KARRI FIRE HOUSE (BAL-40)
We can build homes to survive bushfires, so why don’t we?

Ian Weir
Houses burn trees!
**BAL-12.5**
Ember attack
radiant heat below
12.5 kW/m².

**BAL-19**
Increasing ember
attack and
windborne debris,
radiant heat
between
12.5 kW/m²
and 19 kW/m².

**BAL-29**
Increasing ember
attack and
windborne debris,
radiant heat
between 19 kW/m²
and 29 kW/m².

**BAL-40**
Increasing ember
attack and
windborne debris,
radiant heat
between 29 kW/m²
and 40 kW/m².
Exposure to
flames from fire
front likely.

**BAL-FZ**
Direct exposure to
flames, radiant
heat and embers
from the fire front.
Innovation

**BAL-12.5**
- Ember attack
- Radiant heat below 12.5 kW/m².

**BAL-19**
- Increasing ember attack and windborne debris
- Radiant heat between 12.5 kW/m² and 19 kW/m².

**BAL-29**
- Increasing ember attack and windborne debris
- Radiant heat between 19 kW/m² and 29 kW/m².

**BAL-40**
- Increasing ember attack and windborne debris
- Radiant heat between 29 kW/m² and 40 kW/m².
- Exposure to flames from fire front likely.

- Direct exposure to flames, radiant heat and embers from the fire front.
KARRI FIRE HOUSE (BAL-40)

ian weir architect | kylie feher architect
Owners: Professional fire fighter and ER Nurse
Location: Denmark WA
BAL 40
AS3959 METHOD 1
- FDI 80 (WA)
- 'FOREST'
- 15° DOWNSLOPE
Adapted from Blong R J, Sinai D and Packham C, 2000, Natural Perils in Australia and New Zealand, Swiss Reinsurance, Sydney.
‘Process Model’
Thermal Mass

ian weir architect | kylie feher architect
“Light resilience”
THREE LINES OF DEFENCE
1. SPANDEK GALVANISED STEEL CLADDING
2. FIREFLY NON-COMBUSTIBLE SARKING
3. ROCKWOOL INSULATION BATTs

BAL 40 | COASTAL | 15° SLOPE | REACTIVE SOILS | BIODIVERSE
BAL-40 VERANDA

BAL-40 MODWOOD FLAME-SHIELD

HOT DIP GALVANISED RHS JOIST

HD GALV BALUSTRADE - BEARER ASSEMBLY

HD GALV STEEL CANTILEVERED FLOOR BEAM
Structure: Prefabricated HD Galvanised Steel
Second Line of Defense: Fireproof sarking
Kylie Feher Architect
### GLAZING & SCREENS

<table>
<thead>
<tr>
<th>Glazing Base Price</th>
<th>BAL-40</th>
<th>Energy Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi Commercial - 65m2</td>
<td>Toughened</td>
<td>‘Low E’ Glass</td>
</tr>
<tr>
<td>$49,000</td>
<td>+$900</td>
<td>+$6000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fly Screens Base Price</th>
<th>BAL-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>48m2 openable glazing</td>
<td>Metal – all glass (BAL-40 facades)</td>
</tr>
<tr>
<td>$6000</td>
<td>+$6000</td>
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</table>

### VERANDAH

<table>
<thead>
<tr>
<th>Decking Timber</th>
<th>BAL-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readed pine</td>
<td>Modwood Flameshield (low maintenance)</td>
</tr>
<tr>
<td>$100/m2 installed</td>
<td>$200m2 installed</td>
</tr>
<tr>
<td>$5000</td>
<td>+$5000</td>
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<table>
<thead>
<tr>
<th>Floor joists/bearers</th>
<th>BAL-40</th>
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</thead>
<tbody>
<tr>
<td>Solid pine</td>
<td>Structural Steel RHS &amp; UB’s</td>
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<tr>
<td>Say $10,000</td>
<td>+$3000</td>
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### House (only)

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<tr>
<th></th>
<th>BAL-40 specific</th>
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<tbody>
<tr>
<td></td>
<td>$14,900 (3%)</td>
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</table>
Other Bushfire Projects

Heath House (2007)
Other Bushfire Projects

Camera Botanica (BAL-40)
Other Bushfire Projects

*Lightsite Permanent (BAL-FZ)*
Other Bushfire Projects

Pursell House (BAL-FZ)
Gaze House (BAL-19)