

## Research report summary on the direct cost of compliance with the 5 Star standard for new housing

October 2005

The Building Commission engaged Jettaree Pty Ltd to investigate, analyse and report on the cost impact on housing complying with current requirements of the 5 Star standard (5 Star house energy rating plus water measures) by seeking cost information from a representative cross-section of Victorian domestic builders.

Nine volume builders, producing 100-2000 homes per annum participated in the project.

### 1 Study methodology

Single and double storey detached houses in a variety of sizes and orientation (best/worst) were investigated. Each builder was asked to provide detailed incremental costings for compliance with the 5 Star standard, in relation to four different house designs taken from their standard range:

- First Home buyers range - 100 to 160 m<sup>2</sup> floor area
- Family homes - 160 to 250 m<sup>2</sup> floor area
- Large homes - 250 to 380 m<sup>2</sup> floor area
- Double story homes - 250 to 380 m<sup>2</sup> floor area.

Cost data were collected in a consistent format for each additional building element needed to meet the 5 Star requirements. Builder's margin and GST were not included in the costing.

Data submitted by builders were reviewed by quantity surveyors Donald Cant Watts Corke Pty Ltd to confirm that data submitted reflected incremental costs, current market rates and included realistic quantities.

### 2 Summary of overall findings

Data provided by the builders indicate that the incremental costs to comply fully with the 5 Star standard (i.e. energy rating *plus* water management elements) averaged:

- **\$2840** for single storey houses of 100 to 160 m<sup>2</sup> – average list price \$118,000
- **\$3450** for single storey houses of 160 to 250 m<sup>2</sup> – average list price \$150,000
- **\$3950** for single storey houses of 250 to 380 m<sup>2</sup> – average list price \$209,000
- **\$5910** for double storey houses of 250 to 380 m<sup>2</sup> – average list price \$311,000.

Incremental compliance cost increases average **2.1% to 2.4%** for best case orientations and **2.4% to 3%** for worst case orientations for the range of house designs studied.

### **3 Cost of water measures**

Costs for supply and installation of a compliant solar hot water unit ranged from \$1800 to \$2700 (average \$2250).

Costs for installation of a compliant rain water tank ranged from \$1010 to \$3130 (average \$2070).

These costs relate to a portion of the total costs highlighted in Section 2.

### **4 Cost of achieving 5 Star energy rating**

Average incremental costs to achieve the 5 Star House Energy Rating [*excluding water measures*] was assessed at:

- **\$770** for houses of 100 to 160 m<sup>2</sup>
- **\$1380** for houses of 160 to 250 m<sup>2</sup>
- **\$1880** for houses of 250 to 380 m<sup>2</sup>
- **\$3840** for houses of 250 to 380 m<sup>2</sup>.

### **5 The Victorian housing market**

To further put these incremental compliance costs for 5 Star into perspective:

- The average *size* of new houses in Victoria is currently **250 m<sup>2</sup>**
- Average *cost* of new houses in Victoria is **\$230,000**
- Average *land cost* for new Victorian homes is **\$120,000**.

Therefore an average house-and-land package costs \$350,000.

Direct compliance costs with the 5 Star standard for an average 250m<sup>2</sup> house are \$3,500 for energy *plus* water measures. This equates to 1.5% the cost of the average new house, or 1% of the cost of the average new house-and-land package.

Direct cost to achieve the 5 Star House Energy Rating for the average 250m<sup>2</sup> Victorian house is \$1,500; equivalent to 0.6% the cost of the average new house, or 0.4% of the cost of the average house-and-land package.

### **6 Conclusion**

Independent research confirms that the 5 Star standard for new housing in Victoria, including both energy efficiency and water conservation measures, adds a direct cost of only 2% to the cost of building.