Ministry for the Environment
Manatū Mō Te Taiao

SUMMARY OF

The Value of Urban Design

The economic, environmental and social benefits of urban design

NZ URBAN DESIGN PROTOCOL

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The Urban Design Protocol forms part of the Government's *Sustainable Development Programme of Action.*

Foreword

Urban design matters to us all – and nowhere more so than in New Zealand, one of the most urbanised nations in the world. Urban design matters because the built environment of our towns and cities is where individual lives connect, and where community and economic life takes place. Urban design matters because it has the potential to help New Zealanders live more sustainably, happily and healthily.

But what evidence is there about the value of urban design? What are the potential costs, and who bears them? What kind of advantages does urban design offer New Zealand towns and cities, and who benefits?

The leading edge research presented in this report provides some answers to these questions. It evaluates the claims that are made for urban design, and considers whether they are justified. It takes a broad view of urban design value – considering not only economic value, but also social, cultural and environmental value. It considers the extent to which overseas urban design experiences are applicable to New Zealand.

The Value of Urban Design will help both the public and private sectors. Public agencies will find it helpful in formulating policy that supports a better urban environment, and in meeting their obligations to deliver well designed public buildings and spaces. It will also assist developers and property investors in their decision-making about where, when and how to invest in a rapidly changing urban environment. Moreover, it will give them the confidence to make the extra investment needed to deliver high quality urban development.

In March 2005 the *New Zealand Urban Design Protocol* was formally released. It sets out a vision for successful New Zealand towns and cities that:

- are competitive, thriving, creative and innovative
- are liveable
- are environmentally responsible
- offer opportunities for all
- have distinctive identities
- pursue their goals on the basis of a shared vision and good governance.

The Value of Urban Design demonstrates that – with care and commitment – good urban design has the potential to make this vision a reality. It can help make our towns and cities work better – economically, socially and environmentally – and this will ultimately benefit us all.

Hon Marian L Hobbs
Minister with Responsibility for Urban Affairs
Minister for the Environment

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About this Report

In 2004, the Ministry for the Environment – together with the Wellington City Council and the Auckland Regional Council – commissioned a team of consultants[1] to investigate the economic, social, cultural and environmental value added by urban design. The aim was to find what proof existed of the links between urban design and these various forms of value.

The consultants undertook an extensive literature review, analysing a wide range of international and local documentary evidence chiefly from the past five years. In all, they reviewed more than 300 studies from Britain, Europe, North America, Latin America, the Middle East, Australia and New Zealand. (A summary of the report methodology is included in Appendix 1.)

The full research report is available on the Ministry for the Environment's website: www.mfe.govt.nz.

This report summarises the main themes and key findings from the research, illustrating them with quotations and summaries from some of the most compelling evidence. Source documents are listed in the 'Further Reading' section on page 26.

This report and the New Zealand Urban Design Protocol

This report supports the implementation of the Ministry for the Environment's *New Zealand Urban Design Protocol,* which provides a platform to make New Zealand towns and cities more successful through quality urban design. The Protocol is a voluntary commitment by central and local government, property developers and investors, design professionals, educational institutes and others to create quality urban design and to undertake specific urban design initiatives. It acknowledges that urban design is about both tangible physical elements (such as buildings, parks and streets) and the very process by which decisions are made and implemented.

Both the Protocol and this report will be of particular interest to private and public sector organisations, professionals in all the design disciplines, and community groups.

[1] See Appendix 1 for details about the research team.

Value to developers: can urban design be profitable?
Value to developers and investors is often the hardest to demonstrate. But the evidence shows that good urban design ***can*** *be profitable:*

"While good urban design by itself cannot guarantee positive financial returns, and lack of attention to good design principles can still result in a financially successful project, it is also clear that it substantially enhances a project's likelihood of becoming a financial winner."
The Property Council of Australia, 1999

"If the product mix and architecture is correctly executed and phased, TNDs [traditional neighbourhood developments – i.e. developments following new urbanist principles] can command base pricing levels which are 10 percent to 15 percent higher than conventional single-product projects."
Schleimer, quoted in Steuteville, 2001

The UK Commission on Architecture and the Built Environment cites an exploratory study carried out by property consultants FPD Savills in 2002, indicating that "volume house builders who had invested in higher quality design in residential schemes could expect to yield a residual value per hectare of up to 15% more than conventionally designed schemes".
CABE, 2002

A study led by Carmona in London for CABE and the United Kingdom's environment ministry (DETR) "consistently concluded that good urban design added economic value in the form of better value for money, higher asset exchange value and better lifecycle value". These elements tend to accrue to the investor, especially if the investor retains a longer term stake.
Carmona et al, 2001

Key findings about the Value of Urban Design

Recent international research shows conclusively that good urban design has the potential to create value for communities, individuals, the economy and the environment. The potential benefits include:

- better public health
- greater social equity
- enhanced land values
- a more vibrant local economy
- reduced vehicle emissions
- more sustainable use of non-renewable resources.

Table 1 on pages 23 and 24 of this report provides a more detailed summary of the key findings. Overall, the following broad themes emerge consistently from the research:

Good urban design can be profitable, and it also offers significant benefits to the community.

Good design does not necessarily cost more and delivers enhanced benefits to both the developer and the wider community. Well designed urban projects may generate higher returns to developers, especially where they take a longer term view. Good design may sometimes involve more investment upfront, but this generally pays off over the lifetime of the building or place. Good urban design that addresses issues such as mixed use and the quality of the public environment can help a city remain adaptable and resilient in a changing economic environment. Well designed urban areas can become focal points for economic interaction, enterprise and innovation and can help attract skilled workers, residents and tourists.

Poor design can have significant adverse effects on the urban environment, society and economy.

Poor urban design may lower quality of life, limit employment opportunities and generate a wide range of unsustainable costs for the community and the city as a whole.

Communities value the better quality of life that good urban design can deliver.

'Quality of life' is an increasingly important basis on which towns and cities compete for investment and skilled workers. But it is also highly valued by communities. There are two key areas where good urban design is shown to make an especially positive contribution to people's quality of life:

- **Good urban design can encourage people to undertake physical exercise, thereby creating health benefits.**
  By making streets and neighbourhoods safer, better connected and more attractive, good urban design can create more walkable cities. Walkable cities can generate more custom for businesses, reduce environmental costs and enable better access to services by those who cannot drive or access public transport.
- **Good urban design can help make towns and cities safer and more secure.**
  The risk of crime is lower when there are interconnected networks of streets which increase opportunities for natural surveillance. Mixed use areas may also be less affected by some kinds of crime, and by the fear of crime. Poor connections between neighbourhoods or individual dwellings can increase the risk of burglary and lead to other problems, including vehicle dependence and social isolation.

These potential benefits cannot be realised by a piecemeal approach to urban design.

The various elements of urban design identified in this report must be consciously brought together so they reinforce one another. Urban design initiatives must also work at a number of scales: within individual sites or streets, within neighbourhoods, across the wider city and its connections with the region. Urban design initiatives need to be supported by complementary economic, social and environmental policies and programmes to maximise benefits – it is not enough to address the physical environment in isolation.

These broad conclusions are based on findings about the following urban design elements.

A US study assessed the correlation between objectively-measured levels of physical activity and aspects of the physical environment around each participant's home (while controlling for socio-demographic variables).

The research found that 37 percent of the people in the quartile of neighbourhoods with the highest walkability index exercised for 30 minutes or more per day compared with 18 percent in the lowest walkability index quartile.

The study concludes: "This research supports the hypothesis that community design is significantly associated with moderate levels of physical activity. These results support the rationale for the development of policy that promotes increased levels of land-use mix, street connectivity, and residential density as interventions that can have lasting public health benefits."
Frank et al, 2005

"The efficacy of [good urban design practices] depends on how well they are implemented, and how they are combined with other programs."
US Environmental Protection Agency, 2001

"Positive images of places... encourage locals to feel good about their home towns and the quality of life that can be had there."
New Zealand urban sociologist David Thorns, 2002

The continued relevance of neighbourhoods and neighbourhood character was shown in two independent British studies ***(by Gharai, 1998, and CABE, 2002)*** *which found that people place more importance on the quality and appearance of their neighbourhood than they do on their own homes.*

A British survey of "600 households on a large suburban housing estate with little or no distinctive design quality" found that these houses were harder to sell than those on "more distinctively designed developments".
University of Bristol, cited in CABE, 2002

According to ***David Thorns****, "at the local level the preservation of difference has become valued, sometimes as a commodity to sell, through the rediscovery of heritage sites and conservation and the recreation of the past".*

Local character – Oamaru has many unique historical buildings created from the local creamy white 'Oamaru Stone'.

The Value of Local Character

Links to the 'character' component of the seven Cs (Urban Design Protocol).

What is local character?

Local character is the distinctive identity of a particular place that results from the interaction of many factors – built form, landscape, history, people and their activities.

Key findings

Urban design that respects and supports local character can:

- attract highly-skilled workers and high-tech businesses
- help in the promotion and branding of cities and regions
- potentially add a premium to the value of housing
- reinforce a sense of identity among residents, and encourage them to help actively manage their neighbourhood
- offer people meaningful choices between very distinctive places, whose differences they value
- encourage the conservation and responsible use of non-renewable resources.

Overview of the research

There is widespread agreement that good urban design responds to and maintains local character. There is strong evidence that the presence of local character encourages community life and reactivates people's sense of identity with their particular neighbourhood.

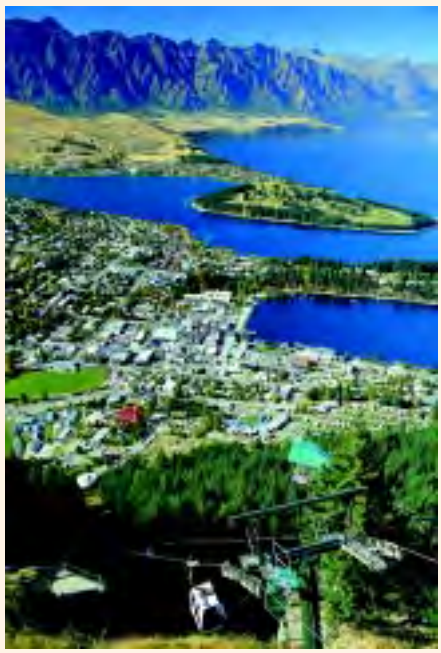
These findings counter the claims of other commentators that neighbourhood character is less important in an age of rapid mobility and communication.

The presence of distinct localities within a city also helps to satisfy growing demands for greater choice and for diversity over standardisation. Some people are prepared to pay more to live in an area whose distinctive character they like.

Tourists and investors are also attracted by distinctiveness. Cities and entire regions can gain a valuable 'competitive edge' by virtue of their unique character.

Heritage buildings play an important role in creating character. It has been suggested that improving an area's historical fabric may in fact help stimulate economic revitalisation. Conserving heritage buildings is seen as a way of making responsible use of non-renewable resources – although the potential costs associated with maintenance, operational efficiency and meeting conservation controls are also acknowledged.

A US authority on development principles for downtown areas in small cities, Kent Robertson, concludes that older buildings manifest the heritage of the city and differentiate it from competing suburban developments. He says their retention has economic value.
Robertson, 2001



Local character – Queenstown has a unique character that combines a stunning landscape of mountains and lakes, a vibrant town centre, leisure pursuits and a healthy tourist-based economy.

Poor connectivity and infrastructure limits investment opportunities and "imposes costs which later have to be borne by public and private stakeholders, although original developers have often moved on," according to a 2001 study conducted jointly by the UK's Commission for Architecture and the Built Environment (CABE) and the Department of the Environment, Transport and the Regions (DETR).
Carmona et al, 2001

"Physical inactivity is an important determinant of ill-health, and even moderate levels of activity confer health benefits."
Giles-Corti & Donovan, 2002

A study of residents of Botany Downs, an urban growth area in Manukau where 97 percent of respondents own or have access to a car, found that less than 10 percent go beyond Botany Downs for their day-to-day shopping. Just under half walk to the shops, while 22 percent both walk and drive.

Over 80 percent of respondents reported doing their bulk grocery shopping in Botany Downs as well. More than half drive, 17 percent walk or drive, and 22 percent walk for their bulk shopping.
Thompson-Fawcett & Bond, 2004

"Many ...successful cities also place a high premium upon good internal access and have invested heavily in efficient inter-modal public transport systems."
Parkinson et al, 2004

The Value of Connectivity

Links to the 'connections' and 'custodianship' components of the seven Cs (Urban Design Protocol).

What is connectivity?

Connectivity is the degree to which networks – streets, railways, walking and cycling routes, services and infrastructure – interconnect. Good connections encourage access within a region, city, town or neighbourhood.

Key findings

Well connected cities, towns and neighbourhoods can:

- enhance land values
- make local shops and facilities more viable
- enhance people's safety and security by encouraging surveillance
- encourage more walking and cycling, leading to health benefits
- reduce vehicle emissions through fewer cars being used for non-work trips.

Overview of the research

Well connected networks enhance access, and give people a choice of routes. But networks need to offer people more than access alone. They must also provide high quality spaces and routes that people find safe and enjoyable to use.

Improving connections and access can have both positive and negative effects. Good transport systems can advantage everyone by supporting economic activity and enhancing land values in particular locations. But they can also create negative effects such as noise and pollution. Urban design can help minimise these costs.

In particular, the accessibility and lack of congestion offered by city fringe locations make these peripheral areas highly attractive to some kinds of businesses. But city fringe development may have adverse effects for the wider city – social isolation in some areas, greater pollution and more traffic congestion. This is where urban design can help – ensuring that the provision of access to the city periphery is carefully managed so it does not undermine the overall form of the city, and a net benefit for the region is achieved.

Good transport connections – both internally, and to other regions and cities – are shown to be a feature of competitive cities, although the exact relationship between transport connectivity and competitiveness is not clear.

One effect of good connections that is abundantly clear across all the literature is that it encourages more physical activity and reduces car dependence. There is compelling evidence about the health benefits of increased physical activity in general, and also about the specific health benefits of walking and cycling – especially if these activities are part of everyday life. Connections that are high quality, visible, safe and offer quick, convenient access to facilities increase the likelihood that people will walk to work or anywhere else. This may even be the case for shopping trips, often thought to be car-dependent.

These 'walkable' environments offer other significant benefits beyond improving people's health. They can reduce the public costs associated with car use, such as traffic congestion and the provision of road and parking facilities. There are also positive economic spin-offs for retailers and employers because of the higher pedestrian traffic.

Safety is also influenced by connectivity. There is evidence of a significantly reduced risk of burglary when areas are well connected and visible, as there is more opportunity for natural surveillance. The same is true for individual buildings: there are fewer burglaries where low walls allow views in and out, 'active edges' face the street, and both cars and pedestrians use the street. These conditions can also help reduce social isolation within neighbourhoods.

To be safe, places must also be well used. For this to happen, good urban design should address connectivity not in isolation, but alongside other qualities such as the mix of activities and land uses.

One American study found rates of walking for shopping trips were 20 percent higher in pedestrian oriented neighbourhoods than those which were car oriented. This goes against conventional wisdom "that consumer shopping is heavily auto oriented".

The same study also found that – while transit trips are more influenced by factors other than neighbourhood design – pedestrian oriented development was correlated with a 20 percent higher share of walking trips to transit stations than auto oriented development.
Cervero & Radisch, 1996

A major study in the UK found that street connectivity is linked with reduced occurrence of burglary. This challenges the view that complex cul-de-sac arrangements lead to increased safety and security.

He found that houses on streets accommodating cars and pedestrians had a burglary rate less than half that of those on pedestrian-only access routes. And on streets with 'active edges', burglary rates were reduced by up to two-thirds.
Shu, 2001

Connectivity – The Christchurch tram route runs through Cathedral Junction and is a popular tourist attraction. Source – Christchurch City Council.

*The **UK Urban Task Force (1999)** says there is a sound case for greater urban density: "research has shown that real land economy gains are being achieved from increasing densities...[H]igher densities allow a greater number of public amenities and transport facilities to be located within walking distance, thus reducing the need for the car, and contributing to urban sustainability".*

An Italian study showed that sprawl tends to raise transport costs. "Diffused, sprawling development" is associated with higher economic and environmental costs of mobility, and with low use of public transport. Density appears to have an impact significantly through influencing the average trip time of public transport.
Camagni et al, 2002

Density – Often it is the densest parts of cities, such as downtown Auckland, which have the greatest vitality and sense of excitement.

The Value of Density

Links to the 'context', 'choice' and 'custodianship' components of the seven Cs (Urban Design Protocol).

What is density?

Density is the concentration of population and activity in an urban area. The most vibrant, diverse and exciting part of a city is often its centre. Density is at its highest at the centre, where there is the greatest range of people, buildings, public spaces, facilities, services and choices. Here, people can most easily exchange ideas and goods and services, both for business and for pleasure.

Key findings

Urban design that promotes a higher density of buildings and public spaces (in conjunction with other conditions such as mixed use, good building design and adequate open space) can:

- provide cost savings in land, infrastructure and energy
- reduce the economic costs of time spent travelling
- help concentrate knowledge and innovative activity in the core of the city
- be associated with lower crime and greater safety
- help preserve green spaces in conjunction with certain kinds of urban development
- reduce runoff from vehicles to water, and emissions to the air and atmosphere (though air emissions may be more locally concentrated)
- help encourage greater physical activity, with consequent health benefits
- promote social connectedness and vitality.

Overview of the research

High urban density has potential costs in the form of congestion, noise and localised pollution. But low density development – urban sprawl – can also be costly, reflecting the higher economic and environmental costs of mobility. Much of the international research investigates this tension, examining the kinds of value (both private and public) created by dense versus less dense cities.

There is clear evidence about some of the savings offered by high urban density. Market demand leads to high land prices in dense city centres, and provides an impetus to economise on land resources. There are also infrastructure savings (eg, on roads, sewerage, schools), although these costs can rise again in cities with very high densities. High density also leads to energy savings, with significant reductions in petrol use and car dependence – especially in cities with multiple compact centres.

More general economic benefits of high urban density include enhanced ability to attract and concentrate businesses that are not space-intensive, such as knowledge-based industries, and to offer people better access to job opportunities.

Overall pollution from vehicle emissions can be less in dense cities (although there may be localised areas of higher pollution), providing development is carefully located and directed. Infill development is also shown to create less runoff and water pollution.

Urban density and green space are sometimes suggested to be incompatible. It is certainly clear that green space in the city contributes to public health, quality of life and biodiversity. This value is reflected in property prices around iconic green spaces. But it is less clear how much green space is needed to generate these benefits. Incorporating large tracts of green space into the city can create problems elsewhere. It may push development to the periphery where it changes the nature of adjoining rural areas, and generates more traffic and raises the costs of doing business in the wider urban area.

Cities in which compact centres are interspersed with green areas may offer the best solution to these problems.

There must always be some degree of trade-off between density and city greenery. Both the Urban Task Force in the United Kingdom and the United States Environmental Protection Agency, suggest a way through this challenge: the polycentric urban form (or cluster zoning) with high-density areas interspersed with green wedges or areas. Auckland's node-focused growth strategy has adopted this concept.

Opinions vary about the benefits of higher density: a place that attracts some people with its vitality and 'buzz' may deter others. High density city centres can provide a greater range of housing and lifestyle choices. There is also evidence that denser urban areas have a strong sense of community, connectedness and vitality – largely because people are in closer contact with each other. But there may be a point at which this ceases to happen. In very high density areas, people may in fact withdraw from others and seek privacy.

"...real land economy gains are significant" when housing concentrations are increased from low to medium densities (eg, 35-40 dwellings per hectare), according to a study by the Urban and Economic Development Group ***(URBED) in London, in 2000.***

As density increased from 10 units per hectare for conventional development to 25 units per hectare, infrastructure costs per dwelling fell by 55%.
Buxton, 2000

When they are carefully located and directed, concentrated forms of city development such as compact city, multi-nodal or edge city can lead to reduced pollutant emissions relative to 'business-as-usual', according to a 2000 study in the UK. ... "The compact city emerges as the most fuel efficient of all urban forms, with 43% less fuel consumption than 'business-as-usual' development."
Newton, 2000

The US Environmental Protection Agency has found that the most compact patterns of development result in less vehicle travel than dispersed patterns. This was borne out in a 1994 study of 28 Californian neighbourhoods by Holtzclaw, which found that "...a doubling of residential density levels produced 25-30 percent fewer miles driven per household".
Frank et al, 2003

The East Hills Development near Napier is an example of a rural cluster development that, while still car-dependent, nevertheless provides an alternative to large lot rural/residential subdivision. Relatively small house sites are placed strategically across the 76 hectare site to maintain privacy, benefit from views and blend in with the natural landscape. The balance of the land is designated as reserve, to be owned and managed by an owners' association. An extensive planting programme protects the local environment and enhances habitats.
Logan, 2004

Density – Higher densities found in town or city centres like central Wellington provide exceptional access to office and retail employment.

Density – Northwood residential area in Christchurch offers a choice of housing types, including medium density terraced housing.

High urban density can be beneficial for public health because it encourages more walking and cycling. High density can also make public transport – which involves more walking than private vehicle use – more viable.

Although there is strong evidence about some of the benefits inherent in high urban density, it is clear that density alone does not deliver benefits unless other important design issues are addressed too. Successful intensification and higher density in cities requires good design that also meets other needs – for instance, adequate open space and pedestrian friendly streets.

The Value of Mixed Use

Links to the 'choice', 'connections' and 'custodianship' components of the seven Cs (Urban Design Protocol).

What is mixed use?

Mixed use is where different activities take place in the same building, street or neighbourhood.

Key findings

Urban design that supports mixed use areas (with other factors including good connections and high intensity of different uses) can:

- allow parking and transport infrastructure to be used more efficiently
- lower household expenditure on transport
- increase the viability of local shops and facilities
- encourage walking and cycling – bringing health benefits, reducing the need to own a car and thus reducing emissions
- enhance social equity
- increase personal safety
- offer people convenience, choices and opportunity which lead to a sense of personal wellbeing.

Overview of the research

There is considerable evidence that mixed use (in conjunction with other design conditions, such as connectivity) minimises travel distances. This allows people to make more trips by foot or bicycle than by car, with clear health and convenience benefits. Car ownership levels do not necessarily change – cars are still used for trips outside the neighbourhood, or for heavy shopping trips – but people may not use their cars as often. Household spending on travel and transportation may be reduced.

The viability of public transport is also improved: a single bus or train stop can serve several destinations, which encourages people to use it more.

Benefits to the local economy also flow from mixed use. It improves people's access to work opportunities, especially low income earners. Different people make use of an area at different times and for different purposes, benefiting local shops and services.

"Those living in a more compact, mixed use and pedestrian oriented neighbourhood averaged about a 10 percentage point higher share of non-work trips by walking, biking and transit modes than those in a typical middle class and upper middle class American suburb."
Cervero & Radisch, 1996

Where local amenities are within walking distance, there may be better health outcomes, according to a North American study. It found that the likelihood of obesity across gender and ethnicity "declined by 12.2% for each quartile increase in mixed use [land], and by 4.8% for each kilometre walked".
Frank et al, 2004

CABE and DETR's 2001 report found that good urban design "can be decisive in retaining companies in particular areas ...in urban as opposed to out of town locations".
Carmona et al, 2001

Expert observations of the centres of major US cities point to a link between intensive mixed use and increased safety.
Petersen, 1998

Mixed use – This mixed use development on Parnell Road in Auckland combines apartment living with shops at ground level. Source - Auckland City Council.

In an Auckland Regional Council study (2001), residents commented on the safety advantages of mixed use areas – the "security of more people around" – while businesses also reported "increased security".
Research Solutions, 2001

The 2001 CABE and DETR research, which involved numerous case studies, concluded that "mixing uses leads directly to higher user and occupier satisfaction and was fundamental to the social, economic and environmental value added by the most successful case studies".
Carmona et al, 2001

Mixed use can help create more socially diverse environments as everyone – affluent or poor, young or old – has equal access to facilities, regardless of whether they own a car. However, it does not automatically follow that there is increased interaction between people. Some research suggests mixed use may not lead to greater levels of contact between people: for example, there may be little interaction between affluent and poorer residents.

Mixed use may also enhance security and safety. One American study found less physical violence in mixed use areas (although this was countered by increases in other kinds of disorder, such as graffiti). Other studies showed such areas were safer due to higher levels of natural surveillance because people were in the streets at all hours of the day and night.

There is evidence that people who live and work in mixed use areas appreciate the wide range of experiences and facilities available to them. While there can be negative aspects to mixed use living – such as noise or lack of space – there is also convenience, choice and opportunity.

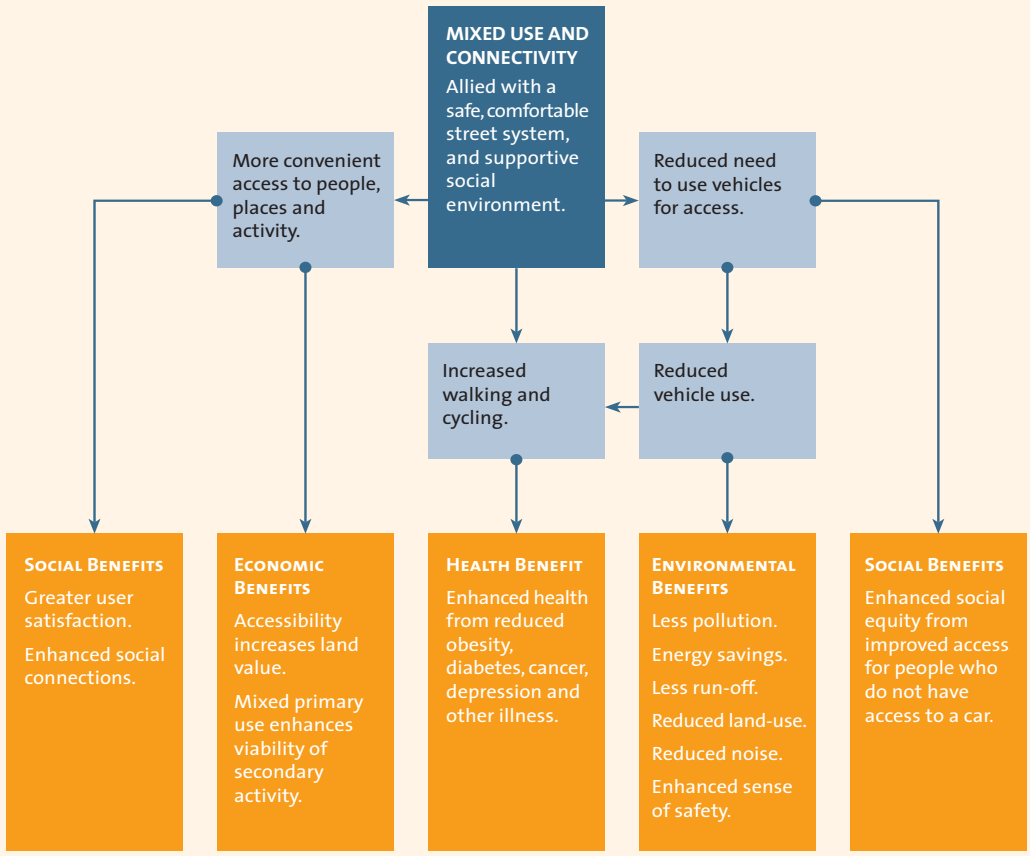
Constraints to mixed use development have been identified. For example, local planning policies may restrict some uses in certain areas. There may be higher risks – perceived or actual – for developers and investors. Not all activities mix, and some – such as those involving noxious emissions, large numbers of heavy trucks, or 24-hour heavy industrial activities – need to be located in specially zoned areas. Not all urban residents or uses may benefit from the development of mixed use areas, either in the inner-city or on greenfield sites.

But it is possible to overcome these difficulties and there are real benefits in doing so.

The following diagram demonstrates the benefits of mixed use and good connectivity.

Mixed use – A mix of retail outlets, cafes, bars and professional offices attracts people to Vulcan Lane in Auckland at all times of the day and night.

The benefits of mixed use and good connectivity



"Good [urban] design in itself does not guarantee sustainability within an urban context unless over time, adaptability is inherent within the design and matched in the surrounding environmental and social fabric."
Loe, 2000

Adaptable public space is used by more people in more diverse ways over a longer period of time (day and night, as well as enduring time), than spaces designed for specified (limited) functions.
Shehayeb, 1995

Jane Jacobs – regarded by many as the 'matriarch' of urban planning and design – wrote in her seminal book, The Death and Life of Great American Cities, *that there are four conditions for vital cities. The first is that districts serve more than one primary function, and preferably at least three.*
Jabobs, 1961

Case studies of high quality urban design projects by the ***Property Council of Australia in 1999*** *included as one of seven assessment criteria "the ability to change over time".*

Adaptability –The former BNZ buildings restored and converted into the Old Bank Shopping Arcade in Wellington.

The Value of Adaptability

Links to the 'choice' and 'creativity' components of the seven Cs (Urban Design Protocol).

What is adaptability?

Adaptability is the capacity of urban buildings, neighbourhoods and spaces to adapt to changing needs.

Key findings

Urban design that addresses adaptability can:

- extend the useful economic life of buildings and public spaces
- increase the diversity of uses and users in a public space, and the length of time it is used for
- encourage the conservation of non-renewable resources
- contribute to economic success over time.

Overview of the research

Adaptable urban public spaces that offer people choices about how and when to use them are found to be better used than those designed for more limited purposes.

Individual buildings, designed at the outset to be more flexible are shown to be more sustainable. The cost of changing buildings to suit new uses, technology or fashions can be high, particularly when they have not been designed with change in mind.

Mixed use areas demonstrate the value of adaptability at the neighbourhood level. By combining many activities and functions, such areas encourage different uses and users at different times, and represent one of the distinctive features of vital cities. An adaptable neighbourhood can be characterised by buildings and houses of different densities, designs, uses, sizes and tenures. Research shows that such neighbourhoods adapt better to changing demand – whether driven by shifts in population, demographics, lifestyles, technology or the market – than those with single purposes and uses. Adaptable neighbourhoods and buildings are considered by property developers to have significant advantages.

The Value of a High Quality Public Realm

Links to the 'creativity' and 'choice' components of the seven Cs (Urban Design Protocol).

What is the public realm?

The public realm provides a setting for community life. It includes all parts of the urban environment that people can experience or access – public space and buildings, and those parts of private development that impact on public space.

Key findings

A high quality public realm can:

- increase the use of public space and support associated business
- encourage greater participation in community and cultural activities
- enhance personal safety.

Overview of research

The quality of the public realm relates to the physical and psychological comfort it offers people. It also reflects less obvious 'comforts' such as aesthetic pleasure (from public art, architecture and history), a sense of belonging and civic pride.

Poor quality public spaces tend to be used only for strictly necessary activities, while a far more diverse range of optional activities – from active recreation to quiet relaxation – takes place in high quality environments.

In cities that are recognised for their liveability – such as Melbourne, three times voted the world's most liveable city – there has invariably been an integrated, sustained and visionary approach to urban design focused on the public realm. Many positive outcomes flow from this holistic approach: enhanced economic performance in specific areas or the whole city; increased activity and occupation; and increased walking and cycling.

In a 2001 study, CABE showed conclusively that good design of public spaces – in conjunction with high quality architectural design – can help boost civic pride.
Carmona et al, 2001

Danish urban designer Jan Gehl says that while people will do only what they need to in poor quality public spaces, an additional "wide range of optional activities" will occur in high quality spaces "because place and situation now invite people to stop, sit, eat, play and so on".
Gehl, 2001

High quality public realm – The Avon River and surrounding areas provide an attractive setting for a variety of recreational pursuits.

High quality public realm – The redevelopment of the Tauranga downtown waterfront created a key attraction and enhanced the economic vitality of the central city. Source – Tauranga City Council.

Todd Litman of the Victoria Transport Policy Institute in Canada found that a successful "shopping centre or office complexes may become more economically competitive if walking conditions improve".
Litman, 1994

The enhancement of Wellington's Blair and Allen Streets in the 1990s delivered tangible benefits. The initiative involved new street paving and landscaping; Wellington City Council also assisted with earthquake strengthening of heritage buildings, and facilitated investment planning with local building owners.

Value gains have since been evident in rents, capital values and physical indicators such as pedestrian counts and the presence of cafes. An economic assessment of property values suggests that values by the late 1990s were approximately double what they would otherwise have been.
Reid, 1999

The only potential negative effect of improving the public realm is the social impact that occurs when people or businesses can no longer afford to remain in an area that has been redeveloped or 'gentrified'. However, studies suggest that – providing these possible social problems are also addressed – gentrification can be positive for a city and its residents.

High quality public realm –Blair and Allen streets in Wellington were transformed from a redundant industrial and market area into an attractive area to work in, or walk through.

The Value of Integrated Decision-making

Links to the 'collaboration' component of the seven Cs (Urban Design Protocol).

What is integrated decision-making?

Integration between and within organisations involved in urban design is needed at a policy, planning and implementation level to achieve high quality urban design. Integrated decision-making may not only enhance the value of urban design, but actually enable it to happen in the first place.

Key findings

An integrated approach to urban design decision-making can:

- allow more opportunities for greater numbers of people to benefit from urban design, over a longer term and at a larger scale
- by working with complementary economic, social and environmental policies, allow urban design to produce the greatest possible benefits.

Overview of the research

Just as the individual elements of urban design work best in combination, urban design decisions are most effective when they result from integrated policies, objectives and values of many parties.

The market alone does not always cater to the urban design needs of the public. In the case of residential developments, developers may be primarily interested in meeting the needs of those who can afford to live there, raising issues of equity and a lack of diversity. However, there are many examples of local authorities working with private developers to ensure a residential development offers wider community benefits (such as reserves and attractive landscaping) and a greater range of housing types and prices.

Harbour View, a 370-unit residential development in Waitakere City, is a good example of a council working closely with private developers to create a development that offers benefits – both social and environmental – that the market did not consider valuable.

When compared with another nearby development, Harbour View's design features have clearly generated value gains. The units did cost more to design, and the reserve contribution was around three times as much as required, representing an opportunity cost. Nevertheless, gains to developers have been seen in distinctly higher values and faster sales. There is also wider community support for the environmental benefits of the development's conservation of wetlands and green space, with the foreshore reserve viewed as a significant local asset.
Ministry for the Environment, 2005, and other sources

Integrated decision-making – The Harbour View development in Auckland incorporating quality urban design and providing value gains for the developer and residents.

"Regional coalitions can co-ordinate growth, streamline regulations for infill development, preserve open space and resources, and encourage compact growth in areas where services can be supplied efficiently."
Hollis, 1998

"The providers do have a great deal of technical knowledge that users don't have yet depend on; and users have a great wealth of experience and knowledge that the providers could use to do a better job."
Kernohan et al, 1992

Studies show the importance of ensuring urban design policies and initiatives are consistent between adjoining local authorities. When urban design initiatives are geographically isolated, they may not generate as many benefits as they could. Integration within each local authority is also important, so that different departments' objectives and concepts of value are met. In particular, there is a need for urban design policy to be supported by complementary economic and social policies: economic incentives, for example, may provide further encouragement for people to switch from private cars to private transport.

Research also shows the importance of ensuring urban design reflects the local context. For example, New Zealand city dwellers may reject a level of urban density that would be perfectly acceptable in some Asian and European cities. Local conditions and values need to be taken into account when making decisions about urban design: simply adopting a programme that has been successful elsewhere may not deliver benefits locally.

The Value of User Participation

Links to the 'collaboration' component of the seven Cs (Urban Design Protocol).

What is user participation?

User participation involves not only public consultation process, but also other kinds of interactive involvement in urban design such as surveys and workshops.

Key findings

User participation in urban design activity can:

- improve the fit between design and user needs
- develop a sense of community and ownership over the final result
- offer cost savings by encouraging greater user support for change.

Overview of the research

There are several important arguments in favour of user participation:

- users have essential expertise and information that can assist the design process
- realistic, more informed public expectations and understanding can develop
- people can see how their individual needs or concerns fit into the wider picture
- people may feel a stronger sense of ownership over the end result
- a stronger sense of community may develop
- the interests of people whose needs might otherwise be ignored are protected.

However, successful user participation complements, rather than replaces, professional design and technical expertise. There is no evidence that total citizen control over design – 'architecture without architects' – is successful. Design, planning and policy professionals can extend the range of possible solutions and options in ways that untrained users cannot.

Henry Sanoff, one of the world's leading proponents of user participation in design, says that users have a particular expertise which needs to be integrated into design.
Sanoff, 1978

The US Local Government Commission quotes a former mayor of Pasadena, observing that public participation has "raised the level of trust among residents – not trusting in city hall, but trusting that they own city hall".
Local Government Commission, 2004

User participation – Public consultation is one form of user participation. Source – Auckland City Council.

Sanoff said in 1990 that the public should be involved at their level of competence. They should be encouraged to participate according to their interests and what they know. Users should not be asked for information that they may not hold or which is highly speculative. Anecdotal evidence is not sufficient when resolving complex planning, policy and design issues.
Sanoff, 1990

Evidence points to the need for good management of the user participation process if it is to be effective. Otherwise the result may be gridlock, or poor outcomes reflecting narrow or vested interests at the expense of the wider public interest. A clear brief for participants, the selection of representative participants, background research and analysis, and experienced facilitation are all shown to be helpful in achieving effective user participation.

User participation – Planning workshops provide an opportunity for users to provide input into decision-making processes. Source – Auckland City Council.

Table 1: Summary of Findings about the Key Urban Design Elements

This table summarises the principal findings from the extensive survey of writings and empirical studies of urban design discussed in this report. It focuses specifically on the elements of urban design about which there are 'useful' findings. Asterisks are used to indicate the quality of the evidence surveyed: *** conclusive, ** strong, * suggestive. Anecdotal findings have been excluded.

	Economic Value Findings	Social/Cultural Value Findings	Environmental Value Findings
Local Character	▪ Attracts highly skilled workers and new economy enterprises.* ▪ Assists the promotion and 'branding' of cities and regions.* ▪ Contributes a competitive edge by providing a 'point of difference'.* ▪ Potentially adds a premium to the value of housing.*	▪ Reinforces a sense of identity among the residents of a neighbourhood.* ▪ Encourages people to become actively involved in managing their neighbourhood.* ▪ Offers choice among a wide range of distinct places and experiences.*	▪ Supports conservation of non-renewable resources.*
Connectivity	▪ Increases viability of local service shops and facilities.** ▪ Increases a site or area's accessibility, thereby enhancing land value.**	▪ Enhances natural surveillance and security.*** ▪ Encourages walking and cycling, mainly for non-work trips, leading to health benefits.** ▪ Shortens walking distances, encouraging people to walk.**	▪ Reduces vehicle emissions through fewer non-work trips.**
Density	▪ Provides land savings.*** ▪ Provides infrastructure and energy savings.** ▪ Reduces the economic cost of time allocated to mobility.** ▪ Is associated with concentration of knowledge and innovative activity in urban cores.*	▪ Is difficult to disentangle from the benefits of mixed use and other factors.** ▪ Can contribute to social cohesion.** ▪ Tends to promote health through encouraging greater physical activity.** ▪ Can be associated with lower crime and greater safety.* ▪ Enhances vitality.*	▪ Reinforces green space preservation if linked into clustered form.*** ▪ Reduces run-off from vehicles to water.*** ▪ Reduces emissions to air and atmosphere.** ▪ May conflict with micro/local green space needs.**

	Economic Value Findings	Social/Cultural Value Findings	Environmental Value Findings
Mixed Use	▪ Enhances value for those preferring a mixed use neighbourhood.*** ▪ Utilises parking and transport infrastructure more efficiently.*** ▪ Increases viability of local service shops and facilities.** ▪ Significantly lowers household expenditure on transportation.**	▪ Improves access to essential facilities and activities.*** ▪ Provides convenience.** ▪ Encourages walking and cycling, leading to health benefits.** ▪ Reduces the need to own a car.** ▪ Increases personal safety.** ▪ Can enhance social equity.*	▪ Reduces car use for local trips (but minor impact on commuting) and hence emissions.***
Adaptability	▪ Contributes to economic success over time.** ▪ Extends useful economic life by delaying the loss of vitality and functionality.*	▪ Increases diversity and duration of use for public space.*** ▪ Gives ability to resist functional obsolescence.**	▪ Supports conservation of non-renewable resources.*
High Quality Public Realm	▪ Attracts people and activity, leading to enhanced economic performance.*** ▪ Public art contributes to enhanced economic activity.**	▪ Higher participation in community and cultural activities.*** ▪ Increased use of public space.*** ▪ Gives greater sense of personal safety.** ▪ Attracts social engagement, pride and commitment to further achievements.** ▪ Public art contributes to greater community engagement with public space.**	
Integrated Decision-making	▪ Co-ordinates physical design and policy in related areas to ensure benefits of good urban design are realised or enhanced.**	▪ Encourages people to take advantage of opportunities presented by good urban design.** ▪ Provides equity of opportunity for a range of people to benefit from good urban design.*	
User Participation	▪ Makes more effective use of resources.*** ▪ Offers process cost savings by encouraging user support for positive change.**	▪ Improves fit between design and user needs.*** ▪ Develops user ownership of positive change.** ▪ Enhances sense of community.** ▪ Enhances sense of well-being.* ▪ Legitimises user interests.* ▪ Enhances democracy.*	

Appendix 1: Research Methodology

Research team

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Methodology

Before beginning their literature review, the researchers first identified the claims for urban design value set out in recent Ministry for the Environment publications:

- *People + Places + Spaces: A design guide for urban New Zealand*
- *Creating Great Places to Live + Work + Play: Livable Urban Environments: process, strategy, action*
- *New Zealand Urban Design Protocol*
- *Urban Design Case Studies.*

Taking these claims as a provisional starting point, an extensive body of overseas and (where possible) New Zealand literature was examined. The aim was to establish what sort of evidence the literature provided to support or disprove these claims. Literature reviewers looked specifically for links between urban design and economic, social/cultural and environmental outcomes, and gave priority to empirical evidence provided by robust scientific studies. While the published views and judgments of recognised urban design experts were taken into account, anecdotal evidence was discounted. A significant challenge was interpreting and judging the quality of the findings – for example, judging the combined impact of a group of mutually supportive findings. Evidence was ranked as conclusive, strong or suggestive (these categories are explained more fully in Table 1).

Defining the value of urban design also proved a complex task. Economic, environmental, social and cultural forms of value were considered. So too was the nature of value – whether direct or indirect, accruing to the developer or investor and/or to the community. It became clear that much of the evidence is qualitative, and does not lend itself to easy reduction to statistics, dollars or cents. It was also apparent that those involved in urban design – the public agencies that commission or evaluate it, the private sector interests who initiate and execute it, the communities who experience and judge it – all have their own perspective on the value of urban design. All these factors were considered collectively in the research study.

The researchers' report could not reflect every aspect of urban design that is currently being studied. For reasons of time, they had to be selective, focusing only on key issues of common and current interest. They found that several interesting elements – such as heritage – have not been widely researched, but are well worth further investigation. Their concentration on areas of common and current interest was also reflected in the amount of evidence they found about links between urban design and public health and safety, a particularly popular area of inquiry at the moment.

They also found that there has been relatively little systematic research into the New Zealand experience of urban design. For that reason, this report focuses largely on international research, although some illustrative New Zealand case studies are included. Conclusions that can be drawn about the value of urban design in larger and more dense cities overseas may not always be applicable to New Zealand. There is a need for more New Zealand-specific research to confirm how the same benefits can be realised here.

Further Reading

The evidence quoted or summarised in this report was sourced from the following documents. These are just some of more than 200 sources cited in the bibliography of the full report, *The Value of Urban Design*, which can be viewed on the Ministry's website: www.mfe.govt.nz.

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NZ URBAN DESIGN PROTOCOL

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Manatū Mō Te Taiao