ cost\ over\ 18\ months)} - [(\cancel{Net\ revenues} - \cancel{Total\ delivery\ cost} - \cancel{Interest\ expense\ (8.9\%\ p.a.\ on\ cost\ over\ 18\ months)} - Expected\ profit\ (25\%\ on\ cost)] - VPA\ contribution$$
  $$= Expected\ profit\ (25\%\ on\ cost) - VPA\ contribution$$

  In other words, this profit measure is **completely independent** of the revenue estimates of six houses. All it shows is the residual in profit (of 25 percent on costs), after allowing for the VPA contribution. However, the profit, by definition, is equal to sales revenue minus delivering costs and other associated expenses. As such, the profit calculation in the feasibility analysis is considered inappropriate and maybe misleading.

  Instead of using the derived RLV, we suggest estimating the land cost in the feasibility analysis using an actual acquisition cost for the land. In this case, we can also treat the VPA contribution as part of the land cost. We expect this would have some material impacts on the feasibility result, if the actual cost (excluding the $1.8 million VPA contribution) is found significantly lower than $2.1 million.

- **Lack of sensitivity testing on key assumptions:** A number of key assumptions were used in the feasibility calculation. These include a remediation cost of $1.85 million (which was questioned by the Canada Bay Council), sales price and construction cost per dwelling. It would be worth showing the impacts of varying these key assumptions on the performance measure of the residential development project.

- **Lack of clarity on the interest calculation:** The interest on costs at 8.9 percent interest rate per annum over 18 months was estimated to be around $1.5 million in the Powerhouse Land Value Calculation. Assuming the

interest rate is an annual compounding rate, the total interest payment is around **$1.910 million**, which is **$0.375** million higher than the **$1.535 million** shown in the Rosecorp's calculation. Working backwards from this $1.535 million figure, we suspect that Rosecorp might have assumed a 4:1 debt to equity ratio for the project financing (i.e. 80% of costs covered by debt financing). If so, this assumption needs to be justified and clarified by Rosecorp.

- **Lack of clarity on the expected profit (on cost) calculation:** We find that applying a 25 percent profit (as stated in Rosecorp's calculation) to the total delivery cost of around $14 million returns a profit of around **$3.5 million**, which is **$0.89 million** lower than the **$4.39 million** figure reported. Again, this higher figure needs to be justified by Rosecorp, as it would have significant impacts on the land value of the Powerhouse site (if redeveloped into 6 separate houses), which Canada Bay Council believe that they have a 50 percent stake of.

  If the expected profit used by Rosecorp has been charged against interest expense, land cost and VPA contribution (in addition to the project delivery cost), Rosecorp should explain the rationale of using this approach.

  Also, we suggest that the expected profit on cost of 25 percent (used in the land value calculation) needs to be benchmarked against recent projects in adjacent areas to justify its fairness.

Review of the $1.8 million offer

In consultation with both Canada Bay Council and Rosecorp, we have been advised that a further verbal offer of $1.8 million in future value was provided by Rosecorp to Council in December 2011. In the supplementary report for this offer, Rosecorp presented the following justifications for the $1.8 million contribution (that equates to $300,000 per house payable on the issues of the Occupation Certificate for each house):

- The estimated cost for the remediation works noted by the heritage engineer as being 'Essential' and 'Recommended' is around $2.92 million in today's value. This figure is $1.5 million lower than the estimated cost of $4.5 million for the remediation of the existing structure and base building works for the adaptive re-uses described in the Hughes Trueman Report of 24th February 2004. These 'Essential' and 'Recommended' works are more reflective of the condition of consent included in the Concept Plan.
- The top end housing market has fallen considerably since the time of the initial offer for the contribution.
- Rose and CBUS are joint venture partners that make up Breakfast Point Pty Ltd. The board of Breakfast Point has set certain financial hurdles to allow a project to proceed, whilst the $3.5 million counter offer from Canada Bay Council would reduce the profit level below the required level.

SGS considers the statement above to be fair. However, the supplementary report did not provide details on how the $1.8 million figure was derived from the aforementioned justifications.

2.2 Canada Bay Council

Background

During our meeting with Canada Bay Council, we have been provided with an abstract on Council's justification of the counter offer to Rosecorp of **$3.5 million** (at December 2009). The abstract states the following notes/responses to Rosecorp's offer:

- *Removal of cost implication to Rosecorp of approximately $4.5 million (cost provided by Rosecorp at Sep 2008) to remediate the site (and to construct the base building works for the adaptive re-use)*
- *Site as is has minimal potential to generate ongoing revenue for Rosecorp to cover maintenance costs of heritage buildings on the site*
- *Transition to a profitable re-use of the site leads to an estimated of $4.39 million and land value of $2.186 million*
- *Land in question is highest view land within the whole development based on aspect &views.*

Valuation method

According to the abstract, Council's $3.5 million offer was mainly based on the following:

- *Land that was to be dedicated to Council under condition 11 equated to over half of the entire site of approximately 4000 square metres (i.e. 2100 square metres)*
- *Based on six dwellings on the site, land formerly to be dedicated to Council would accommodate 3 of those. So, half of the profit and half of the land value equate to $3.3 million.*

Data sources/ assumptions

No data source or assumption about Council's evaluation is made available to SGS.

Issues arising

In principle, SGS agrees that Council is entitled to half of the Residual Land Value (estimated to be around $2.186 million by Rosecorp) from the residential development on the Powerhouse site, as half of the land would be dedicated to Council under the planning consent of the Concept Plan.

However, Council would not be likely to be directly involved with developing the six residential dwellings and would therefore not be exposed to risks associated with this development. Given that the developer bears all the development risks but profits are shared, an appropriate allowance should be made in the RLV calculation.

3 ALTERNATE USE OF POWERHOUSE SITE

As outlined in section 1, part of this study involves examining and evaluating the public benefit associated with the dedication of the Powerhouse building and its curtilage. To estimate this benefit, it is critical to understand what the Powerhouse building would have been used for if it had been refurbished and dedicated for public use or originally intended.

For this reason, we have consulted with both Canada Bay Council and Rosecorp to understand their views on the possible use of the Powerhouse site.

Consultation findings

Having spoken to both parties, it is clear that there is no will from either party to develop the Powerhouse site into any kind of community facility considering the high remediation costs and on-going maintenance burdens.

Further, both Canada Bay Council and Rosecorp acknowledge that there are already a number of local community facilities (such tennis courts and a country club) provided within the Breakfast Point precinct and therefore the need for additional uses on the subject site is very low.

This suggests that any community facility would work best if it serviced a broader catchment. However, Council also recognises that the accessibility of Powerhouse site is highly constrained by its location and availability of car parks, as suggested in Rosecorp's Proposal. Hence it is probably not suitable for a district-wide community function, such as a library or museum.

Council also indicates that the proceeds from over half of the Powerhouse site could be used to fund the operational costs of other community facilities elsewhere and/or to upgrade the playgrounds or parks in proximity to the Breakfast Point precinct. However, it appears that the nexus between the availability of such income and the on-going operation or upgrade of other community facilities is weak. In other words, these community facilities may still be in place without the income from the land sales.

Assumed alternate use

Assessing the benefits associated with likely public uses of the Powerhouse site would involve making some assumptions that are difficult to defend. Key among these are:

- That there is a need for a particular community facility within the precinct (e.g. museum, library, meeting rooms) **while** no demand assessment has previously been completed
- That the site is suitable for such uses, **while** there appear to be ample local community facilities in the Breakfast Point development. Further access is demonstrably poor and unlikely to efficiently serve a larger catchment
- That a community use of the Powerhouse Building is a likely development scenario, **while** both Rosecorp and the Council have suggested that remediation, renovation and maintenance costs are too high for either party to be interested in pursuing adaptive re-use of the Powerhouse building.

Subsequently, we have concluded that if dedicated for public use, a more likely outcome would be the demolition of the Powerhouse building (subject to retention of specific heritage items) and the use of the remaining land as public open space. This implies that the loss of public benefits to the community (should site be used for residential development) would equate to all the benefits associated with dedicating the site as a public open space.

4 OPEN SPACE BENEFITS

This section identifies the various classes of benefits likely to be generated by the public dedication of the Powerhouse site as open space, including benefits accruing to both users and non-users. A number of valuation methods for measuring the direct user benefits are explored. Lastly, the public benefits associated with the dedication of the Powerhouse site as open space are estimated and discussed.

4.1 Benefits of a public open space

To account for a full spectrum of benefits associated with the provision of public open space, we have completed a review of the previous SGS studies and recent literatures. The following table summarises the key benefits that the community can derive from a public open space. They include those that accrue to users (or visitors) of the open space and non-users.

TABLE 1. PUBLIC BENEFITS OF OPEN SPACE

Type of benefits		Descriptions
User benefits	Direct user value	Visitation experience benefits
	Indirect user value	Indirect usage benefits such as health benefits
	Option value	Value of having option to use the open space in future
Non-user benefits	Bequest value	Value of knowing the open space will be left for future generations
	Existence value	Value of knowing the open space exists for enjoyment of others

Source: SGS, 2012

User benefits are based on conscious use of environmental goods in consumption and production activities. In this case, the main user benefit would be utilities (or enjoyment) derived by visitors from the use of the open space. *Non-user values* involve intangible current interaction between the environmental good and the people who benefit from it. For example, people who do not use an open space can derive satisfaction from its continued undisturbed existence. Non-user benefits can be categorised into option value, bequest value and existence value, as described in Table 1.

However, considering the ample environmental amenities at Breakfast Point, such as waterfront foreshore walk, Silkstone Park and The Village Green, and their proximity to the Powerhouse site, we suggest that the addition of around 5000 square metre open space to the Precinct would not induce significant non-user benefits and indirect user benefits. Therefore, the remainder of this section focuses on the evaluation of the direct user benefits.

4.2 Evaluation methods

There are different methods for measuring and placing a dollar value on use benefits of environmental goods (i.e. non-market goods). These can be divided into three categories.

Revealed preference approaches

These approaches infer values from behaviour in actual markets which are related in some way to the environmental good. Methods within this category include hedonic pricing and travel cost.

Hedonic pricing is used to estimate economic values for environmental goods that directly affect market prices. It is most commonly undertaken using variations in housing prices to calculate the value of local environmental attributes, such as air pollution or access to parkland.

Travel cost is used to value recreational sites based on how much individuals are willing to pay to travel to the site in order to gain access to environmental goods, including an allowance for consumer surplus.

Stated preference approaches

This approach asks people to directly state values for environmental goods rather than inferring values from actual behaviour (as with revealed preference approaches). Methods within this category include contingent valuation, conjoint analysis, and choice modelling.

Contingent valuation uses survey methods, in which respondents are asked what they are willing to pay for described hypothetical environmental changes.

Choice modelling also uses survey methods. Respondents are asked to make a series of choices between different sets of environmental attributes, one of which represents the status quo. One attribute in each set is measured in dollars, which makes it possible to estimate how much the average respondent is willing to pay for changes in each of the environmental attributes.

Benefit transfer approaches

This is another category that can include any of the methods set out above. This technique estimates economic values for environmental goods by transferring available information from studies already completed in another location or context. Benefit transfer is used when it is too expensive or too little time is available to conduct an original valuation study.

For the purpose of this study, the travel cost method is used as the primary technique for the evaluation of the direct user benefits associated with dedicating the Powerhouse site as a public open space. The stated preference approach (albeit providing direct measure of the willingness to pay) involves survey works, which fall outside of the budget and scope of this study.

4.3 Estimating visitors' willingness to pay

The total user benefits derived from accessing the open space (or willingness to pay) have been estimated in two steps:

1. Estimating visitation to the open space
2. Estimating the user benefits derived by visitors using the travel cost method as described above.

Each of these steps is detailed below.

Estimating visitation

As no visitation data for the surrounding park land is available, SGS has simulated the visitation to the Powerhouse site, if dedicated for community uses as open space, using the Parks Victoria (PV) parkland visitation forecasting model[2]. SGS has in the past cross-checked the results from this model with the visitation projection from other sources. We find that this model produces reasonable good estimates for the visitation of public parkland.

The PV model was developed by regressing actual visits to 29 major parks in Melbourne against a measure of the standard of each park, the catchment population of the park and the accessible area of the park.

PV's preferred form for the model is as follows:

$$Visits = 27 \times Service\ Standard^{1.04} \times Catchment\ Population^{0.19} \times Area^{0.11} \times Public\ Awareness^{0.47}$$

Where:

- Service standard is defined on a scale of 0-100 based on 17 park attributes that are important to visitors, estimated using a PV weighting system;
- The catchment population is based on that population which lives within a 15 minute drive of the parkland;
- Area refers to the publicly accessible area of parkland in hectares; and
- Awareness is defined on a scale on 0-100 based on how well known the parklands are to the community.

The model was found to explain 75% of the variation in observed visitation at the sample parks.

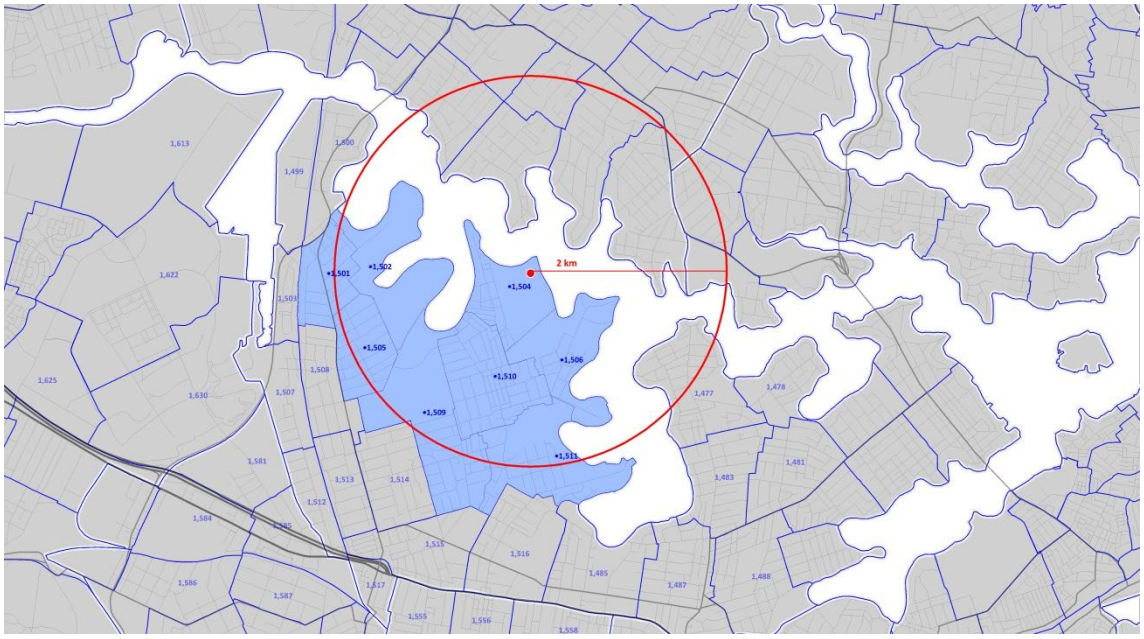
[2] Zanon, D. (1998) A Model for Estimating Urban Park Visitation An Occasional Paper published by Parks Victoria

According to the list of service standard attributes and their weightings used in the PV model, we have rated the service standard of the dedicated open space at Breakfast Point at around 27 (see details in Appendix 1). While most of the services/facilities considered in the original model are unlikely to be provided at the study site, ones that the site is likely to feature include safe access to park facilities, adequate car parking, adequate length of grass, high standard of maintenance and suitable opening hours.

The PV model also suggests that the visitation to the parkland is partly determined by the population within a 15 min drive catchment. However, since the VP model focuses on the major parks in Melbourne, we consider using the same catchment size would be inappropriate for the type of open space that are likely to be provided at the subject site. According to the DP&I's *Recreation and Open Space Planning Guidelines for Local Government* (2011), the dedicated open space and its surrounding foreshore areas are classified as a District Park, which is likely to draw visits from those people living within a 2 km distance from the park.

This 2 km catchment from the study site is illustrated on the map below. Given the peninsular shape of Breakfast Point precinct, visits are more likely to originate from eight travel zones (highlighted in blue) on southern part of the catchment. Resident population within these travel zones is forecast to increase from 17,400 in 2011 to 21,400 in 2036, according to the *Bureau of Transport Statistics (BTS) Population Projection* (2009).

FIGURE 1. POPULATION CATCHMENT OF THE STUDY SITE



Source: SGS, 2012

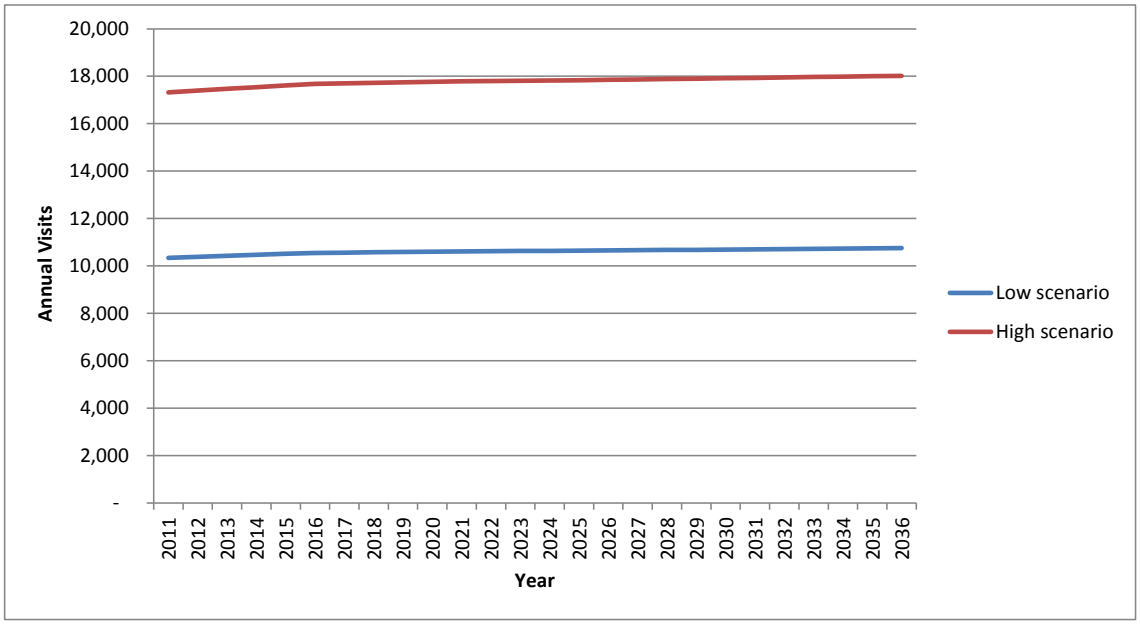
Further, we have estimated that the public awareness for the dedicated open space is likely to range from 5-15[3], subject to the extent of marketing and promotional efforts made by Council.

The area of the open space used in the model is 0.5 hectare, as indicated in Rosecorp's Proposal.

Using the PV model and estimated value for each component of the model, annual visitation to the dedicated open space is projected to 2036 and is illustrated in the chart below. The low and high scenarios are modelled based on the public awareness score of 5 and 15 respectively.

[3] In the original PV modelling data (Zanon 1998), public awareness was benchmarked as follows: Cardinia Reserve (65%); Jells Park (67%); Maroondah Reserve (57%); Silvan Reserve (54%); Wattle Park (55%); Upper Yarra Reserve (50%); and Yan Yean Reserve (51%). We consider the public awareness of the subject site (if dedicated for open space) is likely to be well below those parks or reserves being benchmarked against in the original modelling.

FIGURE 2. VISITATION PROJECTIONS, LOW AND HIGH PUBLIC AWARENESS



Source: SGS, 2012

According to the results predicted by the PV model, the annual visitation is likely to reach 10,700 - 18,000 by 2036, which is equivalent to 0.5 – 0.85 visits per annum per local resident (within the catchment defined above).

Estimating direct user benefits

To value the direct user benefits, the travel cost method has been used. The travel cost method, as implied by its name, uses the travel costs incurred by visitors as a proxy to their 'willingness to pay' to gain access to a community facility (in this case the open space). This assumes that visitors are rationale individuals who would only travel to a community facility **only if** the benefits derived from using the facility outweigh the costs incurred, including travel time, petrol costs and vehicular wear and tear. Otherwise, the trips/visits would not be made.

An assumption is implicitly made that the visitors are well appraised of the facilities and services on offer before deciding to make the trip/visit. Such a technique is used regularly in valuing the benefits derived from recreational assets. Importantly, the travel cost method is considered to generate **conservative** estimates of direct user values.

The table below depicts the values of key parameters that we have estimated for the travel cost calculation, as well as the associated data sources and assumptions. The average travel cost is estimated to be around $5.6 per visit.

TABLE 2. KEY PARAMETERS FOR TRAVEL COST ESTIMATION

Travel cost method valuation parameter	Estimated Value	Unit	Source/Assumption
Weighted average travel time (one way trip)	5.3	minutes	Based on the BTS travel time matrix. It assumes an equal tendency of visiting the open space by residents in all travel zones within the 2km catchment.
Weighted average travel distance (one way trip)	4.4	kms	Based on an average vehicle speed of 50 km/hour
Value of travel time	$0.23	per min	Sourced from Austroads (2008) Guide to Project Evaluation: Part 4 Project Evaluation Data. Parameters provided are for June 2007. Parameters were inflated into June 2012$ using standard ABS Consumer Price Index
Vehicle operating cost	$0.20	per km	
Vehicle occupancy rate	1.6	per vehicle	Sourced from Austroads (2008) Guide to Project Evaluation: Part 4 Project Evaluation Data.
Average travel cost per visit	**$5.6**		Derived from the values above

Source: SGS, 2012

Previous SGS studies have also found that user's wiliness to pay to gain access to a public park could sometimes well exceed the cost incurred. This difference is referred as consumer surplus. However, estimating the consumer surplus would require undertaking a study-specific survey to find out visitors' willing to pay for a described environmental change (in this case converting the Powerhouse site to open space). For that reason, we have not included the consumer surplus in this evaluation.

After applying the average travel cost of $5.6 per visit to the visitation projection, we have calculated the direct user benefits of the dedicated open space at Breakfast Point over 25 years, as shown in the table below. After discounting the annual user benefits using a seven percent real discount rate (as recommended by the *NSW Treasury Economic Appraisal Guideline*), the present value is estimated to be around **$0.75 million** under the low visitation scenario and **$1.2 million** under the high visitation scenario.

TABLE 3. ESTIMATED DIRECT USER BENEFITS OF DEDICATED OPEN SPACE

Years	Annual Visitation		Direct user benefits (in 2012$)	
	Low scenario	High scenario	Low scenario	High scenario
2011	10,337	17,324	$57,660	$96,632
2012	10,381	17,397	$57,903	$97,039
2013	10,423	17,468	$58,141	$97,439
2014	10,465	17,539	$58,376	$97,832
2015	10,507	17,608	$58,606	$98,218
2016	10,547	17,676	$58,833	$98,598
2017	10,560	17,698	$58,905	$98,719
2018	10,573	17,720	$58,978	$98,840
2019	10,586	17,741	$59,050	$98,961
2020	10,599	17,763	$59,121	$99,081
2021	10,612	17,784	$59,192	$99,200
2022	10,619	17,797	$59,235	$99,272
2023	10,627	17,810	$59,278	$99,343
2024	10,635	17,823	$59,320	$99,415
2025	10,642	17,835	$59,363	$99,486
2026	10,650	17,848	$59,405	$99,556
2027	10,660	17,865	$59,461	$99,650
2028	10,670	17,882	$59,517	$99,744
2029	10,680	17,898	$59,572	$99,837
2030	10,690	17,915	$59,628	$99,930
2031	10,700	17,932	$59,683	$100,022
2032	10,710	17,949	$59,741	$100,120
2033	10,721	17,967	$59,800	$100,218
2034	10,731	17,984	$59,858	$100,315
2035	10,741	18,002	$59,916	$100,412
2036	10,752	18,019	$59,973	$100,509
		Present Value:	**$745,027**	**$1,248,587**

Source: SGS, 2012

5 RECOMMENDED VALUE FOR THE 'LOSS' OF PUBLIC DEDICATION

In summary, SGS suggests that the RLV approach is a more reasonable way to value the 'loss' of the public dedication. This is due to the fact that:

- there is no clear proposal for a community use for the Powerhouse building
- survey data for willingness to pay and willingness to visit the Powerhouse site (if developed for community uses) does not exist
- the application of the Park Victoria model to estimate the visitation numbers may be problematic given the very small size of the open space.

Therefore, we have revised the Residual Land Value calculation prepared by Rosecorp in light of the issues noted earlier. The table below compares the revised calculation with the figures prepared by Rosecorp and highlights the key changes that we have introduced to the calculation.

TABLE 4. REVISED RLV CALCULATION FOR THE RESIDENTIAL DEVELOPMENT

	Rosecorp calculation	SGS calculation
REVENUE		
Sales 6 houses/dwelling	$25,200,000	$25,200,000
Gross Revenue	$25,200,000	$25,200,000
Selling costs		
Marketing Costs (1.25% of GR)	$315,000	$315,000
Agents Fees (2.5% of GR)	$630,000	$630,000
Sales Legal Fees ($3500 per dwelling)	$21,000	$21,000
Miscellany ($1000 per dwelling)	$6,000	$6,000
Total	$972,000	$972,000
GST	$2,160,000	$2,202,545
NET REVENUE	**$22,113,000**	**$22,025,455**
DEVELOPMENT COSTS	**$14,001,830**	**$14,001,830**
Interest on costs (8.9% p.a. over 18 months)	**$1,535,000**	**$1,910,238**
Profit target		
% on cost	25%	20%
Expected profit	**$4,390,000**	**$2,800,366**
RESIDUAL LAND VALUE	**$2,186,170**	**$3,313,021**

Source: Rosecorp's estimates and SGS estimates

As shown in Table 4, main changes to the Rosecorp's land value calculation include:

- **Interest on costs** – as noted in the earlier section, applying an interest rate of 8.9% per annum to the total development cost of $14 million results in a total interest cost of $1.9 million per annum, instead of $1.5 million shown in Rosecorp's calculation.

– **Expected profit** – In Rosecorp's RLV calculaton, the expected profit on cost was set at 25 percent. In reality, the profit target set by a developer varies across different projects, depending on the level of risks involved, the risk appetite of the developer and the capital structure for the project. We consider that a 20 percent profit margin would be a typical level included in a development feasibility analysis[4]. Therefore, we have replaced the 25 percent profit target with 20 percent in the revised calculation.

In addition to these changes, we have also sense-checked the achievable sales prices for the six separate houses by examining recent sales of four bedroom houses (with at least 500 sqm land area) in the neighbouring area. According to the RPdata, a four bedroom house at 93 Peninsula Drive Breakfast Point (which is only one block away from the Powerhouse) was sold for $3.5 million in September 2011. After applying an average annual capital growth rate of 7.9 percent (that is a 10 year average rate of increase in median sales price according to RPData) in the Breakfast Point suburb, the sale price is expected to reach $4.15 million in 18 months, which is very close to the revenue estimate used by Rosecorp. Note that this estimate has not taken into account the price premium for a brand new house, as the house sold for $3.5 million in 2011 was six years old. However, we expect that this premium is likely to be offset by the slowdown in the top end market as observed in recent years.

The revised calculation shows that the residential development is likely to result in a RLV of around $3.3 million. As half of the Powerhouse site would be dedicated to Council under the planning consent of the Concept Plan, we suggest that a reasonable offset figure for the loss of the public dedication would be half of the $3.3 million land value, which equates to an upfront contribution of $1.65 million.

[4] Bryant, Lyndall (2010) Constraints to cost effective land supply. In of the 16th Annual Conference of the Pacific Rim Real Estate Society, Pacific Rim Real Estate Society (PRRES), InterContinental Hotel, Wellington, New Zealand. Page 19, http://eprints.qut.edu.au/32586/

APPENDIX 1

SERVICE STANDARD ATTRIBUTES AND THEIR WEIGHTINGS

Service standard attributes	Weightings used in the PV model	Scores for the dedicated open space at Breakfast Point
1. Safe access to Park Facilities Car parking and pedestrian trails that provide safe access to park facilities	5.8	5.8
2. Adequate Car Parking Sufficient conveniently located car parking spaces.	6.2	6.2
3. Adequate Number of Toilet Facilities Sufficient number of toilets in suitable locations.	6.7	
4. Clean Toilets Toilet facilities clean and well maintained.	8.2	
5. Tracks, Trails and Paths Adequate number of clearly defined tracks and trails for visitors to explore or use the park.	6.4	
6. Suitable Surface for Tracks, Trails and Paths	5.4	
7. BBQ Facilities Provision of sufficient BBQs in convenient locations.	6.5	
8. Picnic Areas/Furniture and Facilities Sufficient seating and tables in BBQ for picnic purposes.	7.2	
9. Safe Children's Playground/Play Areas Adequate provision for constructed playgrounds and natural areas suitable for unstructured play.	6.1	
10. Adequate Litter Control Measures Information on park litter policy or sufficient number of rubbish bins for park users.	6.3	
11. Signposting and Directions Adequate signs/directions to specific points of interest, trails, picnic areas, exits, etc..	4.7	
12. Shelter Sufficient shelter to provide relief from sun, wind and rain when required.	8	
13. Length of Grass Grass not to long or too short.	4.5	4.5

Service standard attributes	Weightings used in the PV model	Scores for the dedicated open space at Breakfast Point
14. General high standards of maintenance Park is well maintained, things working as they should and everything neat and tidy.	5.9	5.9
15. Ranger Presence or Available Ranger(s) on duty during official opening times to assist visitors, handle enquiries and monitor behaviour of park users.	3.8	
16. Information on the Park Being Visited as well as the Network of Parks Sufficient information available either via brochures, displays, signs or other means.	4.2	
17. Suitable Opening Hours Adequate to meet visitor needs.	4.2	4.2
Total	**100**	**26.6**

Source: SGS estimates based on the PV weighting system, 2012

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