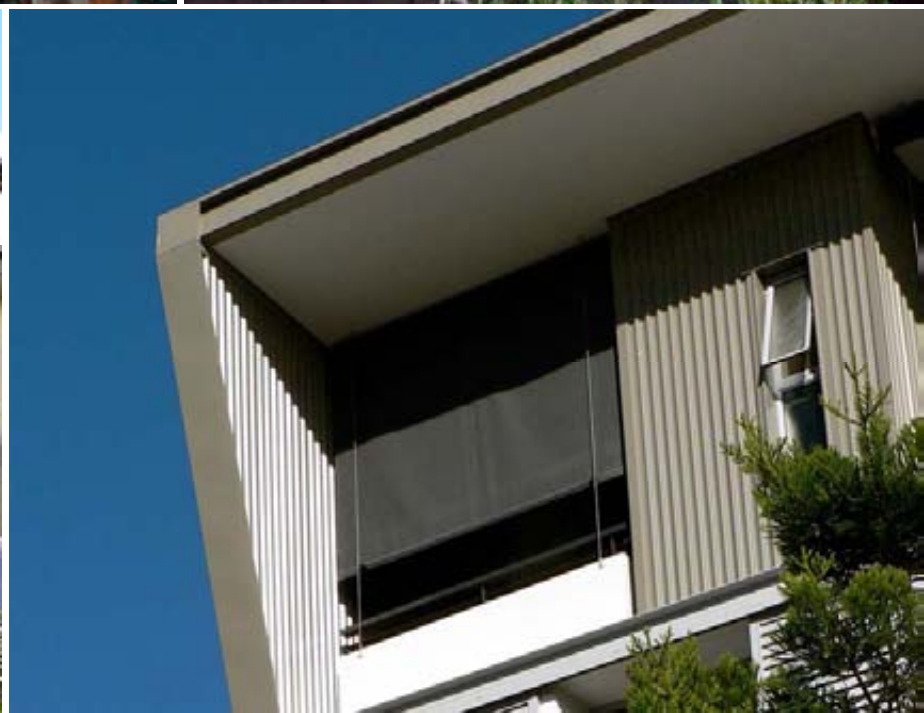


Attachment E

Subtropical Design Guidelines

Kelvin Grove Urban Village Subtropical Design Guidelines



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<i>Lot 28 at KGUU - Gall and Medek + Brisbane Housing Company</i>	<i>Lot 25 at KGUU - Donovan Hill and PDT Architects + QUT</i>
<i>Lot 10 at KGUU - Rhonan O'Brien + Brisbane Housing Company</i>	<i>Lot 18 at KGUU - Arkefield + Brisbane Housing Company</i>

Front Cover Images

1 Introduction

Brisbane's subtropical climate has had a substantial influence on the character of the city and residents. Brisbanites tend to value a sense of openness and an engagement with the natural environment. Buildings that have responded to this local climate and lifestyle choices help define the character and identity of Brisbane. Maintaining and enhancing this special character is an important step that will help to reinforce the regional identity of Brisbane.

This design guide has been produced by HASSELL for the Kelvin Grove Urban Village which is a project partnered by QUT and the Queensland Government through the Department of Housing. It draws on the research conducted by the QUT Centre for Subtropical Design, the Brisbane City Council's *New Design* brochures, the principles within the *South East Queensland Regional Plan* and outcomes from a subtropical design forum conducted by Kelvin Grove Urban Village.

1.1 GUIDELINE OVERVIEW

Brisbane's subtropical character has evolved largely as a response to the local climate, lifestyle choices, material expression, and landscape development preferences and appropriateness. These elements form the basis of the principles which set the structure for this guideline. Objectives and strategies are also provided that outline how buildings within Kelvin Grove Urban Village can address these principles.

1.2 PURPOSE

To provide a subtropical design guideline that defines the expectations for developments at Kelvin Grove Urban Village.

1.3 APPLICATION

This design guideline applies to residential and non-residential developments at Kelvin Grove Urban Village. Buildings within the Urban Village will generally be of a medium density nature. The design guidelines will be used by the Kelvin Grove Urban Village Design Review Committee to assess submissions as part of the design review process that has been established for this project. It is not a statutory document.

2 Principles

Rhoman O'Brien + Brisbane Housing Company



Lot 10 clearly displays a subtropical form through shaded balconies overlooking the street, expressed roofs and rainwater tanks, extensive planting, communal spaces, clear entries and batten fencing to encourage breezes.

A key goal for development at Kelvin Grove Urban Village is to educate the wider public about design approaches that lead to a subtropical built environment. As such, development should raise community awareness generally about climate and energy issues through an overt expression of the subtropical design agenda. All developments should achieve this overarching goal while also addressing the following principles.

This guideline focuses on four key factors that lead to a subtropical character: local climate, lifestyle choices, material expression, and landscaping preferences and appropriateness. The following principles define these four elements and set the framework from which the objectives and strategies in the guideline have been developed.

*Respond to the local **climate** to create developments that are naturally comfortable throughout the year.*

*Cater for an outdoor orientated **lifestyle** where there is a strong connection between inside and out.*

*Incorporate materials that are an overt **expression** of subtropical design – open, permeable and visually interesting.*

*Engage with nature through the incorporation of abundant **landscaping**.*

The following sections detail the objectives and strategies that flow on from the principles defined above. Development within the Urban Village should demonstrate compliance with the principles, objectives and strategies.

3 Climate

Rhonan O'Brien + Brisbane Housing Company



Lot 10 at KGUV ensures that cross ventilation of units is achieved through breezeways.

TVS Partnership + Indigo



Naturally ventilated apartments via stairs and lobbies at the Village Centre (Lot 14 KGUV).

TVS Partnership + Indigo



Adjustable sunshading devices at the Village Centre (Lot 14 KGUV).

3.1 ORIENTATION

Appropriate orientation promotes seasonal solar gain and loss, to contribute to a comfortable development.

Oriente buildings and units to minimise entry of direct summer sun to building interiors. Long active edges should ideally face north and south, notwithstanding the need to address the street and public open space.

Ensure variety in building form and detail in response to orientation.

3.2 CROSS VENTILATION AND COOLING

Capturing breezes and airflow through a development supports a naturally cooled and comfortable environment.

Ensure the building form allows for cross ventilation to be achieved. On larger sites this is possible through smaller components as opposed to one large form.

Ensure rooms are naturally ventilated with multiple openings and access to breezeways.

Provide ample large screened openings to let cool air in while keeping mosquitoes out.

Provide ceiling fans to assist with air movement in indoor and semi-outdoor locations.

Provide high ceiling heights (i.e. a minimum of 2.7m).

Note: High-rise residential buildings can achieve cross ventilation via full width units or via naturally ventilated corridors, notwithstanding the fire requirements. This has been achieved in the Village Centre.

Note: Non-residential buildings can incorporate the requirements above through mixed mode mechanical ventilation measures.

3.3 WEATHER PROTECTION AND SUNSHADING

Weather protection and sun shading helps to reduce direct solar heat and provide relief from the elements.

Ensure the exclusion of direct summer sun through fixed and adjustable sun shading devices (such as window hoods, louvres and external adjustable blinds) that clearly and overtly express the orientation.

Provide openings that are oriented to and capitalise on daylight, wind and views, yet are protected from sun and rain.

Provide roof eave overhangs to protect walls, windows and balconies.

Shade walls through the use of useable terraces and balconies.



Arkenfeld + Badcock Wright Jonti Venture

Lot 11 at KGVU takes advantage of the northern aspect with living areas flowing onto north facing balconies.



Donovan Hill and PDT Architects + OUT

Substantial overhangs and awnings on the Institute for Biomedical Health and Innovation building (Lot 25) at KGVU screens direct sunlight while allowing daylight into large windows.



Rhotan O'Brien + Brisbane Housing Company

A variety of directional sunshading clearly expresses the subtropical character.

3.4 INTERNAL ARRANGEMENTS

Internal layouts respond to solar loads to promote functional and comfortable spaces.

For residential developments only

Orientate living areas to north or north-east and non-living to west.

For non-residential developments

Orientate non-habitable uses in areas of high solar loads.

3.5 DAYLIGHT

The built form facilitates a balance between naturally lit internal spaces and appropriate levels of solar gain.

Ensure the building form, size and shading devices allow for the penetration of daylight.

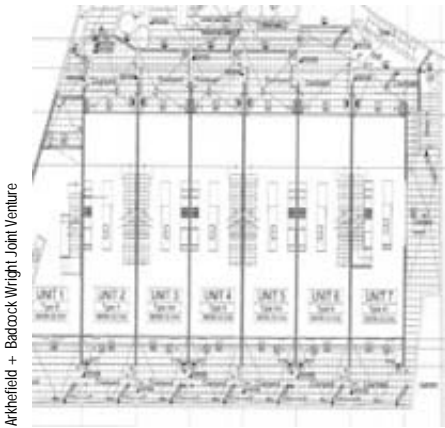
Note: The building form should be modelled to minimise solar gain/heat in non-residential buildings.

3.6 INSULATION

Insulation will promote appropriate seasonal temperatures.

Provide suitable wall and ceiling insulation to maintain heat in winter and cooler temperatures in summer.

4 Lifestyle



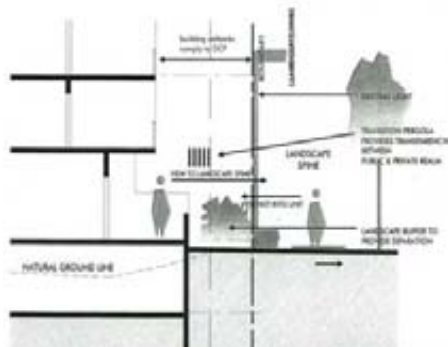
Arkiefield + Badcock Wright Joint Venture

Layouts on Lot 11 at KGVU provide seamless indoor to outdoor integration with open plan living connecting to private open spaces at each end of the units.



Arkiefield + Brisbane Housing Company

Lot 18 at KGVU addresses and engages with Kundu Park through overlooking and access. Covered balconies dominate the public elevations.



nettletribe + Pask

This diagrammatic section of the Lot 8 submission for KGVU illustrates how the building interacts with adjoining parkland while also ensuring privacy for residents.

4.1 OUTDOOR/SEMI-OUTDOOR SPACES

Providing useable outdoor/semi-outdoor spaces will support outdoor lifestyle preferences.

Ensure adequate covered balconies and terraces are orientated to take advantage of the climate.

Ensure balconies are of adequate size to accommodate outdoor uses by the occupants (eg. dining for residential and functions/recreation space for non-residential).

Provide an appropriate level of shaded outdoor spaces (such as private open space).

Ensure private outdoor/semi-outdoor spaces overlook public places such as streets and parks by being permeable and open whilst maintaining privacy.

4.2 INDOOR TO OUTDOOR INTEGRATION

Indoor to outdoor integration will support outdoor lifestyle preferences and engage with the public realm.

Provide a strong relationship and connection between building spaces and private or public open spaces.

Integrate communal open space areas with public open spaces and streets, while also clearly delineating boundaries.

For residential developments only

Ensure building design promotes seamless indoor to outdoor living.

Connect living areas directly with balcony spaces.

Provide large openings to link inside to outside.

For non-residential developments only

Provide uses that overlook and activate the streets.

Provide communal outdoor space.

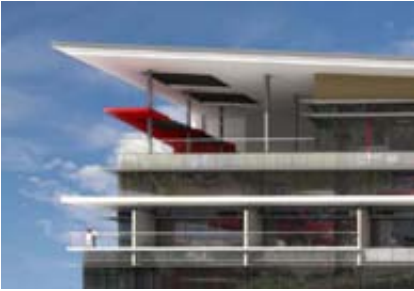
5 Expression

Call and Medek + Brisbane Housing Company



The submission for Lot 28 at KGVU provides a light form through the layering of screens, decks and building core.

Cottee Parker Architects + Climark



The materials and use of decks on the proposal for Lot 30 + 31 at KGVU ensure a permeable and open built form.

Arkefeld + Brisbane Housing Company



Lot 18 at KGVU provides a visually interesting and subtropical form through a mix of materials, textures, varied building form and screening devices. A range of sunshading techniques are shown in this photo including overhangs, louvered screens, deep balconies and blinds.

5.1 PERMEABLE AND OPEN

A permeable and open building design expresses a light subtropical character.

Ensure materials used allow for a generally permeable and open design where an observer is able to see that there are various layers of the building fabric.

Incorporate appendages (such as pergolas, screens and sunshades) to create a sense of lightness, through the use of light and shade.

5.2 TEXTURE

Texture of building materials conveys a subtropical character and creates visual interest.

Ensure the building form and finishes to walls and roofs have a level of texture and variety that creates visual interest.

5.3 ROBUST AND APPROPRIATE

Robust and appropriate design supports a lasting subtropical design.

Provide appropriate materials and colours in terms of reflectivity, durability and serviceability.

6 Landscaping

Cottee Parker Architects + Climark



Lots 30 + 31 at KGUV provides an example of how a green wall can be used to improve sunshading, privacy and amenity.

Rhonan O'Brien + Brisbane Housing Company



Lot 10 at KGUV is an example of vegetation being incorporated on verandahs and vines running up the building façade.

TMS Partnership + Indigo



Lot 14 (The Village Centre) at KGUV incorporates a planted roof and recreation area for residents over the shopping centre component of the project.

6.1 LANDSCAPE DEVELOPMENT

Appropriate landscape development reinforces a strong connection with nature while also facilitating shading and privacy outcomes.

Provide dense quantities of vegetation in an integrated and thoughtful way. This could be achieved on balconies, roofscapes and garden areas.

Use vegetation to provide shade particularly to western and eastern aspects in summer.

Incorporate landscape development in creative ways (for example through the use of vertical screens planted with vines to create 'green walls' and rooftop gardens).

Preserve existing vegetation that reinforces a subtropical and climatically responsive design.

6.2 PLANT SELECTION

Plant selection to express the local natural character, address the water conservation agenda and also contributes to variety and safety.

Provide appropriate plant species to ensure biodiversity is maintained while focusing on native plant communities.

Ensure plant selection reflects the local climatic conditions and requires minimal irrigation and/or is linked to a water reuse system.

Provide plant species that contribute sensually (eg. by attracting native wildlife, giving fragrance, or producing food).

Select material of an appropriate scale (eg. large trees against large buildings).

Use appropriate plant materials to separate private and public areas.

Ensure plants allow for sight lines to and from public and semi-public places (CPTED).

Provide food-producing landscapes.