



SGS
Economics
& Planning

VALUING GOOD URBAN DESIGN ON THE GOLD COAST

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insight.



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Glossary of economics terms

Base Case: Represents the state of the world in absence of the proposed initiative. The base case is the benchmark that the project case is compared to.

Benefit-cost ratio (BCR): The ratio of the present value of economic benefits to the present value of economic costs of a proposed initiative. When the benefit-cost ratio is greater than 1 the benefits exceed the costs.

Benefit: A positive impact due to the implementation of a project.

Cost: A negative impact due to the implementation of a project.

Cost-Benefit Analysis (CBA): CBA is a conceptual framework applied to any quantitative project appraisal to determine whether, or to what extent, that project is worthwhile. The core consideration of CBA is: do the benefits of a project or policy outweigh the costs.

Discounted cash flow: Present value of future cash flows generated by a project or policy.

Discount rate: Discount rate is a measure of how much more you would need to receive in the future in order to give up some amount of consumption today. It is used to calculate the net present value of a time stream of benefits and costs. Discounting converts future values into their present-day terms by taking into account the time value of money.

Externality: An effect that one party has on another that is not represented in the market price due to non-existent or imperfect markets. For example, if a new building overshadows an existing street or open space the loss of public amenity is not be taken into account by the developer when pricing the project. Another example is noise pollution from vehicles. Parties operating vehicles may disturb other parties, such as nearby residents, but in the absence of a market transaction between the two parties, there is my cost (or disincentive) to the vehicle owner of their actions.

Kaldor Hicks rule: Kaldor Hicks states that a decision or policy will be more efficient for the society if the gain in welfare by the beneficiaries is greater than the loss in welfare for those adversely affected. In other words, the regulatory initiative would be warranted if the beneficiaries could, if required, compensate those adversely affected and still be better off. This is where the term **net community benefit** comes from. Whether such compensation is actually paid is not material. (Also see 'Pareto' test.)

Net present value (NPV): Net present value is the present value of benefits accruing from a project minus the present value of operating costs.

Opportunity cost: benefit foregone by using a scarce resource for one purpose instead of its next best alternative use. Often used to value the opportunity cost of family labour, that is not usually paid in cash terms.

Pareto test: The 'Kaldor Hicks' rule differs from the 'Pareto' test which is sometimes invoked in town planning practice. The Pareto test is that an initiative is only warranted if there are no losers in the process. The Pareto test is not sanctioned in regulatory impact assessment because it places an unworkable onus of proof on the economic merits of regulatory change.

Present value: The current value of a future cashflow or series of future cashflows, discounted to reflect the time value of money.

Sensitivity analysis: Changing one or several variables in a model to discover how these changes affect the model's output.

Transfer effects: Financial transaction that moves money from one stakeholder to another, but in economic terms do not use or add any real economic value. Common examples include taxes, tariffs, subsidies and financing mechanisms.

Willingness to Pay (WTP): The amount consumers are prepared to pay for a good or service.

EXECUTIVE SUMMARY

Background

The Gold Coast is expected to accommodate 130,000 new dwellings and 150,000 new jobs over the next 20 years. Around two-thirds of these dwellings are planned to be accommodated in renewed centres and key inner-city urban neighbourhoods, with the remaining one-third planned for new communities. This represents a strong focus on the transformation of existing urban areas with good access to public transport, services and infrastructure. The design quality of new development, and in particular, the urban design quality, will be fundamental to the success of this renewal effort. In response, the City of Gold Coast is developing a series of policy initiatives to ensure urban design quality is a key consideration in the planning, design and assessment of new developments.

Report purpose

This report is concerned with the question: **how can we measure the value of good urban design?** A significant literature describes the benefits of good urban design in qualitative terms. However, these benefits are rarely quantified. As a result, it can be difficult for planners and urban designers to argue that the benefits of urban design policies and interventions will outweigh the costs of achieving the intended outcomes.

Urban design is concerned with the arrangement, appearance and function of our towns and cities. Good urban design optimises these components to create sustainable, functional, flexible, productive, healthy, liveable and attractive urban realms.

Some specific concerns with urban design quality on the Gold Coast include: the design quality of public spaces; the quality of building interfaces with the street; consistency in the public realm; the benefits of through-block links; the health impacts of bad design; the value of street trees, and the importance of architectural qualities of building (e.g. contextually appropriate sub-tropical architecture).

Urban design and ‘externalities’

Many urban design concerns are what economists call *externalities*: costs or benefits that are imposed on the broader community as a result of a market transaction because they do not have a market price. Negative externalities are a cost to the community. For example, if a new building overshadows an existing street or open space, there is a loss of amenity for the community, but this is not reflected in the market price paid by purchasers of the project.

Where financial disincentives to imposing negative externalities on the broader community are ineffective or absent, there is clearly a role for planning authorities to intervene. This underscored one of the primary roles for planning policies and design guidelines: to enable the orderly and efficient development of land that, on balance, will generate a net benefit for the broader community (not just a financial return to developers and land owners).

Cost benefit analysis

In this report, we argue that a cost benefit analysis (CBA) approach can be used to assess the costs and benefits of good urban design. The CBA approach considers all impacts, positive and negative, on all parties (developers, building users and the broader community), over the long term. By taking this approach, direct costs, positive externalities of good design, and negative externalities of poor design, can be measured and used to inform policy development and decision-making.

Estimating the benefits of good urban design

In this report, techniques for measuring and monetising the benefits of good urban design are described, drawing on a range of sources, including previous cost benefit analyses of urban design policies. Using a selection of these techniques, we estimate that the *per dwelling* benefits of good urban design could be in the order of \$40,000 per dwelling.

Assuming that 40% of the Gold Coast's projected dwelling supply would achieve this level of improvement in urban design quality as a result of Council's proposed urban design policies, the total benefit to the Gold Coast community of good urban design would be in the order of \$2 billion, over the next 20 years (undiscounted).

VALUING THE POTENTIAL BENEFITS OF GOOD URBAN DESIGN FOR THE GOLD COAST

New dwelling growth 2016 to 2036	130,000
Proportion of new dwellings that achieve higher urban design outcomes	40%
New dwellings that achieve higher urban design outcomes (1)	52,000
Benefit per dwelling (2)	\$41,420
Total benefit (1 x 2)	\$2,153,840,000

CBA case study

To consider both the benefit and the costs of good urban design, the CBA approach was applied to case study developments. Following a review of better practice examples, a hypothetical 'better urban design' version of the development was compared to the existing development.

The likely costs and benefits included:

- Higher construction costs associated with the positive changes to the design of the streetscape interface, architecture of the building and additional planting;
- Higher professional fees;
- Improved public amenity as a result of the better streetscape interface;
- Enhanced visual coherence and stronger sense of place due to better architecture, and
- Enhanced safety and security.

The CBA of this hypothetical example found total costs of \$154,000 and the total benefits of \$275,000. The resulting benefit cost ratio (BCR), which is the total benefits divided by the total costs, was estimated at 1.79. A BCR of 1 or more suggests the benefits of the design changes outweigh the costs. The results suggest that the higher costs to achieve better urban design outcomes would be justified, in this case, as they would result in net community benefit.

Conclusions

A cost benefit analysis approach can be applied to valuing urban design in a number of ways:

- Valuing the total value of good urban design for the Gold Coast community;
- Economic evaluations of specific plans and policies, such as specific plans or policy proposals, to provide support for their adoption, and
- Economic evaluations of the impact of good urban design elements on specific developments. This can be done using some of the key metrics identified in this report or on a 'first principles' basis as either a qualitative or quantitative exercise (see chapter 3). A specific spreadsheet-based or web-based tool could be developed for this purpose, combined with training in its use and the 'fundamentals' of the cost benefit analysis approach.

1. INTRODUCTION

This introductory chapter provides context for the study, describes the features of cost benefit analysis (CBA) and gives an overview of this report's content.

1.1 Background

The Gold Coast is expected to accommodate 130,000 new dwellings and 150,000 new jobs over the next 20 years. Around two-thirds of these dwellings are planned to be accommodated in renewed centres and key inner-city urban neighbourhoods, with the remaining one-third planned for new communities. This represents a strong focus on the transformation of existing urban areas with good access to public transport, services and infrastructure. The design quality of new development, and in particular, the urban design quality, will be fundamental to the success of this renewal effort. In response, the City of Gold Coast is developing a series of policy initiatives to ensure urban design quality is a key consideration in the planning, design and assessment of new developments.

1.2 Study purpose

SGS was engaged by the City of Gold Coast to provide advice and guidance on how the valuing of good urban design might be assessed and measured. The primary objective of the engagement was to assist the Council in its efforts to advocate for better urban design outcomes in new development, by demonstrating the value of good urban design compared to 'business as usual'.

The benefits of good urban design are frequently described in policy documents and publications.¹ However, despite this rich literature, processes for valuing these benefits, or for comparing them to costs, are not well understood, nor routinely practiced.

This report seeks to shed some light of the potential to value the benefits of good urban design and compare the costs and benefits in an objective way. We suggest that a cost benefit analysis (CBA) approach can be used to compare the costs and benefits of good urban design in new developments. This CBA approach considers and compares all impacts, positive and negative, that would be incurred by developers, building users and the broader community, over the longer term. Taking this approach, the positive externalities of good design and the negative externalities of poor design can be measured, and inform policy development and decision-making.

1.3 Study methodology

This report draws on a combination of literature reviews, case study analyses and economic appraisal techniques including:

- A review of literature on good urban design and the value of urban design;
- Identification of the benefits and impacts of good urban design, encompassing economic, social and environmental considerations;
- An estimated magnitude of potential benefits of good urban design per dwelling, and
- Application of a CBA approach to three local projects.

In parallel to the development of this report, Gold Coast Council has been developing its urban design policies including a framework that consists of five key design principles, each

¹ See CABA (2001), Ministry of the Environment (2005), CABA (2006), Bole and Reed (2009), Horne et al (2014).

with a series of design elements. These are described below. To the extent possible, the quantifiable benefits of good urban design identified in this report have been aligned with this framework.

1.4 Report overview

The remainder of this chapter provides an introduction to urban design, Council's emerging design policies and an overview of cost benefit analysis.

Chapter two provides an overview of the literature on the value of urban design and outlines the benefits of good design, and techniques for measuring these benefits. The chapter concludes with an assessment of the potential benefits of good urban design (vs 'business as usual') on a per dwelling/household basis.

Chapter three applies a cost benefit analysis approach to three case studies by providing a qualitative assessment of both examples, and a quantitative assessment of the costs and benefits for one of the case studies.

The concluding chapter provides a summary of the main findings of the report and recommends ways in which a CBA approach might be used to assess the value of good urban design on the Gold Coast.

1.5 What is urban design?

Urban design governs the arrangement, appearance and function of our towns and cities (Australian Government et al., 2015). Good urban design optimises these components to create sustainable, functional, productive, healthy, liveable and attractive urban realms.

The UK's Commission for Architecture and the Built Environment (CABE) outlines seven key elements of good urban design from the literature, as follows (2001: 19):

- Character
- Continuity and enclosure
- Quality of the public realm
- Ease of movement
- Legibility
- Adaptability
- Diversity

Past and emerging policy documents produced by the City of Gold Coast² allude to similar elements, and some additional themes including:

- Variety
- Human Scale and Richness
- Understanding
- Edges
- Community Enhancement
- Safety
- Environmental Sensitivity, and
- Urban Greenscape

The concerns of urban design are all encompassing: they span city-scale consideration of accessibility, transport and development capacity through to detailed matters such as building heights, buildings materials, the design of the interfaces of buildings and the street and the design and layout of individual dwellings.

² GCC (no date) Guiding principles for urban design; GCC (no date) Community Benefits Bonus Elements Policy – Phase 2 – Design Elements Overview; GCC (no date) Principles and Requirements: What are we trying to achieve in our buildings?



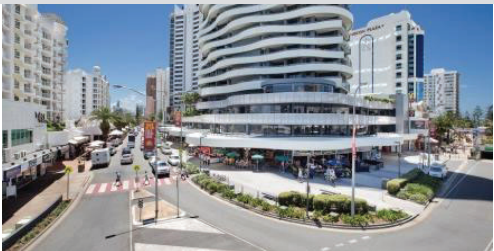

Only architecture that considers human scale and interaction is successful architecture.

Jan Gehl
Project for Public Spaces

It is possible to think of urban design issues or concerns at four scales. These are: the city scale, the suburb or neighbourhood scale, the site or building scale, and arguably³ the dwelling interior scale (see Figure 1).

This report focusses on valuing the benefits of good urban design at the precinct and building scale as these are the issues of most concern to Council at the present time.

FIGURE 1: URBAN DESIGN ISSUES SPAN MULTIPLE SCALES

CITY SCALE	
	<ul style="list-style-type: none"> • Transport accessibility • Development capacity • Regional open space networks • Trunk infrastructure networks
SUBURB/NEIGHBOURHOOD SCALE	
	<ul style="list-style-type: none"> • Land use mix • Density • Local open space • Local road hierarchy • Building typologies
SITE SCALE	
	<ul style="list-style-type: none"> • Interfaces with the street/public spaces • Separation • Setbacks • Building orientation • Energy efficiency • Building design quality • Site coverage • Trees and planting
DWELLING INTERIOR SCALE	
	<ul style="list-style-type: none"> • Internal amenity • Dwelling orientation and layout • Outdoor open space • Outlook and privacy • Communal facilities

³ Vandell and Lane (1989: 237) make a distinction between architecture, “an intrinsic characteristic of the structure itself”, and urban design, “those extrinsic attributes of developments which affect the environment or neighbourhood within which the structure is situated”.

1.6 City of Gold Coast urban design policies

The City of Gold Coast is currently undertaking a review of its City Plan policy – Community Benefit Bonus Elements Policy. As part of this review the Council has endorsed a policy position to incorporate additional design elements into the relevant City Plan codes, and to prepare a *Design and Context Policy* to outline desired urban design outcomes for development.

Work has been undertaken to develop key design principles that will inform the development of the Design and Context Policy and other City Plan updates. This work is likely to be presented to Council for endorsement later this year (2017).

The policy will be applied to: all development that exceeds mapped residential density or building height (where over 16m) in medium density residential, high density residential, centre, neighbourhood centre, innovation and mixed-use zones; all development over 16m in height in the Light rail urban renewal area overlay; and optional application where alternatives to other acceptable outcomes, performance outcomes or overall outcomes are proposed.

In addition, Council will contemplate the incorporation of additional design elements into the relevant City Plan zones to reinforce key design principles and improve useability, and include new and revised performance outcomes for setbacks, site cover, subtropical design, architectural and urban design, urban elements and land uses.

Key design principles

The Design and Context Planning Scheme Policy consists of a framework of five key design principles, each with a series of sub-principles. These principles and sub-principles are listed in the table below and described in more detail in Council's draft Design and Context Planning Scheme Policy in Appendix A.

FIGURE 2:DRAFT DESIGN AND CONTEXT POLICY – PRINCIPLES AND DESIGN ELEMENTS

Principles	Design elements
Principle 1: Engage the Ground Plane	1.1 Active and Engaged - A Positive Interface between Public and Private Realms 1.2 Form and Space - Creating a Human Scale Design 1.3 Safety and Security 1.4 Streetscape Design 1.5 Public Realm Embellishment
Principle 2: High Quality Visual Appearance	2.1 Clarity of Architectural Approach 2.2 Architectural Quality 2.3 Contextual Suitability
Principle 3: Subtropical Living	3.1 Building Design for Passive Climatic Response 3.2 Environmental Performance 3.3 Outdoor Living 3.4 Integrated Landscape
Principle 4: Manage Amenity	4.1 Built Form and Layout 4.2 Residential Amenity 4.3 Diverse and Adaptable Buildings
Principle 5: Responsive Urban Form	5.1 Relationship with City-wide Context 5.2 Relationship with Site and Local Context 5.3 Legibility and Wayfinding

1.7 Introduction to cost benefit analysis (CBA)

This report applies a cost benefit analysis framework to valuing good urban design, and provides guidance on how a CBA approach can be applied to the assessment of the planning proposal, with a view to improving their design quality.

Although the terminology ‘cost benefit analysis’ might suggest a purely economic or monetary perspective, CBA addresses the full spectrum of environmental, social and economic impacts. In the case of assessing proposals for new development on the Gold Coast, this means considering a wide range of impacts that result from changes to the design of the buildings and/or public spaces that are proposed.

In applying a CBA approach, all positive and negative impacts are quantified and monetised (expressed in dollar terms) where possible, and then compared, to determine whether the proposal is likely to make the community better off, or worse off in net terms compared to the default proposed design.

CBA approach

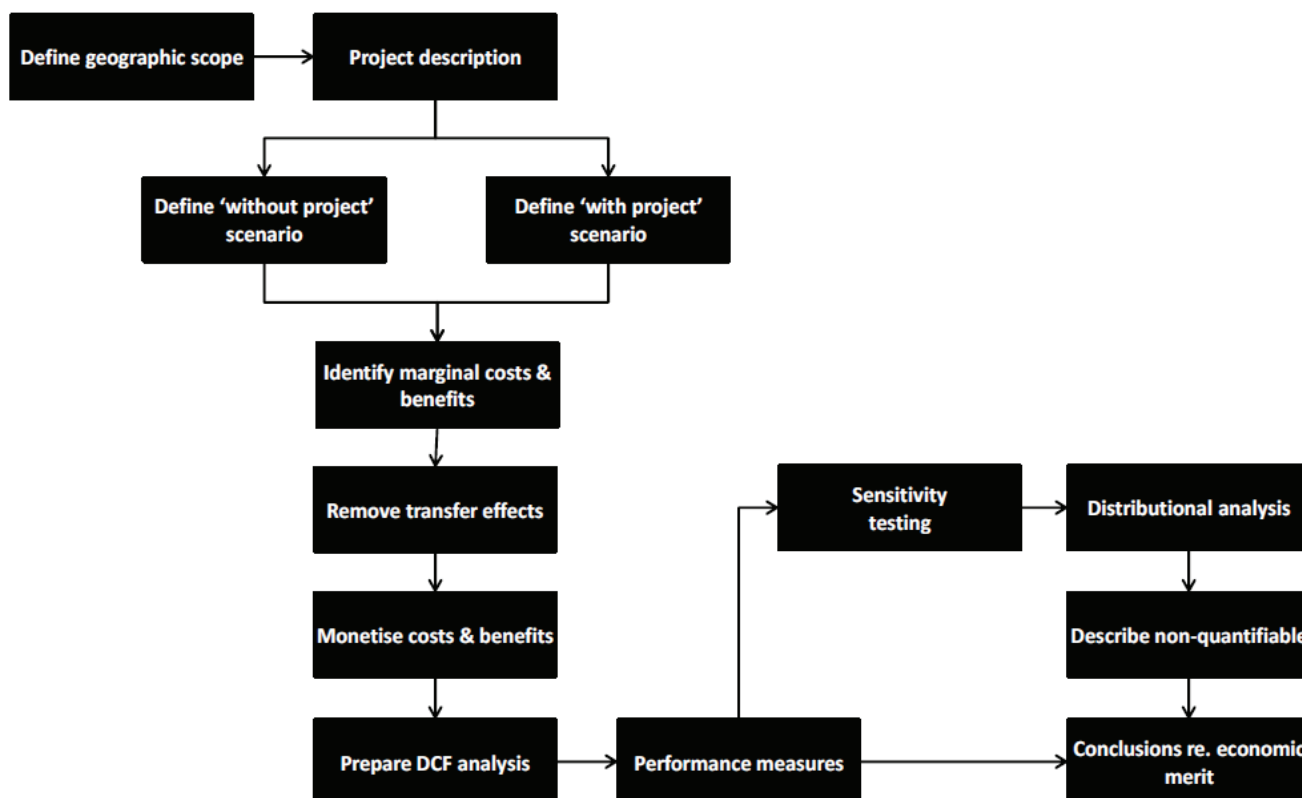
The principal steps in the generic cost benefit analysis method are outlined in Figure 3. The steps are as follows:

- Differentiate the outcomes under a Base Case scenario e.g. the current policy development as proposed, and the Project Case (or Cases) e.g. alternatives to the current policy or proposed design that achieve better urban design outcomes. (These are shown in the diagram below as the ‘without project’ and ‘with project’ scenarios respectively.)
- Identify the economic, social, and environmental costs and benefits that might arise from implementing the Project Case, compared to the Base Case. These are referred to as the marginal costs and benefits;
- Quantify and monetise these costs and benefits where possible, over a suitable project evaluation period, with due acknowledgment of on-going benefits and costs;
- Generate measures of net community impact using discounted cash flow (DCF) analysis over the evaluation period. This requires expressing future costs and benefits in present value terms using a discount rate that is reflective of the opportunity costs of resources diverted to implement the Project Case;
- Test the sensitivity of these measures to changes in the underlying assumptions utilised;
- Describe the distribution impacts of the cost and benefits; and
- Supplement this quantitative analysis with a description of costs and benefits that cannot be readily quantified and monetised.

Traded effects and externalities

All impacts of changes to the development must be taken into account, whether or not they are ‘traded’ effects or ‘externalities’. Traded costs and benefits are those which have a financial value in the market. Externalities on the other hand are unpriced costs and benefits sustained by third parties in any market transaction. Cost benefit analysis must account for these impacts even though they are not directly mediated (bought and sold) in a market. The monetised value of these external effects can be imputed using a variety of techniques.

FIGURE 3: OVERVIEW OF COST BENEFIT ANALYSIS METHOD



Net community benefit

Another vital characteristic of cost benefit analysis is that the community benefit that might result from the proposed change is judged by reference to the 'Kaldor-Hicks' rule. This states that the initiative in question is worth undertaking if the gain in welfare by the beneficiaries is greater than the loss in welfare for those adversely affected. In other words, a particular Project Case would be warranted if the beneficiaries could, if required, compensate those adversely affected and still be better off. This is where the term 'net' community benefit comes from. Whether such compensation is actually paid is not material.

The 'Kaldor Hicks' rule differs from the 'Pareto' test which is sometimes invoked in town planning practice. The Pareto test finds an initiative is only warranted if there are no losers in the process. The Pareto test is not sanctioned in regulatory impact assessment because it places an unworkable onus of proof on the economic merits of a project.

Limitations and common problems of cost benefit analysis

There are some common pitfalls in the assessment of net community benefit. One is to confuse 'economic impact' with 'economic benefit'. The former deals with the commercial flow on effects of an initiative or program (sales made, people employed, suppliers contracted etc.), while the latter relates to an improvement in community welfare.

By way of illustration, a \$10 million construction contract to dig a long trench then fill it up again would generate the same economic *impact* (i.e. multiplier) as a \$10 million contract using the same equipment and workers to undertake earthworks for the improvement of a parkland. The economic *benefit* from the latter is clearly superior to the former.

Another pitfall is to construe construction and operational jobs as a 'benefit' of a proposal whereas they are typically factored into cost benefit analyses as a cost. Since the labour in question has an opportunity cost – it could be deployed elsewhere to produce benefits for the community were it not for the project at hand. Employment is usually only counted as a

benefit when the project creates jobs for people who would otherwise be permanently unemployed or underemployed.

A third common misapplication of economic thinking to the net community benefit test is to implicitly or explicitly confine the analysis to the local district or host region of the development in question. Again, in line with usual advice offered by jurisdictional treasuries, the frame for assessing net community benefit should be set at the State jurisdiction level.⁴ To do otherwise runs the risk of patently illogical findings; that is, a net community benefit may be found for the local area, but this might be more than offset by transfers or external costs for neighbouring communities or the host metropolitan area or state.

The upshot, in the case of measuring the impact of better urban outcomes, the Project Case must generate a net community benefit at the level of the State and not necessarily within the City of Gold Coast.

⁴ Government of Queensland (2015) Project Assessment Framework - Cost-benefit analysis
<https://s3.treasury.qld.gov.au/files/paf-cost-benefit-analysis.pdf>

2. THE VALUE OF GOOD URBAN DESIGN

This chapter provides a review of existing literature on the value of good urban design, reviews some recent examples of economic appraisals of planning and design initiatives intended to improve urban design quality and concludes with a list of potential techniques for measuring and quantifying the benefits of good urban design.

2.1 The value of good urban design

Public versus private value of good urban design

Chiaradia, Sieh and Plimmer (2017) identify three different value types that are used to assess urban design (and other commodities). Namely:

- **Private value in exchange:** This value accrues to the property developer and to the property owner. Good urban and architectural design can have a positive impact on the sale price of a building.
- **Private value in use:** This arises in the use of ‘paid for’ amenities. Good urban and architectural design can increase the comfort, health, safety and liveability of an urban place for residents.
- **Public value:** This arises in the use (or existence) of amenities ‘not paid for’. This value is arguably the most important public policy consideration, as it essentially accrues to ‘the public’ including those who live and work in an area.

From a public value perspective, good urban design can deliver a number of economic, social and environmental benefits. Good urban design can ensure development is more contextually integrated, improves access to areas and amenities and boosts social well-being and civic pride (CABE, 2001). Good urban design can also promote physical and social regeneration, as well as attract and retain employment in an area.

A CABE study found that “physical design, distribution of uses and levels of activity during the day and at night directly determine the degree to which non-occupiers feel welcome in developments, and therefore perceptions of exclusivity” (2001: 79). Moreover, good urban design can enhance social inclusiveness and perceptions of safety in an area, reducing the need for highly visible security measures such as security cameras and security personnel.⁵

In some cases, public value can also be the result of good internal architectural design. For instance, adequate cross-ventilation and insulation in dwellings can result in improved occupant health and will result in avoided public health costs (Banfi et al., 2008; Wargocki et al., 2002).

Urban design and ‘externalities’

As part of the urban landscape, every building contributes in some way to the public realm and the people who occupy it. All buildings and the spaces between them become “part of the whole community’s habitat” (Horne et al., 2014).

Too often, the people who design and construct buildings and parks don’t worry about whether they will work properly or what will they cost to run. Once the project is complete, they can move on to the next job. But the public has to live with badly built, poorly designed buildings and spaces; and taxpayers often have to foot the bill for putting them right again.

John Sorrell
CABE (2006)

⁵ For wider discussion on the benefits of good urban design, see New Zealand Urban Design Protocol, p 13.

The faces of buildings which are turned outwards towards the world are obviously of interest to the public, and all citizens have a property in them. The spectator is in fact part-owner. No man builds to himself alone.

W.R. Lethaby, 1922
(Bole and Reed, 2009)

All buildings impose some costs on society, for instance in their consumption of resources and space that could have been used in other ways (CABE, 2006). Buildings also generate utility and accrue value to their owners and the wider community. In the case of a poorly designed building, the costs imposed on the community can far outweigh the benefits (CABE, 2006). Poor design “locks in owners, the local community and cities into substandard urban environments for decades” (Horne et al., 2014: 4). This can lead to less inclusive, less functional and less attractive spaces for the public, residents, workers and employers (CABE, 2006).

The impacts of poor urban design can include reduced opportunities for walking and activity travel, poor quality public realm (streets and open spaces), fewer employment opportunities in an area and reduced safety and security. Negative impacts of poor urban design not only affect building owners or occupiers, but the broader community.

In economics, these impacts are referred to as ‘negative externalities’: costs sustained by the broader community that are not reflected in market price of the development. A key role for planning authorities is to ensure that new development does not generate negative externalities to the detriment of the broader community.

While *private value* (described above) is a key consideration for developers and land owners, they are, naturally, less concerned about any external costs imposed on the community as these are costs they do not have to bear (CABE, 2006). CABE asserts that “the failure to deliver connected, well-integrated environments imposes costs which later have to be borne by public and private stakeholders, although original stakeholders have moved on” (CABE, 2001: 77).

Intervening in the design of a new development can reduce negative externalities, and help to generate positive externalities. Good urban design can help to ensure that new development has an overall positive impact on the wider community.

2.2 Barriers to achieving good urban design

SGS has identified two key barriers to ensuring the delivery of good urban design in new developments.

Perceptions of the amorphous nature of ‘good design’

Firstly, there is a notion that ‘good’ urban design is not an empirically assessable quality but a matter of personal tastes and styles (CABE, 2006). What qualifies as good design can in some cases be context-specific and vary between stakeholders (CABE, 2001; Jeffrey and Reynolds, 1999). There are however key, widely-accepted elements of good design as outlined in the previous chapter. These hold considerable weight as they “suggest clear, objective attributes against which success in urban design can be assessed” (CABE, 2001: 19).

Decision makers often start by assuming that good architecture and urban design are a matter of personal taste and style. Once we have disabused them of that false notion, their next line of defence is that it adds too much to the cost of development. They assume good design doesn't add enough value to justify any additional costs it might bring with it.

Richard Simmons, CABE (2006)

Real and perceived financial implications of incorporating good design

A second barrier is the notion that incorporating good urban design into a development imposes too great a financial cost, without adequate and timely financial return (CABE, 2006; Horne et al., 2014; New Zealand Ministry for the Environment, 2005). The literature generally suggests that while there may be greater upfront or short-term costs resulting from consideration of good design, these are far outweighed in the longer-term (CABE, 2006; Ministry for the Environment (NZ), 2005).

However, developers frequently overlook the long-term benefits of good urban design (CABE, 2006: 12) because property development is for the most part, “carried out and funded on the assumption that the developer will not retain a long-term financial interest in the property”. Likewise, developers are generally disinclined to create positive externalities because they cannot derive a return from these per se.

Despite this, from a private, financial perspective, good urban design can add direct value by producing more competitive and demand-responsive products with low management, maintenance and security costs, thereby effecting high returns on investments (CABE, 2001). While investment decisions are often “dominated by economic and locational concerns ... urban design is still a major factor; faced with otherwise comparable developments, occupiers may decide on the basis of urban design quality” (CABE, 2001: 75).

Some studies even suggest that the incorporation of good design elements in a project can overall be ‘cost neutral’, particularly when given due consideration early in a project’s development (Horne et al., 2014).

The financial cost of good design elements also has implications for the valuation of good urban design, such that the measurement of value often places a high degree of importance on private exchange value, to the detriment of other important factors. This is further expounded upon in the following section.

2.3 Measuring and valuing good urban design

To understand the public value of good urban design, and ensure that it is appropriately considered in private developments, it is useful to be able to measure it in an objective way.

While there is general consensus in the literature around the benefits of good urban design, there is limited guidance on how to value it, particularly across the many design elements. As discussed by Horne et al. (2014: 4), a key challenge in endeavouring to assign a value to good design is the adoption of an “uncontroversial and robust” method to measure it.

Chiaradia, Sieh and Plimmer (2017: 68) assert that conventional property valuation methods have been grossly inadequate in assessing the value of urban design, as “most of the methods deployed do not have adequate descriptive mechanisms for dealing with those physical, spatial and configurational characteristics that are the essence of urban design”.

Key issues in valuing good urban design

Current methods of appraisal of good and bad urban design place greater emphasis on design choices that result in private benefits, particularly those that contribute to a higher private exchange value. As Chiaradia, Sieh and Plimmer (2017: 68) assert:

“[Not] all urban design features that are important and meaningful to users are relevant for arriving at ‘market price’ ... Conventional valuations articulate private value in form of market price for purposes of the transaction of exchange, and do not always have a way of accounting directly for public value and value in use, which are so central for urban design.”

Often overlooked in appraisals are also those values that are more amorphous or difficult to measure. These can include qualities such as image value, social value, environmental value and cultural value (Horne et al., 2014).

Valuation of urban design can also be difficult in terms of degrees of improvement. It is often measured on a simple scale from good to bad, with little room for variation (CABE, 2001). Research by Vandell and Lane (1989) further acknowledges that value can be added in some contexts, but not in others. As such, it can be difficult to arrive at a concrete measure of the value of good design.

2.4 Case studies in valuing urban design

To provide a counterpoint to these issues in the valuing of good urban design, the following section presents three examples of efforts to value policy and building form changes, intended to improve the design of the built environment.

City of Melbourne Local Liveability Project

Like the City of Gold Coast, the City of Melbourne recognised a need to value good urban design principles to guide and transform the development of Melbourne's neighbourhoods. The principles valued in this particular project include greater pedestrian permeability, less car parking, increased mixed-use development, and a safer and more inviting public domain. These principles are referred to as Local Liveability (LL) principles.

We shall see later, that variation in market prices can provide insights to *some* public benefits of good design, for example: access to quality public realm.

SGS sought to examine the economic merits of the local liveability (LL) principles at the development site and superblock level using the cost benefit analysis (CBA) method (SGS, 2016b). This entailed:

1. Postulating the type of development that might occur on the selected case study site/superblock given business as usual (BAU) approaches to development controls and standards.
2. Postulating two alternative development scenarios for the case study site/superblock, which maintained a similar overall yield and building envelope but which was consistent with the LL principles.
3. Identifying the additional costs incurred by the developer, residents and the wider community in departing from the BAU scenario to deliver the LL scenarios.
4. Identifying the additional benefits received by the developer, residents and the wider community in departing from the BAU scenario to deliver the LL scenarios.
5. Quantifying and wherever possible, monetising these costs and benefits.
6. Expressing these costs and benefits in present value terms using an appropriate discount rate and comparing them to see if benefits exceeded costs, that is: if a net community benefit was delivered.

While the alternative scenarios presented costs such as foregone parking utility (with a reduced number of car parking spaces), and higher development approval costs, a number of benefits were anticipated. These included: improved dwelling utility (better ventilation, sun-lighting and energy efficiency, build cost savings, better access to quality public domain, health benefits associated with induced walking, more and higher quality trees, reduced greenhouse gas and other negative externalities, and reduced crime per capita).

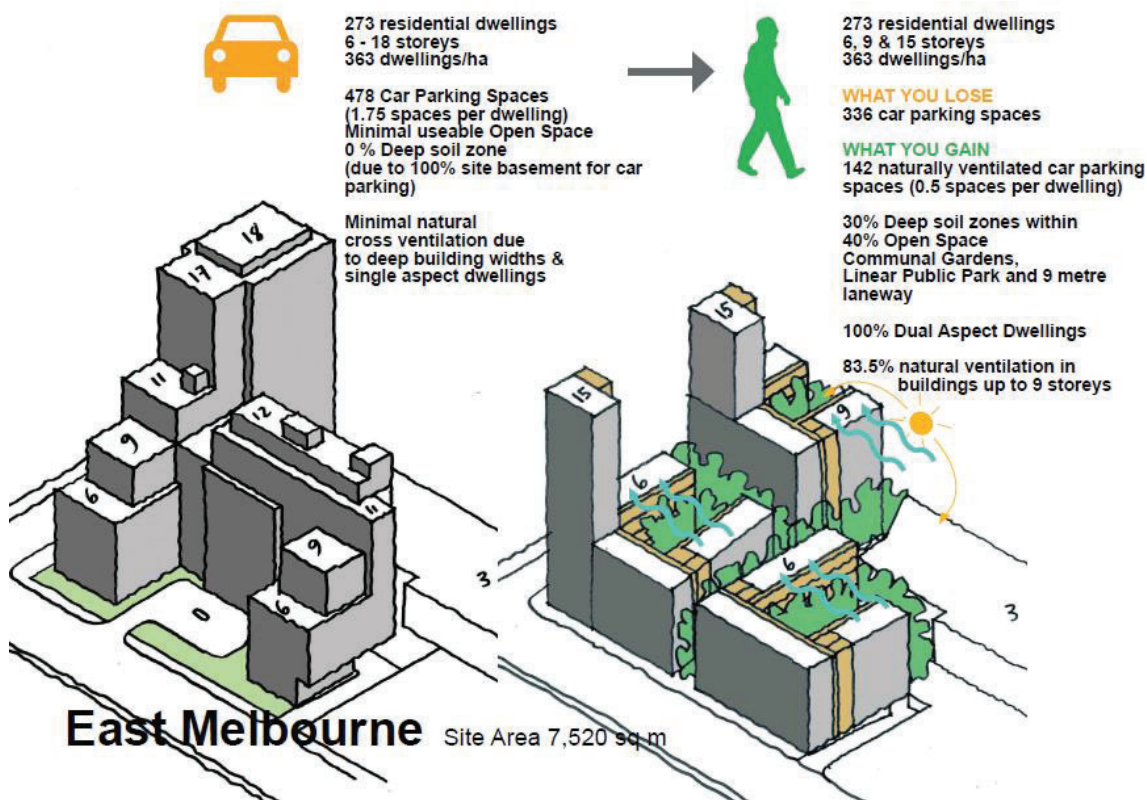
It was found that the costs of implementing the local liveability principles in the hypothetical development are outweighed by the benefits. Application of the LL principles was found to generate a benefit cost ratio (BCR) of 3:1:1, and a net present value (NPV) of \$51 million.

Around 58 per cent of marginal costs in the project case were attributed to the construction costs associated with the additional residential and commercial floorspace required in the LL standards. Conversely, the biggest contributors to the \$75 million of benefit were: avoided construction costs for basement car parking (\$34.2 million), improved housing utility for the

site in question (\$33.7 million); access to quality public domain (\$4.0 million); saved build costs (\$3.1 million); and reduced crime (\$2.1 million).

This example demonstrates the application of the cost benefit analysis approach to application of urban design policy at the precinct scale.

FIGURE 4: LOCAL LIVABILITY PROJECT - BUSINESS AS USUAL AND ALTERNATIVE



Source: City of Melbourne

Better Apartments Design Standards (BADS)

In 2016, the Victorian Government identified a range of options for regulatory reform to improve apartment design standards across the state – the Better Apartments Design Standards (BADS).

SGS completed a formal cost benefit analysis to determine whether the initiative would deliver a net community benefit. This involved conceptualising and measuring the range of economic, social and environmental costs and benefits that would arise from the adoption of the BADS.

Similar to the CBA described above, the steps in the assessment were as follows:

1. Differentiating between the outcomes under a 'business as usual' or 'base case' scenario (continuing with existing standards for apartments) and those arising from the new regulations (the 'with project' scenario)
2. Identifying the economic, social and environmental costs and benefits that might arise in moving from the 'base case' to 'with project' scenario
3. Quantifying and monetising these costs and benefits, where possible, over a suitable project evaluation period (in this case 20 years)
4. Generating measures of net community impact using discounted cash flow techniques over the 20 year duration; this requires expression of future costs and benefits in present

value terms using a discount rate reflective of the opportunity costs of resources diverted to implement the reforms

5. Testing of the sensitivity of these measures to changes in the underlying assumptions utilised
6. Supplementing this quantitative analysis with a description of costs and benefits that cannot be readily quantified and monetised.

The anticipated costs of the Better Apartments Design Standards, relative to business as usual, included a reduced reserve of development capacity, higher apartment construction costs, and increased network infrastructure and transport externalities due to a one-off displacement of development to the urban fringe.

The anticipated benefits included improved dwelling amenity for new apartments, better public realm amenity, and improved health for apartment residents, improve accessibility standards in apartments and enhanced reputation of Victoria as a place of design quality.

Costs and benefits that could not be quantified and monetised were addressed qualitatively.

This study found that the Better Apartments initiative would generate a net community benefit, resulting in higher quality dwellings, improved health outcomes for residents and improvements in the public domain.

The BADS initiative was found to have a BCR of 1:51:1 and a NPV of \$2 billion for the state. The most significant costs and benefits are as shown in the table below.

This case study highlights the potential for application of the cost benefit analysis approach to the assessment of planning and design policy that would apply to a particular class of new development (in this case apartment buildings of four or more storeys).

FIGURE 5: SIGNIFICANT COSTS AND BENEFITS FROM BADS COST BENEFIT ANALYSIS

Description of Cost and Benefit	Proportion of Cost and Benefit
Reduction in Reserve of Development Capacity	24% of Costs
Higher Construction Costs	74% of Costs
Improved Dwelling Amenity	47% of Benefits
Improved Public Amenity	13% of Benefits
improved Health and Wellbeing	28% of Benefits

Design Quality Indicator (DQI)

In response to interest from designers and government to add value by design in the development industry, the UK's Construction Industry Council (CIC) began the development of a new tool for assessing the design quality of buildings (Gann, Salter and Whyte, 2003).

The tool was designed to be used by stakeholders in the production and use of buildings, including occupants and visitors, as well as practitioners involved in the commissioning, design, planning, production and management of the built environment (HM Treasury, UK, 2011).

The tool's conceptual framework is based on three underlying qualities: function, build quality and impact (CIC, 2017). Function incorporates use, access and space qualities. Build quality incorporates performance, engineering systems and construction aspects. Finally, impact incorporates contribution to form and materials, internal environment, urban and social integration, and identity and character (Gann, Salter and Whyte, 2003).

The tool assesses design as a product (i.e. the buildings themselves), rather than assessing the design process (Gann, Salter and Whyte, 2003). It incorporates a questionnaire, which collects information about the respondent and the type of building, and asks respondents to indicate

their response to each subsection (e.g. ‘use’, ‘access’ or ‘form and materials’) on a scale from one to six. Respondents must then give a weighting in terms of the importance of each feature to their building. This weighting is then used to undertake a multi-criteria analysis.

The DQI has been utilised in the design of over 1,400 projects in the UK and around the world since its inception in the early 2000s (CIC, 2017). Projects include the National Assembly for Wales, the Queens Museum of Art and the King’s College London Quadrangle and redevelopment of surrounding buildings.

The DQI tool is an example of applying an economics evaluation framework to individual buildings.

2.5 Valuing the benefits of good urban design

These case studies have demonstrated that there are a range of techniques that can be used to measure the costs and benefits of urban design policies, or the influence of urban design measures on specific development proposals.

The table overleaf provides an overview of the benefits of urban design alongside approaches that might be used to measure these benefits. The table is structured by the five principles and their various design elements that are described in Council’s draft Design and Context Planning Scheme Policy.

The ‘benefits’ column describes the specific benefits that are likely to result from a new development achieving its intended outcome. The next column suggests whether these benefits are private, public or both. Private benefits will accrue to the occupants of the development whereas public benefits flow to the wider community. For some design elements there are both public and private benefits and different techniques might be required to measure each.

The next two columns in the table briefly describe potential strategies for measuring the benefits and typical values or calculation methods that have been used in other studies to convert the benefits into dollar values. The final column provides the source of the information described in the previous columns.

Not all design elements have specific measurement strategies or typical values assigned to them. This is not to say that these elements cannot be measured, but, rather, that SGS was unable to find appropriate guidance in the time available.

TABLE 1: STRATEGIES FOR MEASUREMENT AND MONETISATION

ELEMENT	BENEFITS	PUBLIC OR PRIVATE BENEFIT	MEASUREMENT STRATEGIES	TYPICAL VALUES AND CALCULATIONS	SOURCE
Strategy 1: Engage the Ground Plane					
1.1 Active and engaged – A positive interface between public and private realms	Improve experience of ground plane for residents, workers and the public.	Public	Increase is pedestrian activity in areas with higher quality ground plane interface and/or more human-scaled built form.	A 5 point increase in 'Walk score' (a proxy for pedestrian activity) creates a 0.25% and 3.5% increase in residential and commercial property values respectively.	SGS (2017) Cost Benefit Analysis: Through-Block Links
1.2 Form and space – creating a human scale design	Enhanced enjoyment of, and comfort in, public space; reduced overshadowing of the public realm.				
1.3 Enhanced safety and security and reduction of crime.	Enhanced safety and security and reduction of crime.	Public	Increased opportunities for surveillance, distinguished public and private territory and presents a 'positive image' that can deter potential offenders (Foster et al. 2011). This reduces law enforcement costs and costs associated with the criminal justice system.	SGS estimated the cost savings of reduced crime as a result of CPTED principles to be \$100 per dwelling, per annum, assuming a 5% reduction in crime. This equated to a discounted benefit of \$1,500 per dwelling, over a 30 year period.	SGS (2016b) Local Liveability Cost Benefit Analysis
1.4 Streetscape Design	More and higher quality street trees provide shade, carbon sequestration, reduced energy costs, reduced health costs and increased property values.	Public	The benefits of street trees include both ecological and aesthetic values. The City of Melbourne's tree valuation tool can be used to measure the latter.	Value per street tree estimated at \$11,000 per annum, per well-maintained, high quality species. This equated to a discounted benefit of \$1,000 per dwelling, over a 30 year period.	SGS (2016b) Local Liveability Cost Benefit Analysis
	Reduce public expenditure on high quality and/or more consistent public domain/streetscapes.	Public	Estimate reduction in maintenance costs of a suitable time frame.	Estimate as a proportion of Council annual budget for public domain maintenance.	
1.5 Public Realm Embellishment	Enhanced enjoyment of the public realm	Private	Private benefits are reflected in higher property prices of properties adjacent to high quality public realm areas.	1% premium on property values for properties with ready access to high quality public domain.	SGS (2016b) Local Liveability Cost Benefit Analysis

ELEMENT	BENEFITS	PUBLIC OR PRIVATE BENEFIT	MEASUREMENT STRATEGIES	TYPICAL VALUES AND CALCULATIONS	SOURCE
		Public	See 1.1 above. Sometimes argued that 'indirect' benefits are likely to be <i>at least</i> equivalent in magnitude to the direct benefits.	Further public benefits of 1%.	SGS (2016b) Local Liveability Cost Benefit Analysis
				Use 'Zanon model' ⁶ for assessing quality of open space. Predicts patronage. Value based on travel cost method (TCM) applied to the increased number of visitors.	SGS (2015) Queen Victoria Market Expert Evidence
Strategy 2: High Quality Visual Appearance					
2.1 Clarity of Architectural Approach	Enhanced visual coherence; stronger sense of place; civic pride.	Private	Private value would be reflected in increased rents or properties values of more coherent places.	(No values readily available for this element.)	
2.2 Architectural Quality		Public	Public value can be inferred from 'willingness to pay studies' for more coherent places.	Drawing on a willingness to pay study of policies related to heritage protection, the public benefits of better apartment design in Victoria was estimated at \$6,000 per dwelling, 1.2% of the dwelling value.	SGS Economics and Planning (2016a) Economic Analysis of the Better Apartments Initiative.
2.3 Contextual Suitability			As above		
Strategy 3: Subtropical Living					
3.1 Building Design for Passive Climatic Response	Reduced greenhouse gas emissions; lower operating costs; more comfortable indoor environments for working/living.	Private	The premium paid for green buildings is an indication of enhanced value of these features and their lower costs.	1.2% to 5.0% price premium on certified green buildings. Other studies have shown that buyers are willing to pay a premium of 9-23% on eco-friendly homes.	Bruegge, Carrion-Flores and Pope, 2016; Kahn and Kok, 2014; SopherSparn Architects (2015) The Market Value of Eco Friendly Properties
3.2 Environmental Performance		Public	The value of resource not used due to more efficient environmental performance.	(No values readily available for this element.)	
3.3 Outdoor Living	Higher quality private and communal open spaces; improved interface	Public and private	The improved utility of dwellings with higher quality open space should be reflected in higher prices for	See Strategy 4 below.	

⁶ Zanon, D. (1998). A Model for Estimating Urban Park Visitation – Parks Victoria Occasional Paper Series.

ELEMENT	BENEFITS	PUBLIC OR PRIVATE BENEFIT	MEASUREMENT STRATEGIES	TYPICAL VALUES AND CALCULATIONS	SOURCE
	between the open space and the public realm.		dwelling with access to good open space (all other things being equal).		
3.4 Integrated Landscape	Reduced stormwater run-off; Improved water quality.	Public	See 3.1 and 3.2 above		
Strategy 4: Manage Amenity					
4.1 Built Form and Layout	Higher dwelling utility for residents.	Private	Private utility benefits reflected in willingness to pay for apartments with better utility.	Using statistical analysis of apartment design and prices, the value of apartments with better orientation, cross ventilation, outdoor open space, and building separation, was estimated at \$25,000 per apartment (a 5% premium on average apartment value).	SGS Economics and Planning (2016a) Economic Analysis of the Better Apartments Initiative.
				Sale price of comparable units within a single development in East Melbourne found a 3.5% premium for dwellings with better access to light and ventilation.	
4.2 Residential Amenity		Public	Higher standard of design is also likely to generate benefits that reflected in the dwelling price, as a result of improved health and productivity of residents of development with a better standard of urban design.	SGS has estimated the health and productivity benefits of better apartment design standards at \$1,600 per dwelling (0.33% of the dwelling value).	SGS Economics and Planning (2016a) Economic Analysis of the Better Apartments Initiative.
4.3 Diverse and Adaptable Buildings	Reduced costs to convert buildings to alternative uses; mixed-use precincts better able to respond to land use changes (e.g. mix of residential, retail and commercial floor space).	Private and public	Estimate conversion costs if buildings had to be converted; and/or Higher travel costs if lack of flexibility in building stock would result in less efficient land use patterns.	(No values readily available for this element.)	
Strategy 5: Responsive Urban Form					
5.1 Relationship with City-wide Context	Design that responds to metropolitan context: location, skyline, broader views and open space network.	Public	Willingness to pay for enhanced urban character and higher quality built environment - see Element 2 above.	(No values readily available for this element.)	

ELEMENT	BENEFITS	PUBLIC OR PRIVATE BENEFIT	MEASUREMENT STRATEGIES	TYPICAL VALUES AND CALCULATIONS	SOURCE
5.2 Relationship with Site and Local Context	Design that responds to the local and site context thereby enhancing the local identity, connectivity and providing appropriate relationships between buildings and local elements.	Public		(No values readily available for this element.)	
5.3 Legibility and Wayfinding	More legible and permeable urban form, with through block links, will increase walkability and active transport.	Public	Estimate reduced travel times, avoided health costs due to more active transport, and reduction in vehicle kilometres travelled (VKT) which includes both direct costs and externalities.	Leisure time is typically valued at \$14 per hour; health benefits (measured as avoided health costs) are estimated at \$2.7 per additional kilometre of walking and \$1.4 per additional kilometre cycled. The combined benefit of reduced VKT and externalities is \$0.52 per kilometre of avoided vehicle travel.	Australian Transport Assessment and Planning Guidelines, 2016

2.6 Estimate of the per dwelling benefits of good urban design

Drawing on the benefits identified in the table above, we can estimate the magnitude of the potential benefits of good urban design, as opposed to 'business as usual' outcomes, on a per dwelling basis. The table below includes benefit categories that align with each of the five principles for better urban design identified in Council's Design and Context Policy.

The classifications of 'private' and 'public' consider whether the benefits would accrue to residents or the broader public.

Using this approach, the total potential benefit of good urban design, per dwelling, is estimated to be \$41,420. Provided the costs of achieving better urban design practice cost is less than \$40,000 per dwelling, which is highly likely, the implementation of better urban design policies would increase community welfare overall as the total benefits would outweigh the total costs.

Dwelling price was used as a basis for estimating the magnitude of many of the benefits listed. For this exercise, the average dwelling price was assumed to be a conservative average of \$400,000.

Estimating the benefits in this way should not be misinterpreted as implying there would be a commensurate change in the market price for dwellings. Realising \$40,000 in benefits through better urban design does not imply that the price of dwellings would increase.

TABLE 2: ESTIMATE OF THE BENEFITS OF GOOD URBAN DESIGN, PER DWELLING

ELEMENT	BENEFITS	PUBLIC OR PRIVATE BENEFIT	TYPICAL VALUES AND CALCULATIONS	ESTIMATED BENEFIT PER DWELLING
1.3 Enhanced safety and security and reduction of crime.	Enhanced safety and security and reduction of crime.	Public	SGS estimated the cost savings of reduce crime as a result of CPTED principles to be \$100 per dwelling, per annum, assuming a 5% reduction in crime. This equated to a discounted benefit of \$1,500 per dwelling, over a 30 year period.	\$1500
1.4 Streetscape Design	More and higher quality street trees provide shade, carbon sequestration, reduced energy costs, reduced health costs and increased property values.	Public	Value per street tree estimated at \$11,000 per annum, per well-maintained, high quality species. This equated to a discounted benefit of \$1,000 per dwelling, over a 30 year period.	\$1000
1.5 Public Realm Embellishment	Enhanced enjoyment of the public realm.	Private	1% premium on property values for properties with ready access to high quality public domain.	\$4000
		Public	Further public benefit of 1% of property value.	\$4000
2.1 Clarity of Architectural Approach and 2.2 Architectural Quality	Enhanced visual coherence; stronger sense of place; civic pride.	Public	The public benefits of better apartment design in Victoria was estimated at 1.2% of the dwelling value.	\$4800 (1.2%)
3.1 Building Design for Passive Climatic Response	Reduced greenhouse gas emissions; lower operating costs; more comfortable indoor environments for working/living.	Public and Private	1.2% to 5.0% price premium on certified green buildings;	\$4800 (1.2%)
4.1 Built Form and Layout and 4.2 Residential Amenity	Higher dwelling utility for residents.	Private	Better orientation, cross ventilation, outdoor open space, and building separation can add a 5% premium on average apartment value.	\$20,000
		Public	SGS has estimated the health and productivity benefits of better apartment design standards at 0.33% of the dwelling value.	\$1320
Total public benefits				\$15,020
Total private benefits				\$26,400
Total benefits				\$41,420

Total benefits of good urban design for the Gold Coast

The per dwelling estimate of the benefits of good urban design can be used to also estimate the total value for good urban design for the Gold Coast based on the projected growth for the next 20 years. This calculation is shown in the table below. Assuming that 40 per cent of the Gold Coast's projected dwelling supply could achieve this level of improvement in urban design quality, as a result of Council's proposed urban design policies, the total benefit to the Gold Coast community would be in the order of \$2.0 billion dollars.

TABLE 3: ESTIMATE OF THE BENEFIT OF GOOD URBAN DESIGN FOR THE GOLD COAST

New dwelling growth 2016 to 2036	130,000
Proportion of new dwellings that achieve higher urban design outcomes	40%
New dwellings that achieve higher urban design outcomes (1)	52,000
Benefit per dwelling (2)	\$41,420
Total benefit (1 x 2)	\$ 2,153,840,000

2.7 Conclusion

The discussion in this chapter highlighted some of the issues and challenges of valuing the benefits of urban design. The following summary points can be made about the valuing of good urban design:

- There is a perception that good urban design is not empirically assessable but a matter of personal tastes and styles.
- It is often argued that the costs imposed by good urban design are too high relative to the benefits (usually without evidence of either costs or benefits).
- Many benefits of good urban, or costs of poor urban design, are 'external' to individual developments; they are costs or benefits borne by the broader community.
- Developers are less likely to consider these externalities when designing their projects as the impacts do not directly affect their projects.
- Because there is no 'market price' for the negative externalities generated by poor design, or for the positive externalities that result from good urban design, assessing these costs and benefits requires more sophisticated valuation techniques.
- The costs of achieving good urban design are likely to be incurred immediately, whereas the benefits accrue over longer periods of time – for the life of the building, suburb or city in question. This suggests any evaluation of the benefits of good urban design should take into account this lasting stream of benefits.

For these reasons, SGS advocates for the use of the cost benefit analysis framework to assess the value of good urban design. The CBA approach considers both direct impacts and externalities; it considers both initial and ongoing costs and benefits, over the longer term; and it employs a range of valuation techniques to impute the values for both positive and negative externalities that do not have a market price.

SGS has recently undertaken cost benefit analysis of urban design-related policies. Both studies found that the policy in question would generate a net community benefit and was therefore justified in terms of efficiency and sound planning practice.

Using the structure of Gold Coast Council's draft Design and Context policy, the benefits of good urban design and techniques for valuing these benefits were described.

Drawing on this work, the potential benefits of good urban design on the Gold Coast have been conservatively estimated at around \$40,000 per dwelling, or \$2 billion dollars in total over the next 20 years.

Provided the per dwelling costs of achieving better urban design practice are less than this amount, the implementation of appropriate urban design policies should increase community welfare overall.

The next chapter explores the scope of the costs and benefits that might result from good urban design, and how these might be measured, for three case study projects.

3. CASE STUDIES

This chapter reviews three individual developments and compares them to other 'better practice' examples. For each case study the potential benefits of better urban design are identified.

3.1 Urban design issues on the Gold Coast

Some specific issues raised by Council in the project inception meeting and during site visit included the following:

- the design quality of public spaces
- the quality of building interfaces with the street, in particular activation and perceptions of safety/security
- consistency in the public realm (e.g. uniformed streetscape treatments and the associated costs of delivery and maintenance of the public realm)
- the benefits of through-block links
- the health impacts of bad design
- the value of street trees, and
- the importance of architectural qualities of building (e.g. contextually appropriate sub-tropical architecture).

The three case studies selected illustrate some of these issues, and highlight the likely benefits of better practice in each case. The three case studies represent a range of development types: low- to mid-rise apartments, high-rise apartments and high-rise mixed-use developments. The specific developments reviewed, and the respective 'better practice' examples are listed in the table below.

TABLE 4: CASE STUDIES

DEVELOPMENT TYPE	CASE STUDY FOR REVIEW	BETTER PRACTICE EXAMPLE
Low to Mid Rise Apartment	Maddison Apartments, Southport	Sphere Apartments, Labrador
High Rise Mixed Use	Meriton Suites, Broadbeach	Oracle, Broadbeach
High Rise Apartment	Synergy, Broadbeach	San Bano, Coolangatta

3.2 Case study 1 – Low to Mid Rise

Base Case - Maddison Apartments, Southport

The Madison on High Apartments in Southport is an example of a low to medium rise apartment development. This recently completed project is located on the edge of the Southport Priority Development Area, at a corner of High Street and Alderley Lane. The completed building is six storeys with parking at the ground level and 5 levels of apartments. The site comprises 882 square metres and is adjacent to a two-storey townhouse development to the northeast and a single storey unit development to the south.

Council staff highlighted the following issues with this development:

- Poor interface with the street at ground level including large area of blank walls
- The building entry is not clearly identifiable and lift lobby not visible from the street
- Narrow setbacks to adjoining development to the north east
- The main building façade to the south (High Street) is not well resolved and does not provide an appropriate response to its context

Some of these issues are illustrated in the photos on the following page.

FIGURE 6: MADISON ON HIGH APARTMENTS, AERIAL PHOTOGRAPH



Source: Nearmap, 2017.

FIGURE 7: MADDISON APARTMENTS



Interface with High Street (looking south)



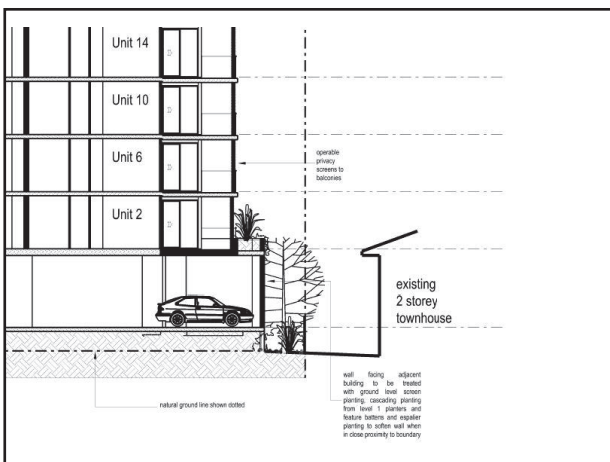
Interface with High Street (looking north)



Car park entry from Alderley Lane



Adjacent development to the north east
(from third floor within the development)



Setback to adjacent development to the north east
(from development plans)



Render of the development
(from development plans)

Better Practice – Sphere Apartments, Labrador

Sphere Apartments is an example of a better practice low and medium scaled residential development. Sphere is a community located in Southport, adjacent to Musgrave Park and within the Gold Coast University Hospital and Griffith Knowledge Precincts. The development includes a mix of contemporary designed homes on 7.5 hectares. The following design elements were identified as better practice for this type of development:

- Building interfaces that provide better engagement with streets/open spaces (allowing opportunities for activation and/or passive surveillance)
- Building entries clearly identifiable from the street
- Building setbacks that do not compromise the development opportunities of adjoining sites
- Separation between buildings allow for the provision of community open spaces and planting
- Design responds to the subtropical environment (e.g. the use of fins and shading devices)
- Good quality landscape design and tree planting that provides shade and privacy.

Examples of these design elements are as shown in Figure 9 on the following page.

FIGURE 8: SPHERE APARTMENTS, LABRADOR, AERIAL PHOTOGRAPH



Source: Nearmap, 2017.

FIGURE 9: SPHERE APARTMENTS, LABRADOR



Building entry clearly visible from the street
(Sphere Apartments, Central Street, Southport)



Balconies, shading structures and appropriate to sub-tropical environment (Sphere apartments)



High quality communal open spaces with permeable surfaces
(Sphere Apartments)



Horizontal articulation serves to break up the building bulk.
Vertical fins providing shading and privacy.



Building setbacks permit planting for high quality public realm and enhance privacy.

3.3 Case study 2 – High Rise Mixed Use

Base Case - Meriton Suites, Broadbeach

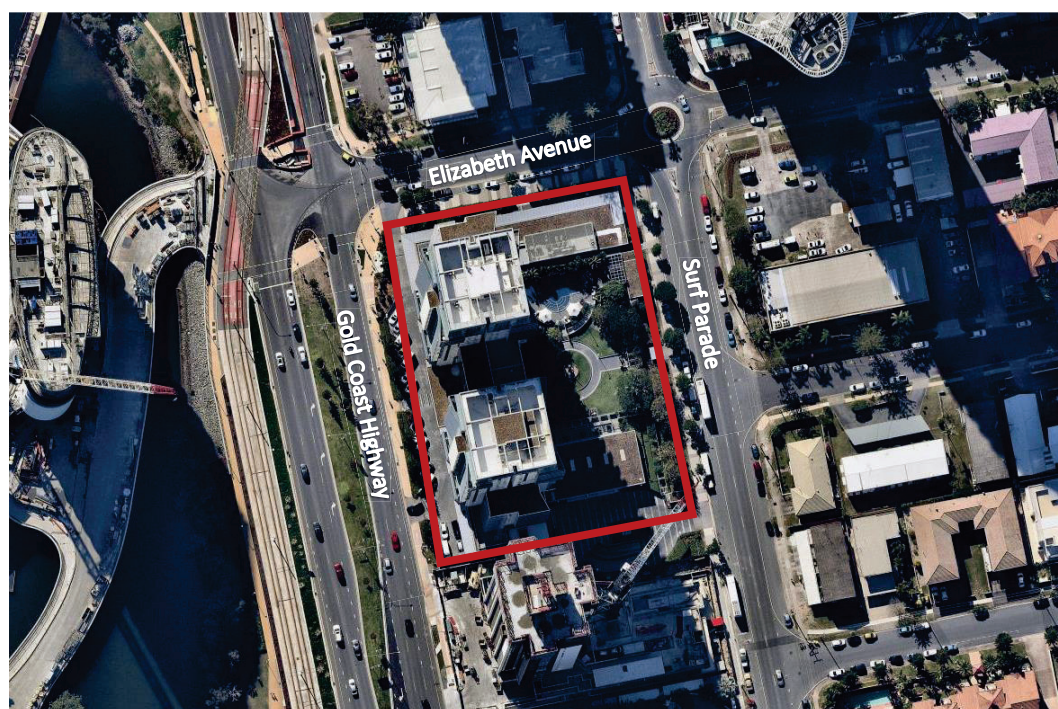
The Meriton Suites Broadbeach is an example of high rise, mixed-use development. The development comprises 395 serviced apartments, 11 retail tenancies and a communal open space. The built form comprises two towers of 25 and 30 storeys with a single storey on Elizabeth Avenue.

Council staff highlighted the following design issues with this development:

- Limited mix of uses on the site
- Quality of the communal space
- Narrow separation between the two towers
- Low scale or no development on 'secondary streets' (Elizabeth Avenue and Surf Parade)
- Poor architectural design quality

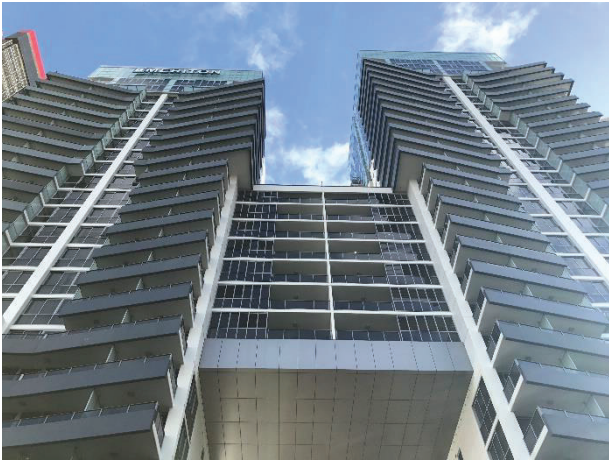
Some of these issues are illustrated in Figure 11 on the following page.

FIGURE 10: MERITON SUITES BROADBEACH, 2669 GOLD COAST HIGHWAY



Source: Near map, 2017.

FIGURE 11: MERITON SUITES, BROADBEACH



Tower forms viewed from the Gold Coast Highway



Lower scale retail element on Elizabeth Avenue



Development viewed from the corner of Elizabeth Avenue and Surf Parade (looking south west)



Development viewed from Elizabeth Avenue (looking west)



Communal open space within the development



Access to communal open space from Surf Parade

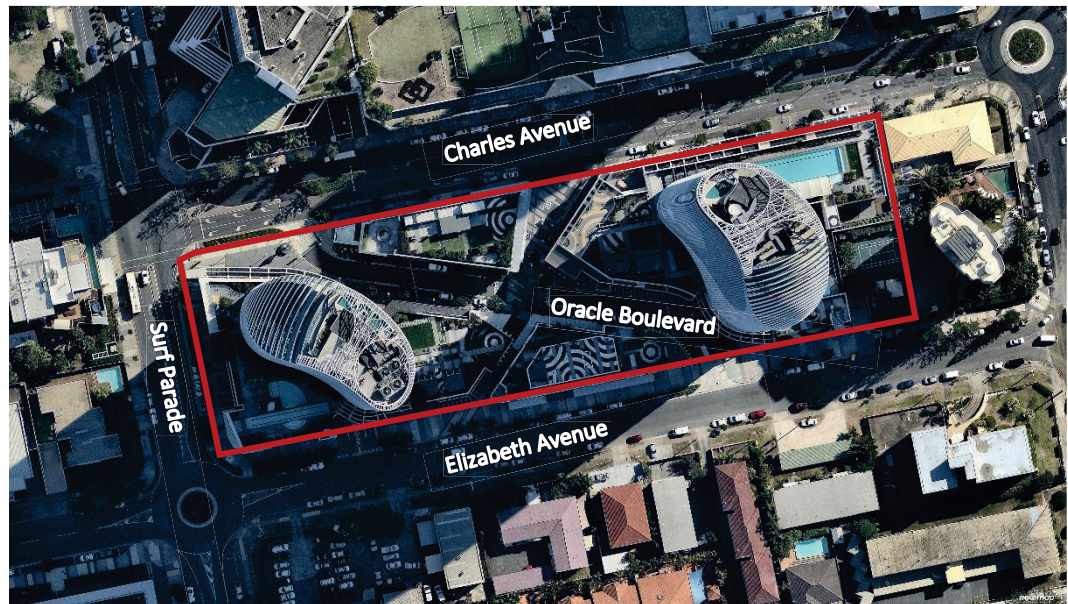
Better Practice – Oracle, Broadbeach

The Oracle development at Broadbeach is a better practice example of a high rise, mixed-use development. The following design elements were identified as representing better practice:

- Greater variety of built form
- Clearly defined podium elements adjacent to streets
- Towers set back from streets
- Adequate separation between of towers
- Activate frontages to streets and public spaces (providing opportunities for activation and/or passive surveillance)
- Public streets or through block links to provide movement through larger sites
- Building designs that are provide visual interest
- High quality public domain.

Some of these elements are illustrated in Figure 13 on the following page.

FIGURE 12: ORACLE DEVELOPMENT, ORACLE BOULEVARD, BROADBEACH



Source: Near map, 2017.

FIGURE 13: ORACLE DEVELOPMENT, BROADBEACH



Three story podium provides enclosure to the public domain (Oracle development, Broadbeach)



Podium provides transition to higher scale built form elements (Oracle development, Broadbeach)



High quality public realm with public art and active frontages (Oracle development, Broadbeach)



New street provides through block link and additional retail frontage (Oracle development, Broadbeach)

3.4 Case study 3 – High Rise apartment

Base Case - Synergy, Broadbeach

The Synergy development at Broadbeach is an example of high rise apartment development. It comprises 137 two and three-bedroom apartment and a small office component of 500 sqm. The development is a single 25 storey towers.

Council staff highlighted the following design issues with this development:

- Plain and repetitive architectural design, particularly for a very prominent location
- High site coverage and little deep soil planting
- Limited activation of the ground plain adjacent the development
- Apartment designs and façades do not respond to differences in orientation.

Some of these issues are illustrated in the photos on the following page.

FIGURE 14: SYNERGY, BROADBEACH, 2729 GOLD COAST HIGHWAY



Source: Near map, 2017.

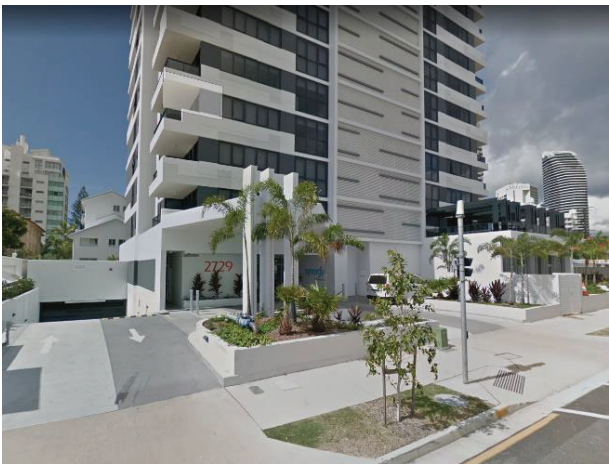
FIGURE 15: SYNERGY, BROADBEACH



Tower as viewed from the Gold Coast Highway. Repetition of façade design on all level results in visually uninteresting building.



Ground level plan shows limited transparency between the building's lobby and the street.



Area adjacent the Gold Coast Highway dominated by areas for parking and vehicle circulation. Location of substation and fire egress contribute to limited activation on ground plane activation on the street-facing side of the development.



The facade design is repetitive on all four sides of the building facades.

Better Practice – San Bano, Coolangatta

The San Bano development at Coolangatta demonstrates many elements of better practice for high-rise apartment developments.

The development includes the following elements that represent better practice:

- A combination of podium and tower elements providing a more human scale at ground level and transitional element between the street and tower above
- Activate frontages to streets and public spaces (providing opportunities for activation and/or passive surveillance)
- Although large in scale, at over 25 storeys, and with similar floorplate throughout, the building design provides visual interest through use of curved and straight elements and asymmetry and different facades treatments
- High quality public domain.

Some of these elements are illustrated in the photos at Figure 13.

FIGURE 16: SAN BANO, 60 MARINE PARADE, COOLANGATTA

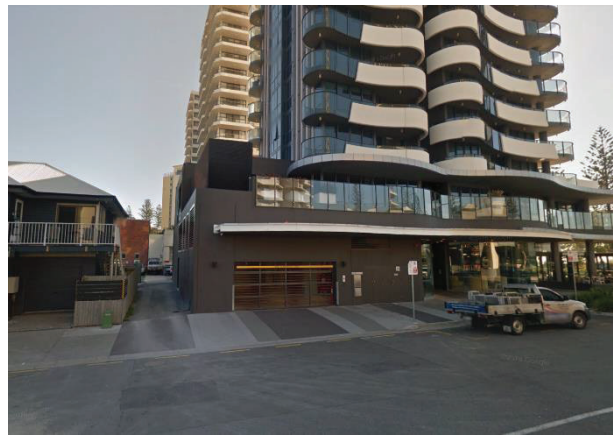


Source: Near map, 2017.

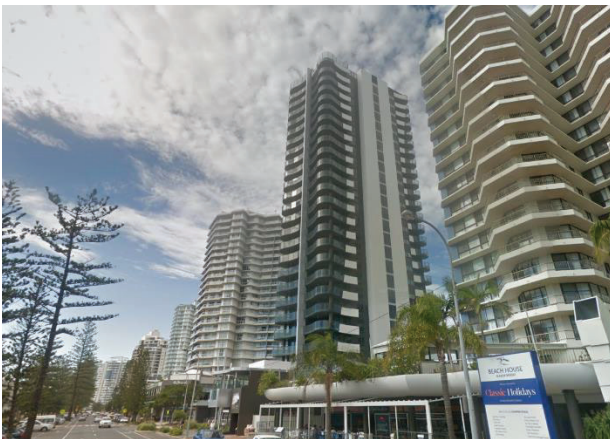
FIGURE 17: SAN BANO DEVELOPMENT, COOLANGATTA



The development features a two-storey podium element that provides a transitional building scale and a more enclosed streetscape.



Areas of street frontage dedicated to parking and building services have been minimised.



The design of the building combines repetition, colour and asymmetry to good effect, in contrast to the older apartment towers which are bland by comparison.



This floor plan of a typical building level shows that each façade is different in response to internal functional requirements and external conditions (views and orientation)

3.5 Qualitative assessment

This section provides a qualitative assessment of the case study developments by comparing them to the better practice examples.

Maddison Apartments

A brief qualitative assessment of the Maddison Apartments is provided in the table below.

TABLE 5: MADDISON APARTMENTS – QUALITATIVE REVIEW

PRINCIPLE	DESIGN ELEMENT	ASSESSMENT
Principle 1: Engage the Ground Plane	<ul style="list-style-type: none"> 1.1 Improve experience of ground plane for residents, workers and the public. Public 1.2 Enhanced enjoyment of, and comfort in, public space; reduced overshadowing of the public realm 1.3 Enhanced safety and security and reduction of crime Public 1.4 Streetscape Design 1.5 Public Realm Embellishment 	<ul style="list-style-type: none"> The interface with the public domain is poor, providing limited opportunities for activation and a building entry that is not clear from the street. The public domain quality immediately adjacent to the development could have been improved. No windows or balcony openings to provide casual surveillance of the street. The poor quality of the public domain interface might contribute to a reduction in the attractiveness of the street as a place to walk.
Principle 2: High Quality Visual Appearance	<ul style="list-style-type: none"> 2.1 Clarity of Architectural Approach 2.2 Architectural Quality 2.3 Contextual Suitability 	<ul style="list-style-type: none"> Council officers' assessment suggest that the architectural design quality does not meet the desired standard.
Principle 3: Subtropical Living	<ul style="list-style-type: none"> 3.1 Building Design for Passive Climatic Response 3.2 Environmental Performance 3.3 Outdoor Living 3.4 Integrated Landscape 	<ul style="list-style-type: none"> Not enough information to assess (3.1 and 3.2) All apartments have balconies.
Principle 4: Manage Amenity	<ul style="list-style-type: none"> 4.1 Built Form and Layout 4.2 Residential Amenity 4.3 Diverse and Adaptable Buildings 	<ul style="list-style-type: none"> The amenity of the apartments appears to be good with northeast orientation, cross-ventilation and views to Southport. This amenity could be comprised if the adjoining site was developed to a similar scale.
Principle 5: Responsive Urban Form	<ul style="list-style-type: none"> 5.1 Relationship with City-wide Context 5.2 Relationship with Site and Local Context 5.3 Legibility and Wayfinding 	<ul style="list-style-type: none"> Given this is a context that is in transition it is difficult to objectively assess how appropriate the design is. However, as the first significant development in this local area, it will set a precedent for the form and quality of subsequent developments. The scale and arrangement of the development on the site could compromise the development potential of adjoining sites that may be developed in future.

Source: SGS Economics and Planning Pty Ltd, 2017.

Meriton Suites

A brief qualitative assessment of the Meriton Suites is provided in the table below.

TABLE 6: MERITON SUITES – QUALITATIVE REVIEW

PRINCIPLE	DESIGN ELEMENT	ASSESSMENT
Principle 1: Engage the Ground Plane	<ul style="list-style-type: none"> 1.1 Improve experience of ground plane for residents, workers and the public. Public 1.2 Enhanced enjoyment of, and comfort in, public space; reduced overshadowing of the public realm 1.3 Enhanced safety and security and reduction of crime Public 1.4 Streetscape Design 1.5 Public Realm Embellishment 	<ul style="list-style-type: none"> The interface with the public domain provides limited opportunities for activation. The lack of a podium or 'transitional' building form makes the towers dominant from the streets immediately surrounding the development. No public space was provided, although the inclusion of a public link through the site might have been considered.
Principle 2: High Quality Visual Appearance	<ul style="list-style-type: none"> 2.1 Clarity of Architectural Approach 2.2 Architectural Quality 2.3 Contextual Suitability 	<ul style="list-style-type: none"> Council officers' assessment suggest that the architectural design quality does not meet the desired standard.
Principle 3: Subtropical Living	<ul style="list-style-type: none"> 3.1 Building Design for Passive Climatic Response 3.2 Environmental Performance 3.3 Outdoor Living 3.4 Integrated Landscape 	<ul style="list-style-type: none"> Development includes landscaped communal area for occupants.
Principle 4: Manage Amenity	<ul style="list-style-type: none"> 4.1 Built Form and Layout 4.2 Residential Amenity 4.3 Diverse and Adaptable Buildings 	<ul style="list-style-type: none"> Not enough information to assess
Principle 5: Responsive Urban Form	<ul style="list-style-type: none"> 5.1 Relationship with City-wide Context 5.2 Relationship with Site and Local Context 5.3 Legibility and Wayfinding 	<ul style="list-style-type: none"> Council officers' assessment suggest that the development does not respond well to the context. The design lacks a podium, is uninspiring and does not respond to its context. The development includes a relatively small amount of non-residential floor space and given the location, additional retail and/or commercial floor space have been included, particularly on the Elizabeth Avenue and Surf Parade street frontages. A through-site link is provided for guests but not a public link. Given the size of this site and potential for pedestrian movements between the apartments and the retail areas to the north a public through-site link might have been justified. Lack of a through site link might be detracting from the walkability of the precinct.

Source: SGS Economics and Planning Pty Ltd, 2017.

Synergy

A brief qualitative assessment of the Synergy development is provided in the table below.

TABLE 7: SYNERGY – QUALITATIVE REVIEW

PRINCIPLE	DESIGN ELEMENT	ASSESSMENT
Principle 1: Engage the Ground Plane	<ul style="list-style-type: none"> 1.1 Improve experience of ground plane for residents, workers and the public. Public 1.2 Enhanced enjoyment of, and comfort in, public space; reduced overshadowing of the public realm 1.3 Enhanced safety and security and reduction of crime Public 1.4 Streetscape Design 1.5 Public Realm Embellishment 	<ul style="list-style-type: none"> The interface with the public domain provides limited opportunities for activation. Design lacks a podium or 'transitional' building form to provide a more comfortable pedestrian environment. Building lobby located within the site away from the street reducing opportunities for passive surveillance.
Principle 2: High Quality Visual Appearance	<ul style="list-style-type: none"> 2.1 Clarity of Architectural Approach 2.2 Architectural Quality 2.3 Contextual Suitability 	<ul style="list-style-type: none"> Difficult to glean a specific architectural approach in this design. Compared to other recent development the quality of the architecture is below average. This is a prominent location that would benefit from a more consider response to this context.
Principle 3: Subtropical Living	<ul style="list-style-type: none"> 3.1 Building Design for Passive Climatic Response 3.2 Environmental Performance 3.3 Outdoor Living 3.4 Integrated Landscape 	<ul style="list-style-type: none"> Little evidence that the design of the apartments and of the building facades (e.g. shading, glazing) has taken orientation and climatic conditions into consideration. Building achieves a 4-star Green Star rating.
Principle 4: Manage Amenity	<ul style="list-style-type: none"> 4.1 Built Form and Layout 4.2 Residential Amenity 4.3 Diverse and Adaptable Buildings 	<ul style="list-style-type: none"> Building is set back from all site boundaries but due to its scale it will overshadow adjoining land to the immediate south and east. Limited dwelling mix (entirely 2 and 3 bed room dwellings with few permutations of each).
Principle 5: Responsive Urban Form	<ul style="list-style-type: none"> 5.1 Relationship with City-wide Context 5.2 Relationship with Site and Local Context 5.3 Legibility and Wayfinding 	<ul style="list-style-type: none"> Consistent with preferred locations for towers The development includes floor space for community uses that was (presumably) dedicated to Council.

Source: SGS Economics and Planning Pty Ltd, 2017.

3.6 Quantitative assessment

This section applies the cost benefit analysis approach as described in Section 1.7 to the Maddison Apartments case study to provide a quantitative assessment of this development. This example values both the estimated costs and benefits using high level assumptions. To undertake this assessment requires imagining a hypothetical version of the Maddison development that is a 'better urban design' alternative version of the Maddison development.

The Maddison apartments 'as built' forms the base case in the assessment and the better urban design alternative is the project case. The marginal cost and benefits of the better urban design alternative outcomes are estimated by comparing the base case to the project case.

The quantitative assessment has only been applied to one case study from the three, but the same approach could be applied to the other case studies to determine the benefit cost ratio of the better urban design alternative.

Base case and better urban design alternative

The urban design quality of the Maddison Apartments could have been improved by addressing two issues: the interface with the public realm; and the quality of the architectural response. These changes might result in additional costs, but would also generate benefits. The key features of the better urban design alternate (Alternative) and existing development ('the base case') are described in Table 8 below.

Table 9 articulates the marginal differences between the base case and the alternatives. This is referred to as the 'impacts matrix'. Each 'impact' is measured to determine the relative costs and benefits of the better urban design alternative compared to the base case.

TABLE 8: MADDISON APARTMENTS - BASE CASE AND ALTERNATIVE

	Base case	Alternative: Similar development to the base case but with better streetscape interface and more contextual architecture
Total floor space	18 apartments	As base case
Parking	30 spaces with stackers	As base case
Setbacks	3 metres to the east and south; 6 metres to the north	As base case
Communal open space	6 th floor roof top terrace	As per base case
Building entries and streetscape interfaces	Limited activation	Better quality interface, including planting
Architecture quality	Average	Better

TABLE 9: MADDISON APARTMENTS - IMPACTS MATRIX

	Alternative: Active frontages and more contextual architecture
Construction costs	Negligible
Professional fees	Higher
Apartment supply (development site)	No change
Apartment supply (adjoining site)	No change
Communal open space	No change
Safety/security	Better quality interface, including planting
Trees/planting	More planting
Architecture quality	Better

Cost and benefits

The likely marginal costs and benefits of the alternative development, compared to the Base Case are likely to include:

- Cost 1: Higher construction costs associated with the changes to the design of the streetscape interface, architecture of the building and additional planting
- Cost 2: Higher professional fees, assuming these are required to achieve the better design outcomes
- Benefit 1: Improved public amenity as a result of the better streetscape interface

- Benefit 2: Enhanced visual coherence and stronger sense of place due to better architecture, and
- Benefit 3: Enhanced safety and security.

Assumptions

To generate dollar values for the costs and benefits the following assumptions were used:

- The better urban design alternative would require a 3% increase in construction costs relative to the base case
- A 2% increase in professional fees
- Improvements in public amenity estimated at 2% of dwelling price, assumed to be \$400,000
- A reduction in crime of 5%.
- Benefit of better architecture estimated at 1.2% of dwelling price, and

Results

Using these assumptions, the costs and benefits were estimated for a 30 years period and discounted to a net present value using a discount rate of 7 per cent. The full details of the costs and benefits are listed in Appendix B.

The total costs were estimated at \$154,000 and the total benefits at \$275,000. Two key metrics in cost benefit analysis are the net present value (NPV) which is the total benefits minus the total costs, and the benefit cost ratio (BCR) which is the total benefits divided by the total costs.

In this case, the BCR is estimated at 1.79. If the BCR is 1 or more, the benefits outweigh the costs. The Net Present Value (NPV) is a measure of the size of the net benefits. In the case the NPV is \$121,000.

These findings suggest that the higher costs to achieve better urban design outcomes would be justified as the size of the resulting benefits is larger.

In this example, the costs would fall on the developer and land owner, whereas the benefits are, for the most part, public benefits where the broader community are the beneficiaries.

TABLE 10: MADDISON APARTMENTS CBA RESULTS

Costs and benefits	Project Case 1
Costs	
Construction costs	\$ 108,000
Professional fees	\$ 46,000
Total costs	\$ 154,000
Benefits	
Improved public amenity	\$ 144,000
Improved safety and security	\$ 45,000
Enhanced visual coherence and sense of place	\$ 86,000
Total benefits	\$ 275,000
Net Present Value with 7% discount rate	\$ 121,000
Benefit Cost Ratio	1.79

4. CONCLUSION

4.1 Review

This report is concerned with the question: **how can we measure the value good urban design?** Articulating the benefits of good urban design, and compared these to any additional costs, will help Council in its efforts to develop and implement urban design policies, and to argue for changes to specific development proposals, to support better urban design outcomes.

Many key issues and concerns regarding urban design relate to the interfaces between buildings and the public realm, and the design of the public realm itself. A poorly designed development can have negative impacts on the quality of public realm, whereas new development that includes elements of good urban design, will have a positive impact. The types of impacts are referred to by economists as externalities: costs or benefits that are borne by the broader community. Negative externalities occur because these costs are imposed on parties not directly involved in the transaction.

The literature on the value of urban design cites many benefits and frequently suggests that the costs of achieving a higher standard of urban design are relatively minor. However, there is also a reluctance in this literature to accept that dollar values can be placed on these benefits. The reasons for this reluctance include the perceived difficulty of measuring these benefits and an understanding that the benefits of urban design are not fully reflected in market prices (e.g. see Horne et al, 2014; Chiaradia et al, 2017).

4.2 Assessing the value of urban design via cost benefit analysis

SGS agree that market prices alone are insufficient to measure of the benefits of good urban design. However, we have argued that a more comprehensive approach, cost benefit analysis, can be used to value the benefits of good urban design, and compare costs and benefits, over the longer term.

In Section 2.4, three case studies were presented of urban design policies that have been assessed using a CBA approach. In Section 3.6, the CBA framework was applied to a specific development on the Gold Coast, comparing the costs of achieving better urban design outcomes on the case study site, to the anticipated benefits from these design changes. In all three cases the better urban design alternative was found to provide a net community benefit, that is, the benefits that accrued to all beneficiaries outweighed any increase in costs.

The main advantages of using CBA approach to assess the value of urban design are:

- It requires a clear definition of the 'base case' (the existing design or 'business as usual' policy) and an alternative better urban design outcome (a modified design or new policy).
- It requires all costs and benefits to be identified, measured and, where possible, monetised.
- This includes costs and benefits that are not typically reflected in the market prices. For these unpriced costs and benefits, a range of techniques are used to impute their value.
- It considers the continued flow of costs and/or benefits over a longer period of time, typically between 10 and 30 years, depending on the type of project or policy that is being assessed.

Some key benefits of better urban design that do not have a market price but can be measured using a CBA approach include:

- Health benefits from designs that encourage more activity transit (walking and cycling)
- Improved safety and security and reduced crime

- Reduced vehicle operating costs and externalities as a result of reduced vehicle use
- The value of more and/or higher quality open spaces
- The benefits of more resource efficient precincts and buildings.

At the present time it is more difficult for CBAs to estimate the benefit of the architectural qualities of buildings, as there is limited empirical data available on this particular topic.

4.3 Application of the cost benefit analysis to urban design

A cost benefit analysis approach can be applied to valuing urban design in a number of ways.

Valuing the total value of good urban design for the Gold Coast community

Using higher level assumptions, we have estimated the magnitude of the potential benefits of good urban design for the Gold Coast as being in the order of \$40,000 per dwelling or a total of over \$2 billion dollars (undiscounted) in the next 20 years if these benefits are achieved for 40 per cent of the future dwellings.

These figures do not include the full suite of benefits of good urban design identified in this report. It is likely the total benefits would be a higher figure than if additional benefits were included, such as, the benefits of improved ground plane activation, improved health outcomes, improve legibility and wayfinding, and benefits experienced by businesses and employees.

Although the costs of achieving good urban design have not been quantified, on the basis of this evidence there is already a compelling economic case for City of Gold Coast to pursue a 'good urban design' agenda, through its planning policies and planning assessment decisions.

Economic evaluation of specific plans and policies

Section 2.4 of this report documented several case studies where the cost benefit analysis framework has been applied to specific urban design strategies and policies. In these instances, the specific outcomes of the policies were modelled (e.g. impacts on construction costs, development yields, transport behaviours, public realm improvements, amenity improvements, etc.) and both the costs and benefits of the proposed initiatives could be measured and compared.

The City of Gold Coast could apply this approach to specific plans or policies to provide further support for urban design policies. For example, a specific plan for a precinct that is intended to improve urban design outcomes could be tested against the likely business-as-usual. Similarly, CBA could be used to test the efficacy of policies designed at influencing the development application and assessment process, such as, the introduction of design review processes similar to those used in other states.

Applied to proposed policy initiatives, CBA would provide policy makers with an account of the magnitude of the specific costs and benefits. Where a favourable benefit cost ratio can be demonstrated, CBA will provide a sound economic justification for pursuing such policies.

Economic evaluation of specific developments

Finally, as this report has explored in chapter 3, there is the potential to apply the CBA approach to measure the value of good urban design for individual developments. This could be done using the various metrics identified in Table 1 or, as was done in chapter 3, on a 'first principles' basis as either a qualitative or quantitative exercise. A specific spreadsheet-based or web-based tool could be developed for this purpose, combined with training in its use and the 'fundamentals' of the cost benefit analysis approach.

REFERENCES

- Australian Government et al. (2015). *Creating Places for People: An Urban Design Protocol for Australian Cities*. Undertaken in collaboration with a number of Australian agencies and organisations.
- AustRoads (2006). *Guide to Project Evaluation – Part 4: Project Evaluation Data*. Austroads Publications Online.
- Banfi, S., Farsi, M., Filippini, M., and Jakob, M. (2008). Willingness to pay for energy-saving measures in residential buildings. *Energy Economics*, 30, 503-516.
- Bole, S., and Reed, R. (2009). The Value of Design: A Discussion Paper. *Architectural Science Review*, 52(3), 169-175.
- Bruegge, C., Carrion-Flores, C., and Pope, J. C. (2016). Does the housing market value energy efficient homes? Evidence from the energy star program. *Regional Science and Urban Economics*, 57, 63-76.
- Chiaradia, A. J. F., Sieh, L., and Plimmer, F. (2017). Values in urban design: A design studio teaching approach. *Design Studies*, 49, 66-100.
- CABE (2001). *The Value of Urban Design*. Report undertaken by the Bartlett School of Planning.
- CABE (2006). *The Cost of Bad Design*. Report by John Sorrell, Richard Simmons, Jake Desyllas and Robin Nicholson.
- CIC (2017). Design Quality Indicator. Available at <http://www.dqi.org.uk/>.
- Foster, S., Giles-Corti, B., and Knuimann, M. (2011). Creating safe walkable streetscapes: does house design and upkeep discourage incivilities in suburban neighbourhoods? *Journal of Environmental Psychology*, 31(1), 79-88.
- Gann, D. M., Salter, A. J., and Whyte, J. K. (2003). Design Quality Indicator as a tool for thinking. *Building Research & Information*, 31(5), 318-333.
- HM Treasury (United Kingdom). (2011). *The Green Book: Appraisal and Evaluation in Central Government*.
- Horne, R., London, G., Moore, T., Martel, A. and Alves, T. (2014). *Placing a value on good design for cities: evidence and prospects*. Paper presented at the 7th Making Cities Liveable Conference, Kingscliffe, NSW, 10-11 July 2014.
- Jeffrey, D., and Reynolds, G. (1999). Planners, architects, the public, and aesthetics factor analysis of preferences for infill developments. *Journal of Architectural & Planning Research*, 16(4), 271-288.
- Kahn, M. E., and Kok, N. (2014). The capitalization of green labels in the California housing market. *Regional Science and Urban Economics*, 47, 25-34.
- Ministry for the Environment (New Zealand). (2005). *The value of urban design: the economic, environmental and social benefits of urban design*. Available at <https://www.mfe.govt.nz/publications/urban/value-urban-design-full-report-jun05/index.html>.
- SGS (2015) Queen Victoria Market Expert Evidence
- SGS Economics and Planning (2016a). *Economic Analysis of the Better Apartments Initiative*. Final report for DELWP and OVGA.

SGS Economics and Planning (2016b). *Local Liveability Cost Benefit Analysis*. Report for the City of Melbourne.

SGS Economics and Planning (2017) *Cost Benefit Analysis: Through-Block Links* Report prepared for the City of Melbourne, May 2017.

SopherSparn Architects (2015) The Market Value of Eco Friendly Properties
<http://www.sophersparn.com/the-market-value-of-eco-friendly-properties/>

Space Syntax (2011). *The Crime and Urban Design Database: Second Report – Advance Final Draft*. Report prepared for the City of Gosnells, Perth.

Transport for New South Wales (TfNSW) (2016). *Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives: Transport Economic Appraisal Guidelines*, 245.

Wargocki, P. et al. (2002). Ventilation and health in non-industrial indoor environments: report from a European Multidisciplinary Scientific Consensus Meeting (EUROVEN). *Indoor Air*, 12, 113-128.

APPENDIX A: PROPOSED GOLD COAST CITY PLAN POLICY – DESIGN AND CONTEXT

Attachment C (Confidential)

Proposed new City Plan policy – Design and context

Note: Finalised drafting will be provided to the City Planning Committee for consideration and endorsement prior to State interest review.

SC6.X City Plan policy – Design and context

SC6.X.1 Policy purpose

The purpose of this City Plan policy is to provide guidance on what constitutes excellence and innovation in urban and architectural design through six key design principles, and to provide guidelines for demonstrating the application of the key design principles to development. This policy assists to deliver outcomes appropriate to the site and its context while ensuring that development provides high quality urban environments which support a high level of amenity.

SC6.X.2 Application

This City Plan policy applies to development over 16 metres in height that:

- (a) exceeds the density identified on the **Residential density overlay map**, or the height identified on the **Building height overlay map**, in the following zones:
 - a. Medium density residential zone;
 - b. High density residential zone;
 - c. Centre zone;
 - d. Neighbourhood centre zone;
 - e. Innovation zone; or
 - f. Mixed use zone.
- or
- (b) is located in the 'Light rail urban renewal area' as identified on the **Light rail urban renewal area overlay map**.

This City Plan policy may also be utilised at an applicant's discretion for any development within the Gold Coast, to assist in demonstrating a high quality architectural and urban design outcome having regard to the applicable provisions of the City Plan codes and the decision rules in the Act.

This City Plan policy has two parts:

- (a) Part 1 identifies key design principles that are to be applied to a development to assist to create a high quality architectural and urban design outcome.
- (b) Part 2 provides guidance on the required content of a Design and Context Report which is used to demonstrate the application of the key design principles in Part 1.

SC6.X.3 Part 1 – Key design principles

SC6.X.3.1 Introduction

The following key design principles provide criteria to facilitate high quality urban design and architectural outcomes for development across the Gold Coast.

Development is expected to occur in a range of different urban contexts. Accordingly, the key design principles in this City Plan policy identify desirable broad scale design outcomes, with the contextual (site specific) application to be determined by the applicant pursuant to Part 2 of this policy.

The key design principles are:

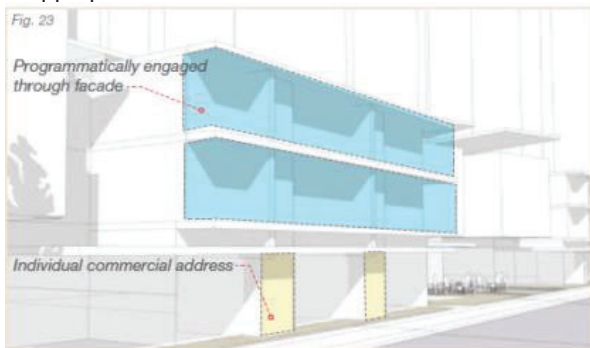
- (a) Key design principle 1: Engage the ground plane
- (b) Key design principle 2: High quality visual appearance
- (c) Key design principle 3: Subtropical living
- (d) Key design principle 4: Manage amenity
- (e) Key design principle 5: Responsive urban form
- (f) Key design principle 6: Future use

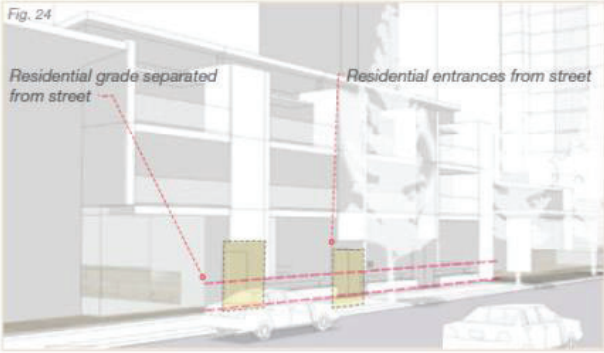



There is overlap between the key design principles and their sub-principles, which is intended and appropriate to enable the delivery of contextually suitable, integrated, high quality design outcomes.

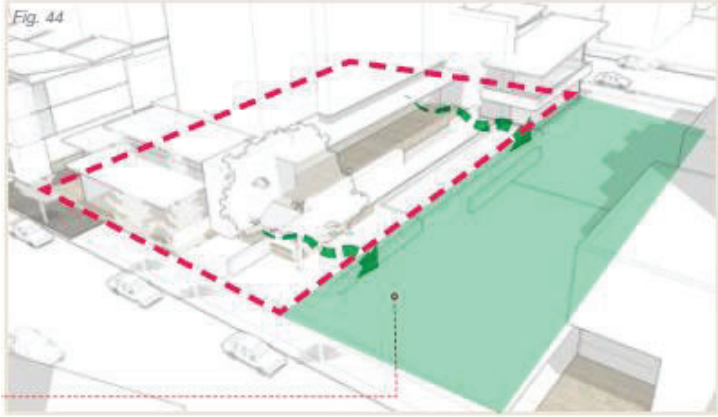
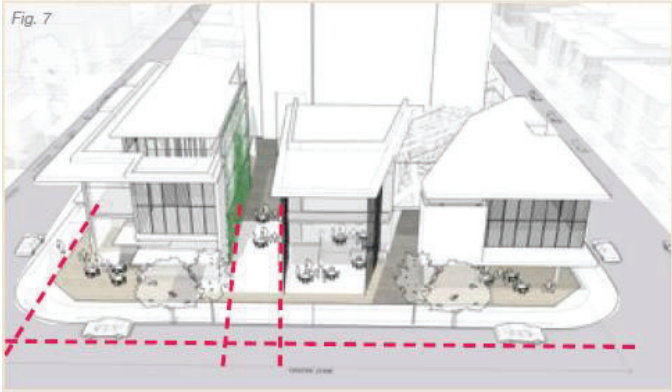
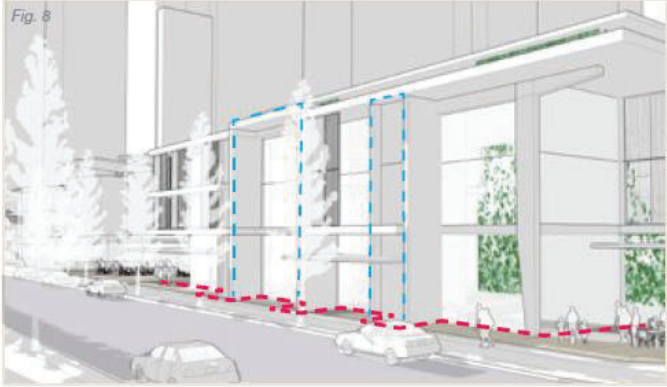
SC6.X.3.2 Key design principle 1: Engage the ground plane

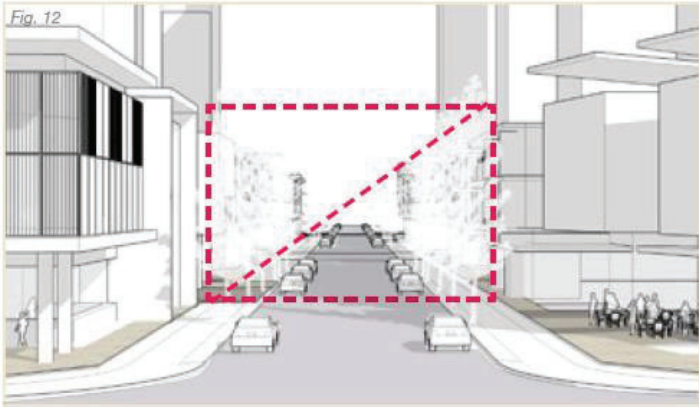
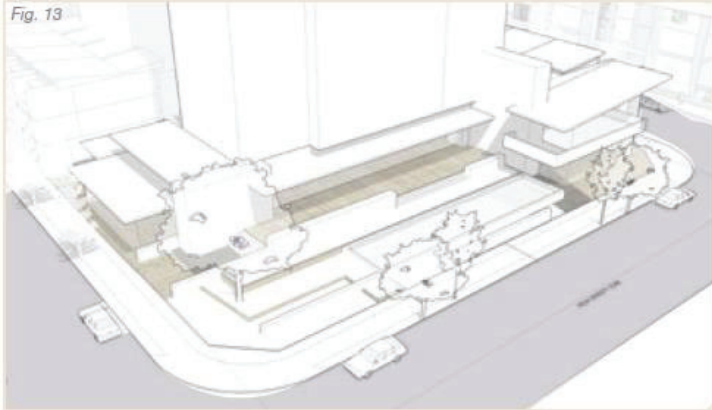


Development creates a ground plane and 'urban ground' that is attractive, active and pedestrian friendly.

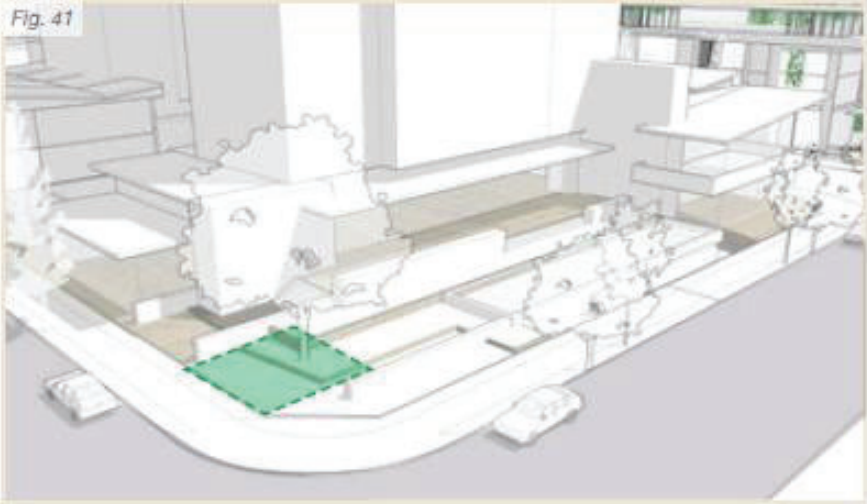

Note: 'Urban ground' refers to the way in which development meets the ground and frames the city's streets and public places.

Sub-principle	Requirement
Active and engaged – a positive interface between public and private realms	<p>Development creates a positive interface between private and public spaces by:</p> <ul style="list-style-type: none"> • addressing, activating and connecting to public areas in a way that respects and enhances the established and anticipated local context; • integrating business activities with the streetscape in centres and business areas, to maximise street life, safety and pedestrian activity (i.e. through the provision of non-residential land uses and a high proportion of each frontage provided with glazing and pedestrian entrances to the street); • integrating residential activities with the streetscape in residential areas, to maximise street life, safety and pedestrian activity (i.e. by providing residential lobbies, residential uses (including terraces and balconies), and/or communal recreation spaces to the street, either in a built form or landscape setting); • providing a sense of openness, engagement and interaction through overlooking of public spaces from private spaces (i.e. through careful placement of windows, openings, entry ways, loggia, verandahs, terraces and balconies); and • preserving the ground level for use by people, where car parking and servicing is located underground, or is otherwise not visible from the street and adjoining sites (i.e. through suitable sleeving or screening, locating servicing areas away from street entries with visual screens or automated enclosures). <p>Development reinforces a sense of place by:</p> <ul style="list-style-type: none"> • providing similar land uses and built form outcomes within streets, minimising land use and built form conflicts; • strengthening corners as public spaces free from obstruction; • using colours, lighting and materials that contribute to the sense of vibrancy at the ground level while being responsive to culture and character; • extending public spaces into the built form to provide interest and encourage engagement (i.e. through courtyards, colonnades, laneways, urban rooms, stairways, stepping terraces, loggia and undercroft spaces); and • considering views, movement and physical connection to adjacent public open space, where appropriate.  <p>Figure SC6.X.3-#</p>

Sub-principle	Requirement
	<div data-bbox="619 226 1225 577"> <p>Fig. 24</p>  <p>Residential grade separated from street</p> <p>Residential entrances from street</p> </div> <p data-bbox="826 577 1018 611">Figure SC6.X.3-#</p> <div data-bbox="571 611 1273 1014"> <p>Fig. 25</p>  <p>Streets with like uses and built form responses improves street legibility.</p> </div> <p data-bbox="826 1048 1018 1081">Figure SC6.X.3-#</p> <div data-bbox="571 1081 1273 1485"> <p>Fig. 26</p>  <p>Express and strengthen corners.</p> </div> <p data-bbox="826 1518 1018 1552">Figure SC6.X.3-#</p> <div data-bbox="571 1552 1273 1955"> <p>Fig. 16</p>  <p>Public realm extends into development.</p> </div> <p data-bbox="826 1977 1018 2011">Figure SC6.X.3-#</p>

Sub-principle	Requirement
Form and space – creating a human scale design	 <p style="text-align: center;">Figure SC6.X.3-#</p>
	<p>Development achieves a human scale at the interface between buildings and the street by ensuring lower levels:</p> <ul style="list-style-type: none"> • frame streets and public spaces, and contribute to a well-defined, active and lively public interface; • are of a scale that is responsive to the established and anticipated local context, including any adjacent or nearby buildings; • create an appropriate degree of street enclosure, to define the edges of public space, preserve access to the sky and sun and maintain a sense of openness, dependent on the local context (the degree of enclosure should communicate clear messages about the local context to people moving through it, where dense, highly enclosed streets convey a more intensive context, for example in a centre, and more open streets convey a more residential context); • incorporate modulation and variation to the built form with recesses, projections, openings, balconies, verandahs, landscaping, and other suitable design techniques; • respond to the established rhythm created by traditional lot widths and established development; and • preserve space for modulation of form, openings, setbacks, courtyards and other ground level spaces.  <p style="text-align: center;">Figure SC6.X.3-#</p>
	 <p style="text-align: center;">Figure SC6.X.3-#</p>

Sub-principle	Requirement
	<p data-bbox="826 226 1021 253">Figure SC6.X.3-#</p>  <p data-bbox="571 264 630 286">Fig. 12</p> <p data-bbox="826 667 1021 694">Figure SC6.X.3-#</p>  <p data-bbox="571 705 630 728">Fig. 13</p> <p data-bbox="826 1111 1021 1137">Figure SC6.X.3-#</p>  <p data-bbox="571 1149 630 1171">Fig. 14</p> <p data-bbox="826 1554 1021 1581">Figure SC6.X.3-#</p>  <p data-bbox="571 1592 630 1615">Fig. 35</p> <p data-bbox="826 1998 1021 2024">Figure SC6.X.3-#</p>
Safety and	Development ensures safety and security within the development and the adjoining public spaces. Safety and security is achieved through:

Sub-principle	Requirement
security	<ul style="list-style-type: none"> • passive surveillance between public and private spaces within the development; • clearly defined access points, with entrances directly from the street; • well-lit and visible access points, communal areas, and interfaces between public and private spaces; and • addressing <i>Crime Prevention through Environmental Design (CPTED)</i> principles.
Streetscape design	<p>Streetscape design fosters street life and contributes to an attractive street environment, encouraging pedestrian activity and reducing the heat island effect.</p> <p>Aspects to be incorporated in all streetscape design include:</p> <ul style="list-style-type: none"> • integrated landscape and the built form, having regard to the context, the public interface, the design for human scale, and the climatic conditions; • deep planting, to enable large subtropical shade trees to grow, including retention of existing large subtropical shade trees where possible; • landscaping sympathetic and responsive to any landscape outcomes established or intended within the public realm; • a balance between landscaping and the positive public interface to the streetscape, so landscaping does not result in a lower level of activation of the public realm; • landscaping with access to the sky and sun; and • appropriate planting species for a subtropical environment. <div data-bbox="485 792 1356 1294">  <p>Fig. 41</p> </div> <p style="text-align: center;">Figure SC6.X.3-#</p> <div data-bbox="485 1352 1356 1854">  <p>Fig. 42</p> </div> <p style="text-align: center;">Figure SC6.X.3-#</p> <p><i>Note: Streetscape design must also have regard to SC6.9 City Plan policy – Land development guidelines and SC6.10 City Plan policy - Landscape work.</i></p>
Public realm embellishment	<p>Where appropriate, development contributes to the embellishment of adjoining and nearby public spaces, including streetscapes and public open spaces.</p> <p>Public space improvements may include upgrades to the verge to reflect Council's</p>

Sub-principle	Requirement
	<p>standard design requirements, in addition to greater embellishment/s which may assist in supporting increased development outcomes.</p> <p>Public space contributions may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • footpath and verge paving, street tree and landscape improvements; • provision of context responsive street trees; • provision of street furniture or facilities; • provision of pedestrian lighting; • upgrades to local parkland; or • provision of public art. <p><i>Note: Public space embellishment must also have regard to SC6.9 City Plan policy – Land development guidelines and SC6.10 City Plan policy - Landscape work.</i></p>



SC6.X.3.3 Key design principle 2: High quality visual appearance



Development creates buildings which are visually appealing.

Sub-principle	Requirement
Clarity of architectural approach	<p>Development demonstrates a clear architectural vision, having regard to sound and documented underlying design principles, values, core ideas and philosophy. The architectural outcome should have regard to the following concepts:</p> <ul style="list-style-type: none"> • demonstrated conceptual framework; • coherence of design expression; • relationship to built form and context; • program resolution; • integration of allied disciplines; • creativity and innovation; and • simplicity and sophistication in design language.
Architectural quality	<p>Development demonstrates a high quality of architectural design, having regard to:</p> <ul style="list-style-type: none"> • well-proportioned design; • balanced composition of elements; • high quality materials, considering the longevity of materials without limiting quality, tactile nature, colours and finishes; • architectural design that reflects the use, internal layout and structure; • artistic contribution, including potential for inclusion of public art, creative lighting, and the overall sculptural form of the building; • podium and tower relationship and/or tower touchdown, where appropriate having regard to the scale of development; • architectural language with a base, middle and cap, where appropriate having regard to the scale of development; • enabling of opportunities for adaptation and change; • a building that is innovative, creative and forward-thinking; and • landscaping integrated into the built form and architecture.

SC6.X.3.4 Key design principle 3: Subtropical living

Development creates buildings that are climate responsive and great to live in.

Sub-principle	Requirement
Building design for passive climatic response	<p>Development is designed to:</p> <ul style="list-style-type: none"> • be responsive to the Gold Coast climate, which benefits from extensive annual sunlight, coastal breezes, intense western sun and other factors, and immediate local climatic conditions and patterns; and • work positively with the local climate to create places that are resource efficient and deliver climate resilient, providing comfortable and cost-effective living. <p>Building design incorporates the following:</p> <ul style="list-style-type: none"> • all dwellings are provided with high levels of access to natural light, particularly in the direction of desirable solar orientation (e.g. north), through the provision of large windows to habitable rooms, use of skylights, balconies and other openings; • all dwellings are provided with high levels of access to natural ventilation and desirable prevailing breezes, through inclusion of cross ventilated units; • development is oriented to take into account breezes and sunlight with the aim to optimise a comfortable and liveable environment for all residents and visitors, through: <ul style="list-style-type: none"> ○ a building design that orientates to limit negative impacts of sun and heat, and incorporates shading, façade performance and operable elements for occupant comfort and energy efficiency, particularly for the northern and western facades and the public realm; ○ a building design that orientates to limit the negative impacts of prevailing breezes on occupants, together with broader impacts of wind on the usability of private open spaces, communal open spaces and the public realm; ○ a building design that provides access to natural light for users at the ground plane; • internal dwelling layouts reflect best practice residential design, are functional and high quality, including generous floor to ceiling heights; and • landscaping reduces temperature extremes and provides comfort to residents and to the public realm. <div data-bbox="517 1064 1334 1534">  <p>Fig. 36</p> </div> <p style="text-align: center;">Figure SC6.X.3-#</p> <div data-bbox="517 1570 1334 2040">  <p>Fig. 38</p> </div> <p style="text-align: center;">Figure SC6.X.3-#</p>

Sub-principle	Requirement
Environmental performance	<p>Development achieves best practice in environmental performance, including:</p> <ul style="list-style-type: none"> • a design that reduces the need for operational costs (such as air conditioning), and incorporates available technology to provide a high level of energy efficiency; • designing floorplates to provide lobbies and corridors on all levels with access to natural ventilation and light; • reducing infrastructure demand through passive design outcomes, energy efficiency measures, and direct reduction techniques, including opportunities for use of renewable energy generation; • recycling and reusing building materials and waste; and • using sustainable building materials.
Outdoor living	<p>Development contributes to the Gold Coast's outdoor lifestyle, providing dwellings with:</p> <ul style="list-style-type: none"> • generous and functional private open spaces, that are positioned adjacent to the main living area of the development and are usable having regard to local climatic conditions (including wind and solar orientation); and • an appropriate level of communal recreational amenity, that is well located within the development and is usable having regard to local climatic conditions (including wind and solar orientation).
Integrated landscape	<p>Development provides a strong relationship between the built form and landscape elements, operating as an integrated and sustainable system, which will enable operational benefits together with visual and amenity benefits. This includes:</p> <ul style="list-style-type: none"> • providing an overall connection between residential activities (private and communal) with the landscape elements, including vegetation integrated within and throughout the design; • ground level, podium-top and elevated gardens in various and creative locations, for resident and visitor use and to visually break the built form; • landscape areas that are functional and usable in terms of access to sunlight and management of wind impacts; • landscaping design that connects the site to the street; • considering water management, soil management, microclimatic benefits, ecological and hydrological systems, practical establishment and long term management; and • applying best practice Water Sensitive Urban Design. <div data-bbox="533 1108 1305 1552">  <p>Fig. 39</p> </div> <p style="text-align: center;">Figure SC6.X.3-#</p> <div data-bbox="533 1581 1305 2024">  <p>Fig. 37</p> </div> <p style="text-align: center;">Figure SC6.X.3-#</p>

SC6.X.3.5 Key design principle 4: Manage amenity




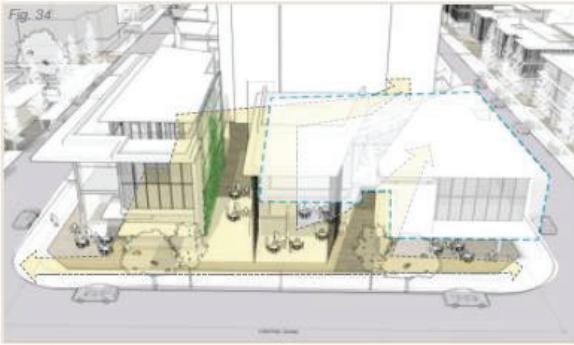
Development limits adverse impacts on other buildings and their occupants.

Sub-principle	Requirement
Built form and layout	Development provides a built form and layout that assists in the protection of amenity for adjoining properties, including existing and potential future buildings. This includes: <ul style="list-style-type: none">• providing boundary setbacks and building separation to buildings on the site and to adjoining sites, that provides for natural light and ventilation to the development, minimises the impact of development on the amenity and privacy of neighbouring existing residents, and considers future development;• providing a site cover that promotes:<ul style="list-style-type: none">○ a balance between built form and landscaping;○ a neighbourhood character;○ a slender building tower form, where appropriate having regard to the scale of development; and;○ an attractive skyline, where appropriate having regard to the scale of development; and• limiting shadowing of other buildings and the public realm, including through a built form that results in slender, fast moving shadows.
Residential amenity	Development reflects and supports the level of comfort, quiet, visual cohesion, privacy and safety reasonably expected within the environment within which it is located.

SC6.X.3.6 Key design principle 5: Responsive urban form

Development creates buildings that are responsive to context and positively contribute to the local area.

Sub-principle	Requirement
Relationship with City-wide context	Development responds to the City-wide context, having regard to: <ul style="list-style-type: none">• location within the City (e.g. coastal strip, canal areas, etc.);• consistency with the established and anticipated City skyline;• impacts on broader views across the City; and• impacts on the greenspace network and connectivity.
Relationship with site and local context	Development responds to and contributes to its local context and site characteristics including: <ul style="list-style-type: none">• established and desired character of the local area, taking into account the existing and intended use (e.g. residential, mixed use, centre, etc.);• streetscape and built form elements, particularly desirable elements and repetitions of the streetscape, ground level activation and podium response, where appropriate;• relationship to adjacent sites and buildings (existing and potential future buildings), in terms of setbacks, privacy, light, air and overshadowing, having regard to broader urban context and character;• memorable views, including maintaining or creating views or vistas from public vantage points to heritage places, landmarks, natural assets and across public spaces;• relationship and interactions with public spaces, including opportunities to embellish or connect public space elements;• consideration of the site characteristics and local context (existing and emerging) in the resolution of the built form, architectural and landscape design; and• a building design inspired by local places and incorporating locally significant character elements (including heritage, built form, landscape, topography, local building traditions and materials, and other elements).
Legibility and wayfinding	Development contributes to the walkability and legibility of the site and the local area; through: <ul style="list-style-type: none">• locating building entries in a logical and legible position, having regard to the site's proximity to transport, location within the public realm, and other accessibility elements;• providing built form responses that express and strengthen corners;• providing tower to the ground in at least one instance, where appropriate;• incorporating wayfinding techniques outlined in the <i>CPTED</i> guidelines;• providing cross block connections, laneways, arcades, loggia, courtyard, walkways and stairways, where appropriate to local needs; and• providing public open space such as plazas and parkland, where appropriate to local needs.

Sub-principle	Requirement
	 <p>Figure SC6.X.3-#</p>  <p>Figure SC6.X.3-#</p>  <p>Transparent perimeter facade activates the street.</p> <p>Figure SC6.X.3-#</p>  <p>Permeable and porous Urban Ground draws activity through the site.</p> <p>Figure SC6.X.3-#</p>

SC6.X.3.7 Key design principle 6: Future use

Development allows for future changing needs.

Sub-principle	Requirement
Adaptable buildings	Development provides opportunities for adaptation and change throughout the life of

Sub-principle	Requirement
	the building/s, including the flexible reuse of non-residential areas (including above ground car parking areas), to support changing community and business needs.

SC6.X.3.7 Checklist

- ☐ Key design principle 1: Engage the ground plane
 - ☐ 1.1 Active and engaged - a positive interface between public and private realms
 - ☐ 1.2 Form and space - creating a human scale design
 - ☐ 1.3 Safety and security
 - ☐ 1.4 Streetscape design
 - ☐ 1.5 Public realm embellishment
- ☐ Key design principle 2: High quality visual appearance
 - ☐ 2.1 Clarity of architectural approach
 - ☐ 2.2 Architectural quality
- ☐ Key design principle 3: Subtropical living
 - ☐ 3.1 Building design for passive climatic response
 - ☐ 3.2 Environmental performance
 - ☐ 3.3 Outdoor living
 - ☐ 3.4 Integrated landscape
- ☐ Key design principle 4: Manage amenity
 - ☐ 4.1 Built form and layout
 - ☐ 4.2 Residential amenity
- ☐ Key design principle 5: Responsive urban form
 - ☐ 5.1 Relationship with City-wide context
 - ☐ 5.2 Relationship with site and local context
 - ☐ 5.3 Legibility and wayfinding
- ☐ Key design principle 6: Future use
 - ☐ 6.1 Adaptable buildings

SC6.X.4 Part 2 – Design and Context Report

The preparation of a Design and Context Report will assist in demonstrating how a development achieves the key design principles in Part 1 of this City Plan policy, and in demonstrating how the proposal responds to its site characteristics, context and setting. A Design and Context Report aims to communicate both an analysis of and a response to the site conditions and context. The following provides guidance on the components, scope and format recommended for a suitable Design and Context Report.

The response to each section must demonstrate the approach and thinking for the design, having reference to the stated guidance, and using diagrams, plans, sketches, perspectives and other tools as necessary.

Section	Guidance
Vision	Express a clear vision for the design of the development, including the underlying principles, values, core ideas and philosophy.
City-wide context	<p>Provide consideration of the broader City-wide context at the outset (before more immediate context), to provide a contextually responsive built form and architecture, taking into account the site location within the Gold Coast.</p> <p>Aspects to address include:</p> <ul style="list-style-type: none"> location within the City (e.g. coastal strip, canal areas, etc.);

Section	Guidance
	<ul style="list-style-type: none"> coherence with established and anticipated City skyline; impacts, if any, on broader views across the City; and greenspace network and connectivity.
Site and local area context	<p>Provide consideration of the more immediate urban context, to demonstrate a site-responsive and local area-responsive built form taking into account the site characteristics and form of surrounding development and public realm.</p> <p>Aspects to address include:</p> <ul style="list-style-type: none"> site position within the local area, including proximity to transport, open space, centres, etc.; streetscape context, including how the development contributes to the streetscape and public realm, in terms of: <ul style="list-style-type: none"> established and anticipated podium arrangements, if relevant; ground level activation, noting that different types of activation may be desirable in different areas; awning heights and continuity; and footpath widths, continuity, design and maintenance; relationship to adjacent sites and buildings (existing and potential future buildings), in terms of setbacks, privacy, light, air and overshadowing, and having regard to broader urban context and character; relationship to heritage places and their setting; memorable views, including maintaining or creating views or vistas from public vantage points to heritage places, landmarks, natural assets, and across the public realm; and public realm context, including opportunities to embellish or connect public realm elements.
Site analysis	Demonstrate how the site's constraints and attributes have been considered in the design of the development, including (but not limited to) topography, established vegetation, constraints overlays such as flooding etc.
Urban form	Demonstrate the evolution of the development's urban form, from a basic response to the building envelope parameters of the City Plan Codes, to an interesting and articulated urban form that is responsive to its context and the key design principles of this City Plan policy.
Architectural design	<p>Demonstrate the evolution of the architectural design, from an abstract or conceptual level, to a resolved and coherent architectural language, that is responsive to its context and the key design elements of this City Plan policy.</p> <p>Include the following:</p> <ul style="list-style-type: none"> a materials palette for all key aspects of the architectural design; architectural perspectives of the proposed development showing materiality, height, scale and form; and elevations showing interface with adjoining sites.
Key design principles	<p>Demonstrate how the development design incorporates the six key design principles expressed in Part 1 of this City Plan policy:</p> <ul style="list-style-type: none"> Key design principle 1: Engage the ground plane Key design principle 2: High quality visual appearance Key design principle 3: Subtropical living Key design principle 4: Manage amenity Key design principle 5: Responsive urban form
Overall design	Ensure the overall design is cohesive in bringing together all design principles and technical inputs. Examples of specialists who can assist with communicating the project outcome include architects, engineers, landscape architects, artists, etc.

APPENDIX B: CBA DETAILS

TABLE 9: COSTS BENEFIT ANALYSIS FOR MADDISON ON HIGH APARTMENTS

Project Case 1	Marginal costs				
	Construction costs	Professional fees	Improved public amenity	Enhanced visual coherence and sense of place	Improved safety and security
Year 1	\$ 108,000	\$ 45,720	\$ 144,000	\$ 86,400	\$ 3,375
Year 2	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 3	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 4	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 5	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 6	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 7	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 8	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 9	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 10	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 11	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 12	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 13	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 14	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 15	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 16	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 17	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 18	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 19	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 20	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 21	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 22	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 23	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 24	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 25	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 26	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 27	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 28	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 29	\$ -	\$ -	\$ -	\$ -	\$ 3,375
Year 30	\$ -	\$ -	\$ -	\$ -	\$ 3,375
NPV	\$ 108,000	\$ 45,720	\$ 144,000	\$ 86,400	\$ 44,812
	70%	30%	52%	31%	16%
Discount rate	7%				
Total costs	\$ 153,720				
Total benefits	\$ 275,212				
BCR	1.79				
Total NPV	\$121,492				



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