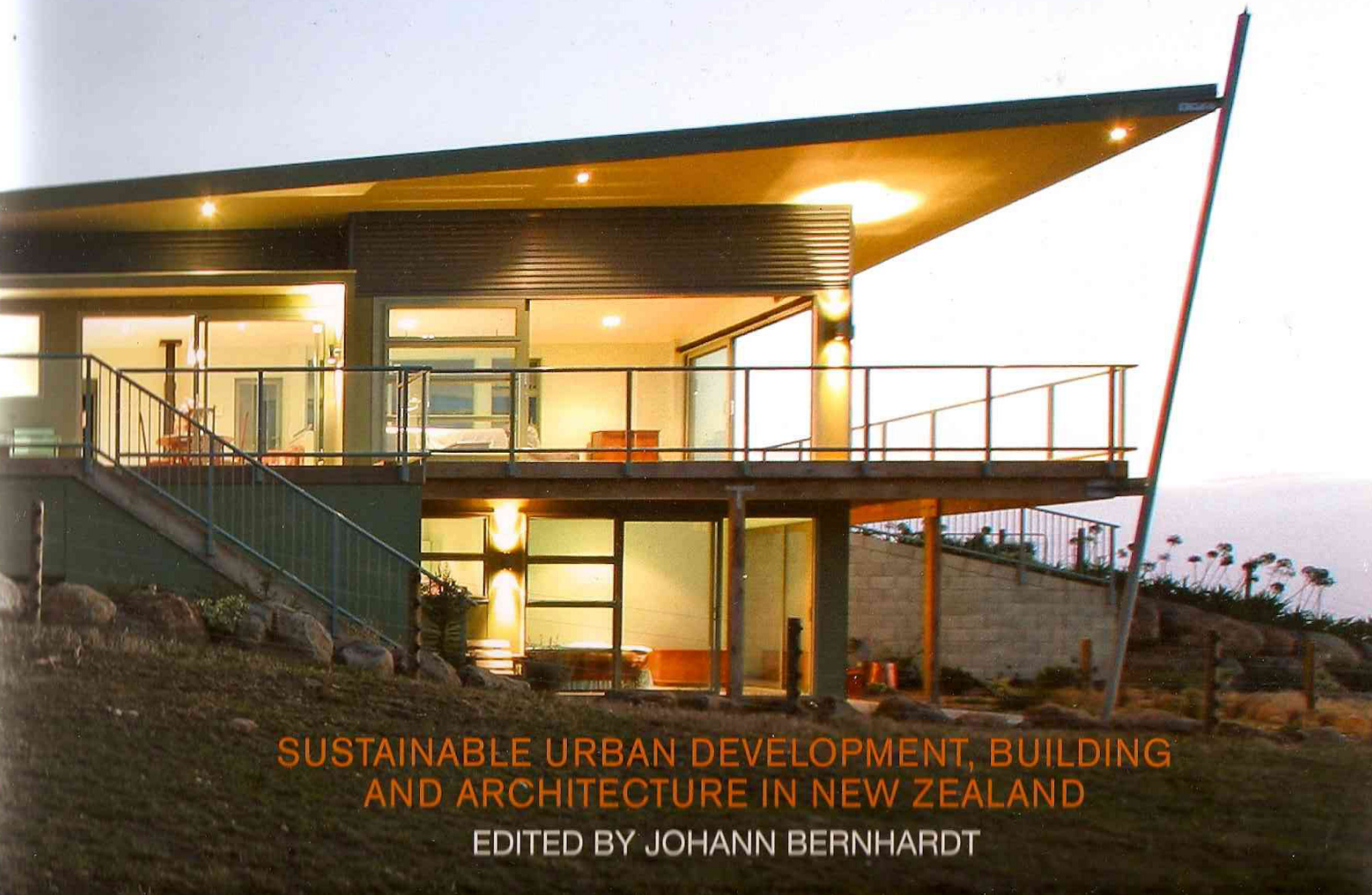


A DEEPER SHADE OF  
**GREEN**



SUSTAINABLE URBAN DEVELOPMENT, BUILDING  
AND ARCHITECTURE IN NEW ZEALAND

EDITED BY JOHANN BERNHARDT

## POWERED LIVING Suburban residence

### LOCATION:

Laval Heights, Nelson

### COMPLETION:

2004

### DESIGN:

Powered Living

### KEY DEMANDS OF BRIEF:

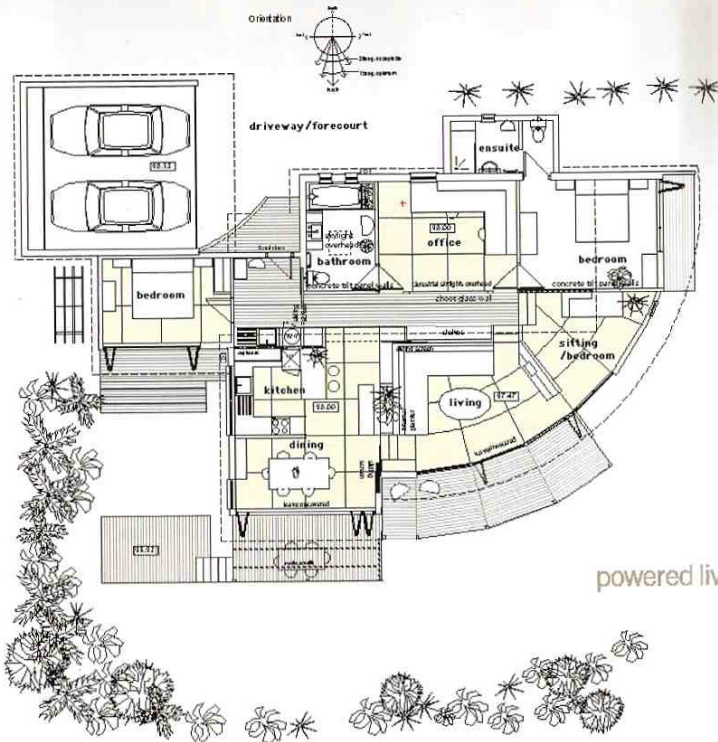
- Create a house with minimal environmental impact that looks good
- Adaptation of the Powered Living 'Concept House', a pre-established (patented) design for a passive solar house adapted to the New Zealand climate that is relatively cost-effective to build
- The house should be interesting enough to generate positive reactions in the mainstream public

### KEY SUSTAINABILITY FEATURES:

- Most important focus of all design/technical elements is the overall passive solar design of the house to absolutely minimise the need for space heating and cooling
- Room arrangement, roof shape, glazing distribution and the relationship between all elements considered in terms of (solar) heat gain/loss and airflow
- Clerestory roof to direct sunlight to rear of house and for passive ventilation
- Above code requirements of insulation to the entire shell of the house including subslab and perimeters
- Thermally broken aluminium window frames and double-glazing
- Exposed coloured concrete floor and one central concrete wall to provide some mass material for heat storage/temperature regulation
- Solar water heating
- Rainwater collection and water-saving devices
- All lighting/electrical appliances selected for energy efficiency
- All building materials selected for minimal environmental impact

### PERFORMANCE:

- Interior temperature remains consistent between 16 – 25 °C – no back-up heating required for the last 4 years
- Solar heating provides 90% of hot water needs
- Rainwater collection in combination with water saving devices provides around 60% of water use



Thermal mass exposed



