

# Welcome

## MEET THE STARS

**Setting a New Environmental Benchmark for the Territory: NT's first Green Star rated Building**

**Friday 21 August 09**

Hosted by

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State Manager for NT/QLD



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**The Territory's First Green Star Building**

# **How We Got There**

**Ben Hammond Complex  
New Office Building**



# Acknowledgments



NT LanDesign

ISAS

Lang O'Rourke



**PowerWater**



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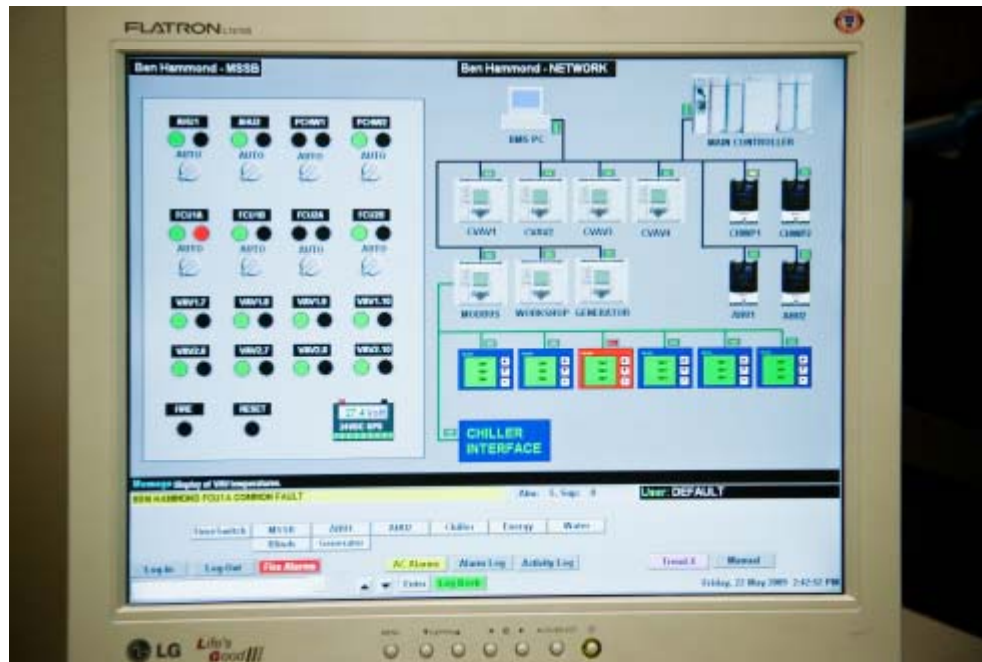
# Outline

- Design Features
- Points Summary
- Challenges

# Design Features

- Monitor and Manage
- Improved Cooling and Ventilation
- Improved Lighting
- Reduced Water Use
- More Transport Options
- Better Materials

# Building Management System



- Monitor Performance
- Manage Components and Performance

# Design Features

- Monitor and Manage

Improved Cooling and Ventilation

Improved Lighting

Reduced Water Use

More Transport Options

Better Materials



# Improved Cooling & Ventilation

1. Reduced Heat Gain
2. Cooling and Ventilation System

# Improved Cooling & Ventilation

## 1. Reducing Heat Gain



- Glazing
- Facades
- Shading

# Improved Cooling & Ventilation

## 2. Cooling and Ventilation System



- Air Cooled Chilled Water System
- Thermal Comfort
- Internal Air Quality
- Tenant Exhaust Riser

# Design Features

- Monitor and Manage
- Improved Cooling and Ventilation

Improved Lighting

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Better Materials

# Improved Lighting Design

1. Building Layout
2. Smart Lighting Design

# Improved Lighting Design

## 1. Building Layout



- Floor Plan
- Windows
- Sky-lights
- Automated Blinds



# Improved Lighting Design

## 2. Smart Lighting Design



- Light Fittings
- Lighting Layout
- Switching Zones
- Smart Control

# Design Features

- Monitor and Manage
- Improved Cooling and Ventilation
- Improved Lighting

Reduced Water Use

More Transport Options  
Better Materials



# Reduced Water Use



- 4-6 star WELS rated fittings
- Subsoil Drip Irrigation
- No Cooling Towers
- Monitoring use throughout Building

# Design Features

- Monitor and Manage
- Improved Cooling and Ventilation
- Improved Lighting
- Reduced Water Use

More Transport Options

Better Materials

# More Transport Options

- Limited Carparks
- Cyclist Facilities
  - Bike Racks, Showers & Lockers
- Proximity to Public Transport

# Design Features

- Monitor and Manage
- Improved Cooling and Ventilation
- Improved Lighting
- Reduced Water Use
- More Transport Options

Better Materials

# Better Materials



- Minimised Formaldehyde
- Low VOC

# Points Summary

## 1. Management (6/12)

- Man-2 Commissioning Clauses
- Man-3 Commissioning Building Tuning
- Man-5 Building Users Guide
- Man-6 Environmental Management

# Points Summary

## 2. Indoor Environment Quality (15/26)

- IEQ-1 Ventilation Rates
- IEQ-2 Air Change Effectiveness
- IEQ-3 Carbon Dioxide Monitoring and Control
- IEQ-5 Daylight Glare Control
- IEQ-6 High Frequency Ballasts
- IEQ-8 External Views
- IEQ-9 Thermal Comfort

# Points Summary

## 2. Indoor Environment Quality (15/26)

- IEQ-11 Asbestos
- IEQ-13 Volatile Organic Compounds
- IEQ-14 Formaldehyde Minimisation
- IEQ-16 Tennant Exhaust Riser



# Points Summary

## 3. Energy (12/24)

- ENE-1 Energy
- ENE-2 Energy Improvement
- ENE-3 Electrical Sub-metering
- ENE-4 Tenancy Sub-metering
- ENE-5 Office Lighting Power Density
- ENE-6 Office Lighting Zoning

# Points Summary

## 4. Transport (5/11)

- TRA-1 Provision of Car Parking
- TRA-3 Cyclist Facilities
- TRA-4 Community Public Transport

# Points Summary

## 5. Materials (5/20)

- MAT-1 Recycling Waste Storage
- MAT-4 Shell and Core or Integrated Fitout

# Points Summary

## 6. Water (11/13)

- WAT-1 Occupant Amenity Potable Water Efficiency
- WAT-2 Water Meters
- WAT-3 Landscape Irrigation Water Efficiency
- WAT-4 Cooling Tower Water Consumption

# Points Summary

## 7. Land Use and Ecology (2/8)

- ECO-1 Ecological Value of Site
- ECO-2 Re-use of Land
- ECO-4 Change of Ecological Value

# Points Summary

## 8. Emissions (6/14)

- EMI-1 Refrigerant ODP
- EMI-6 Reduced flow to sewer
- EMI-7 Light Pollution
- EMI-8 Cooling Towers

# Challenges

- Documentation
- Working within a Complex
- Territory First



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# Thank you



# Our Experts



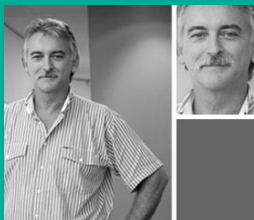
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**Ross Connolly- Director- MKEA Architects**

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# Thank You!

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