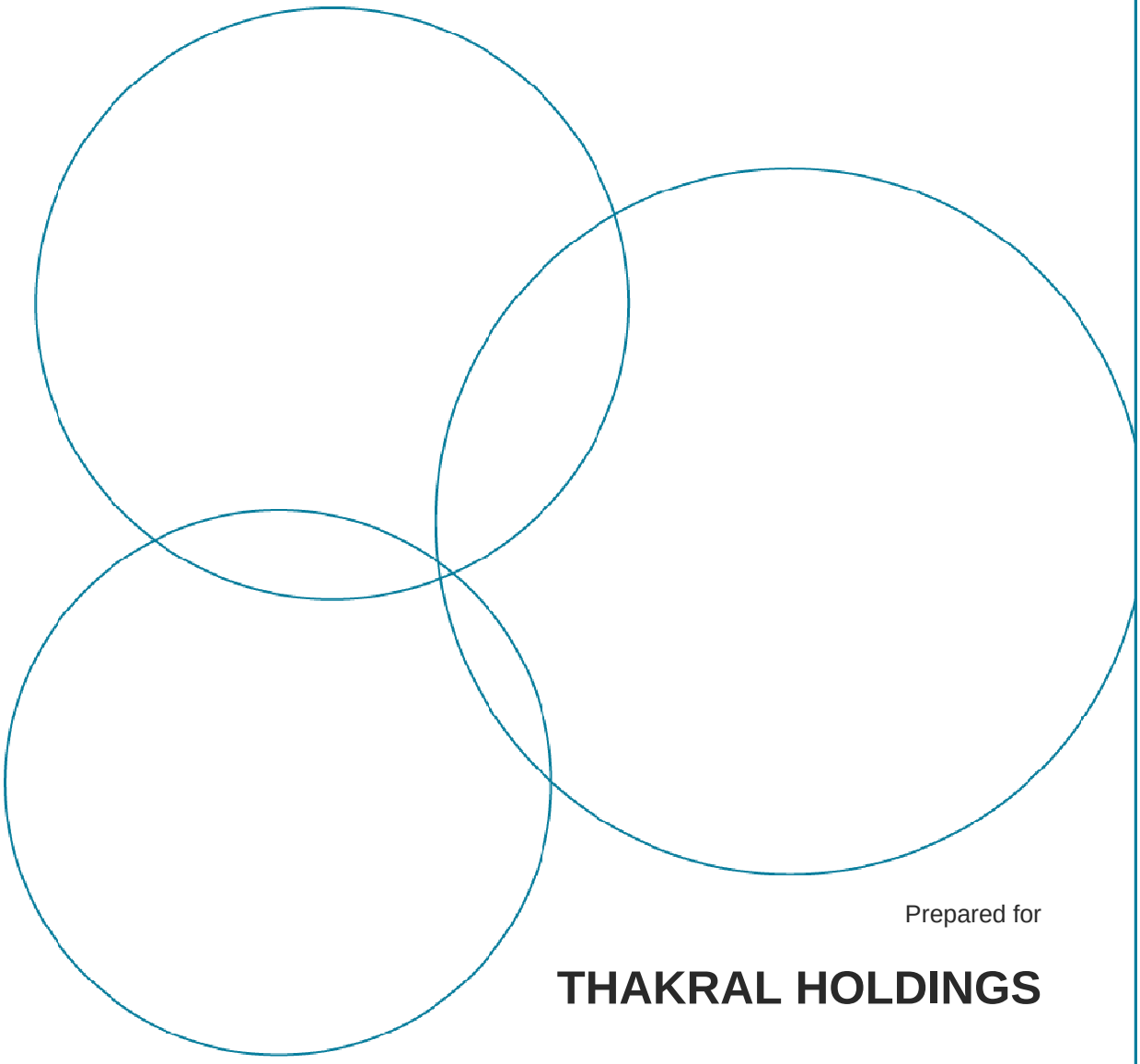
CUNDALL

27 April 2009

CityOne Sustainability Summary



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A	Sustainability Summary	27.04.09

The success and realisation of the proposed initiatives will be dependent upon the commitment of the design team, the development of the initiatives through the life of the design and also the implementation into the operation of the building. Without this undertaking the proposed targets may not be achieved

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Sustainable Design Statement

The City One development will focus on three key long term sustainability strategies:

1. Achieving a minimum 5 Green Stars
2. Achieving a high level of energy efficiency
3. Designing a future adaptable building to reduce future emissions in line with City of Sydney 2030 targets

5 Star Green Star Rating

The office building will exceed City of Sydney LEP requirement and be designed to achieve a minimum 5 Green Star rating. The rating will focus on those credits that make sound long term environmental sense and create a better indoor environment such as air quality, noise quality and operational performance.

The guiding principles of green star will also be followed for the remainder of the development including the refurbishment of Wynyard Station such that should a green star tool for precincts be released in the future the viability of rating the entire building development will be more easily assessed.

The City One office development will achieve its Green Star rating through considering the following areas of design:

- Energy Efficient HVAC systems
- Water Efficiency and Recycling through black water treatment and rainwater collection
- Indoor Environmental Quality
- Waste Management
- Green Commuter Strategies
- Green transformer strategies such as tri-generation, biomass and renewable energy technologies
- Alternative heat rejection strategies such as waste water heat rejection, open loop aquifer cooling and phase change material heat stores
- New technologies such as pedestrian power within the concourse areas
- Car parking to include provisions for electric car recharging and space for share car parking
- Bicycle storage to be reviewed – car park access may not be bicycle friendly.

Each of the above elements will be considered in terms of its environmental suitability, building applicability and economic rationality.

5 Star NABERS Energy Efficiency

A mixed use development such as this can gain great environmental enhancements through adopting a central plant strategy. As cooling, heating and power generation systems such as co or tri-generation get larger the greater their efficiencies can become, couple this with time differing peak demands and a central plant can create great efficiencies. However, the NABERS and Green Star rating systems do not currently encourage central plant solutions as it makes calculating the rating difficult.

During the next stage we will consider the viability of central plant for the development. If central plant is a more environmentally beneficial option the office building will be designed to achieve an equivalent 5 stars NABERS rating. If central plant is not viable then office building will be designed to achieve a minimum 5 Star NABERS rating. This rating would exceed the current City of Sydney LEP requirements.

In addition we will seek to work with the City of Sydney to discuss its 2030 Plan to locate Green Transformers within the city over the next 10 years and to ascertain whether City One is a suitable location and the impact of a green transformer on the development.

In the future the property industry needs to enforce mandatory disclosure for base build as well as whole build, in recognising this we will seek to install and operate a whole building carbon reporting system. It will allow tenants to address their needs to reduce their own future impacts and also report on the entire building. It creates education and competition amongst tenants to reduce their impact and therefore reduce the impact of the building as a whole rather than just as base build.

Future Adaptability

Once a building is built the focus is less on materials used and more on the operational aspects of the building, energy and water use, proximity to mass transport systems etc.

There will still be cost associated with creating a building that is future adaptable however this should minimise the future cost of adapting to market needs. For example a 6* Green Star building is typically designed with such a focus on minimising cost to meet a Day 1 outcome that its ability to adapt in the future is severally restricted and more cost ineffective.

The approach for future adaptability is to progressively invest in the right technology changes every 5 to 7 years without interrupting tenancies. Current 6* buildings can only adapt every 20 to 25 years in line with tenants and building life. In order to keep in line with the City of Sydney 2030 targets we need to create future adaptable buildings now.

Some of the future adaptability techniques to be explored at the next stage include:

- Facades that can easily retrofit operable windows for future natural ventilation without needing to replace the entire facade system
- Structurally adaptable facades that can support future shading systems, integrated photovoltaic etc
- Structural systems that can allow atriums and thermal stacks to be reconnected inter-floor
- Power infrastructure that allows future renewable energy to be plugged in without major upgrades

- Plant spatial allowances that allow for base build adaptability as well as tenant flexibility, for example car park sizing to allow a tenant to give over 2-3 car spaces to install their own waste or water recycling system

The detailed design development for this project will thoroughly review the sustainability targets for commercial office buildings and retail centres with the aim of maximising sustainability and future flexibility whilst reducing energy use and carbon/CO2 emissions.