A DIFFERENT WAY
SUSTAINABILITY INITIATIVES.

AIRAH MELBOURNE FORUM – 4 MAY 2016
PAOLO BEVILACQUA
OUR CHANGING WORLD DEMANDS A DIFFERENT WAY OF DOING THINGS.
Progressive Thinking
Challenging, creating and scaling innovation to achieve a sustainable business.

Restoring Resources
Being smarter, more efficient, and ultimately regenerating the resources we use.

People Focused
Inspiring and empowering our people and communities to lead better, healthier lives.
Progressive Thinking
Challenging, creating and scaling innovation to achieve a sustainable business.

A DIFFERENT WAY

Energy & Carbon

Water

Waste

Biodiversity

Materials & Supply chain

Restoring Resources
Being smarter, more efficient, and ultimately regenerating the resources we use.

People Focused
Inspiring and empowering our people and communities to lead better, healthier lives.

Responsible Investment

Resilience & Adaptation

Innovation

Diversity & Inclusion

Affordability & Access

Skills & Leadership

Health & Wellbeing

Community Connectedness

OUR 2030 GOALS

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RESTORING RESOURCES
FAIRWATER OVERVIEW.
FAIRWATER GEOTHERMAL AC.

• Australia’s first geothermal residential masterplanned community
• Reduces heating & cooling energy use by up to 60%
• Frasers Property partnered with QPS Geothermal and Actron Air to deliver an Australian solution
FAIRWATER GEOTHERMAL AC VS SOLAR PV.

Roof Top PV

Excess of supply over demand, without storage

No effect on peak demand

Ground-Loop Geothermal

Peak air heating & cooling times

Substantial reduction in peak demand

Base household energy demand

PV energy supply

Adjusted household grid energy demand
INDUSTRIAL FACILITY GEOTHERMAL AC.
INDUSTRIAL FACILITY GEOTHERMAL AC.
INDUSTRIAL FACILITY GEOTHERMAL AC.
Key outcomes:

- Knowledge sharing and capacity building
- Performance to date
- System enhancements
- Next steps

“We really support the geothermal system that Fairwater is using. Frasers Property has made a conscious effort to create a sustainable development. The system is well hidden and barely noticeable, but makes a huge difference to the environment, our energy costs as well as our comfort.”

Resident, Fairwater
MULTI LEVEL TIMBER CONSTRUCTION.

- Multi-residential timber frame construction
- Domestic labour force and supply chain
- Commercial approach to site management, procurement, programming, and safety
WHY MULTI LEVEL TIMBER CONSTRUCTION?

- Cost savings per apartment in the order of 25%
- Brings more medium rise apartment buildings to the suburbs
- Program advantages - 11 day floor cycles, with partition walls in place
- Builds industry skills and jobs
- Encourages innovation within supply chain
- Environmental advantages

Cost comparison is based on projects managed by Frasers Property and built by external builders around Australia.
PARKVILLE ‘THE GREEN’.

Completed in April 2014
57 apartments
5 levels plus 1 car park
Frasers Property’s first 5 storey timber framed apartment building
First of its kind in Australia
Winner “Judge’s Innovation” at the Australian Timber Award
PARKVILLE ‘THE GREEN’ DESIGN.

- Pre-fabricated wall frames, roof trusses & cassette floor panels
- Clear span of structure from party walls to party walls
- Combination of rendered phenolic board, aluminium & brickwork cladding
- 10.38mm laminated glass to satisfy acoustic requirements
- External walls are wrapped with 16mm fire-rated plasterboard to achieve fire & acoustic rating
- Fire & acoustic requirements internally achieved through plasterboard
- Sprinkling allowed for a 60/60/60 rated structure, in lieu of 90/90/90

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A simple building life cycle

Some standards:
ISO 14044
EN 15978
# PARKVILLE ‘THE GREEN’ LCA RESULTS.

<table>
<thead>
<tr>
<th>The Green</th>
<th>Reference building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location</strong></td>
<td>Parkville, Victoria</td>
</tr>
<tr>
<td><strong>Storeys / GDA</strong></td>
<td>5 storeys / 3,895m²</td>
</tr>
<tr>
<td><strong>Apartments</strong></td>
<td>57</td>
</tr>
<tr>
<td><strong>NatHERS (avg)</strong></td>
<td>7 stars</td>
</tr>
<tr>
<td><strong>Main structure</strong></td>
<td>Timber on concrete foundation</td>
</tr>
<tr>
<td><strong>Building mass</strong></td>
<td>618 kg/m² GDA</td>
</tr>
</tbody>
</table>
PARKVILLE ‘THE GREEN’ LCA RESULTS.

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PARKVILLE ‘THE GREEN’ LCA RESULTS.
PARKVILLE ‘THE GREEN’ LCA RESULTS.

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INDUSTRIAL PROPERTY OPPORTUNITY.

Carbon neutral & net positive is commercially feasible now in industrial property using proven technologies.

EFFICIENCY & BUILDING FABRIC IMPROVEMENTS + SOLAR PV

$1 in additional rent = $1.30 in operational savings
GREEN STAR PERFORMANCE PORTFOLIO RATING.

Portfolio Rating
983,979 m²

<table>
<thead>
<tr>
<th>Office</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 properties</td>
<td>43 properties</td>
</tr>
<tr>
<td>214,187 m²</td>
<td>769,792 m²</td>
</tr>
</tbody>
</table>

79% of portfolio
GREEN STAR PERFORMANCE OFFICE PORTFOLIO RESULTS.

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GREEN STAR PERFORMANCE INDUSTRIAL PORTFOLIO RESULTS.
**GREEN STAR PERFORMANCE KEY OUTCOMES.**

- Better understanding of our portfolio – particularly industrial
- Improved and more informed engagement with our customers
- Reinforced key areas of focus - energy, water, monitoring, procedures
- Internal capacity building

**Office**

- 3 Green Star
- Performance v1 2015
- Good Practice

**Industrial**

- 3 Green Star
- Performance v1 2015
- Good Practice
GREEN STAR PERFORMANCE KEY OUTCOMES.

• Reduces ongoing occupancy costs
• Assists in retaining tenants
• Decreases building obsolescence
• Minimises downtime at times of vacancy
PEOPLE FOCUSED
Burrwood Brickworks - Living Building Challenge.

- Retail centre ~12,000 sqm
- Approximately 450 apartments adjoining retail
- An additional ~300 medium density dwellings
- Aged care facility sold to an international aged care provider
SUSTAINABILITY VS LIVING BUILDING CHALLENGE.
### IMPERATIVES – COLLABORATION WITH STAKEHOLDERS.

<table>
<thead>
<tr>
<th></th>
<th>Petal</th>
<th>Imperative</th>
<th>Tenant commitment / involvement</th>
<th>Frasers Property commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Place</td>
<td>Limits to growth</td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td></td>
<td>Urban Agriculture</td>
<td></td>
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<tr>
<td>3</td>
<td></td>
<td>Habitat exchange</td>
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<tr>
<td>4</td>
<td></td>
<td>Human Powered living</td>
<td></td>
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</tr>
<tr>
<td>5</td>
<td>Water</td>
<td>Net positive Water</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>Energy</td>
<td>Net positive Energy</td>
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<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>Health &amp; Happiness</td>
<td>Civilised Environment</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>8</td>
<td></td>
<td>Healthier interior environment</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>9</td>
<td></td>
<td>Biophilic Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Materials</td>
<td>Red List</td>
<td>✓</td>
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<tr>
<td>11</td>
<td></td>
<td>Embodied Carbon footprint</td>
<td></td>
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<tr>
<td>12</td>
<td></td>
<td>Responsible industry</td>
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<tr>
<td>13</td>
<td></td>
<td>Living Economy sourcing</td>
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<tr>
<td>14</td>
<td></td>
<td>Net Positive Waste</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>15</td>
<td>Equity</td>
<td>Human scale &amp; Humane places</td>
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<tr>
<td>16</td>
<td></td>
<td>Universal access to nature and place</td>
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<tr>
<td>17</td>
<td></td>
<td>Equitable investment</td>
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<tr>
<td>18</td>
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<td>Just Organisations</td>
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<tr>
<td>19</td>
<td></td>
<td>Beauty &amp; Spirit</td>
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<td></td>
</tr>
<tr>
<td>20</td>
<td>Beauty &amp; Spirit</td>
<td>Inspiration &amp; Education</td>
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THE BRICKWORKS
LIVING BUILDING CHALLENGE
DESIGN COMPETITION

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