

NEW HOUSE ON MATARAWA GROVE, WAIRARAPA
FOR *(name of private client)*

OUTLINE SPECIFICATION

For indicative costing _ 18 DECEMBER 2007 _ JLA DESIGN

SUMMARY

The proposed dwelling is a new structure on a rural property. On the property there is already in existence a large planted olive grove, a small two-storey dwelling (that is to become the secondary guest accommodation), and utility sheds. There are services including water, power and telecommunications already on the property.

The client has requested a simple design for a modestly sized and price house, constructed from renewable, natural materials. The dwelling should be built sustainably, have low operating costs and energy requirements, and accentuate the features of the site including the views – particularly the Tararua and Rimutaka Mountains, the Waiohine River and the large totara trees. It should be easy to maintain and suitable for the client as she grows older, with requirements for potential mobility issues in the future considered.

The new house is to be built on a nearly flat site in the south-west corner of the property that is currently open field. Existing large totara trees around the perimeter of this field have been taken into consideration in the design and will remain. Despite the existing trees the site is exposed to very high winds, particularly the prevailing north-westerly. Construction therefore must comply with appropriate wind zone regulations. The site looks out over the Waiohine River to the south-west and backs on to the river escarpment.

The house will be of light-weight timber construction, and will be built as a “relocatable” structure. Council requires that any structure built within 40metres of a river escarpment must be able to be relocated. The dwelling will set back the mandatory 20metres from the escarpment required for a relocatable dwelling.

The suspended timber floor will be well insulated, with floor finishes to be timber floorboards in the main north-facing living areas and hall/gallery, carpet in the south-facing snug room and bedrooms, and tile in bathrooms and laundry/mudroom. All walls will be timber frame insulated with polyester batts to well above code requirements. External cladding will be a combination of macrocarpa weatherboards (oiled/sealed to a natural finish), and stained plywood. Internal wall finishes will be predominantly painted plasterboard with tiles in the bathrooms / wet areas.

The skillion roof is to be clad in Coloursteel (colour/profile to be decided). Ceilings and soffits will be a combination of stained plygroove (t&g look) and plywood, with the ceilings on the underside of the second storey to be painted gib. Eaves will extend at least 800mm on the north and west sides of the house to provide shading, and 600-700mm on other sides. The second storey cantilevers out over the south patio, providing shading to the snug room from intense afternoon summer sun. Timber slats attached to the underside of the cantilevered second storey extend to form a pergola for additional shading and cover to the outdoor living space.

The overriding objective is that the house is built in a sustainable manner and act as a passive heating and cooling device, utilizing the sun and natural air currents to maintain a consistent and comfortable living environment year-round. The major side benefits of this should be savings in energy and less use of other fuels for heating and cooling. As the house must be relocatable and therefore does not incorporate a concrete slab for thermal mass, the integrity of the insulated thermal envelope to retain solar gain is of utmost importance. Air exchange will be provided by an HVAC system, maintaining a constant fresh-air flow whilst recycling heat. Passive ventilation will provide cooling and fresh air also.

SUMMARY OF LEVELS AND AREAS

- Levels for living wing and ground level of private wing are 0.600mm above existing ground level. First floor level is 3.300mm above existing ground level.
- Areas given below (given in square metres) are for internal areas only (not including carport, balcony, or decking) and include external wall thicknesses.

	LIVING WING	PRIVATE (GRND)	PRIVATE (FIRST)
Entry	8.49		
Living	22.58		
Dining	16.95		
Kitchen	16.31		
Hall / Gallery		11.73	
Snug / TV Rm		19.74	
Guest Bathrm		8.13	
Guest Bedrm		16.20	
Laundry / Mudrm		7.60	
Stairs and Lift		7.04	6.25
Master Bedrm			23.48
Dressing Rm / Bathrm			19.76
Total internal areas	64.33	70.44	49.49

Total internal area: 184.26 square metres

Carport:	41.32
Eaves (ground floor)	51.89
Eaves (first floor)	20.78
Total covered area:	113.99 square metres

Decking and other external:	81.30
Paving:	55.80
Total external area:	137.10 square metres

PC SUMS

- These are initial estimates only.
- Kitchen: \$33,000
- Bathroom: \$15,000 each

CONSTRUCTION

FOUNDATION

- Timber piles (treated to levels required by NZS3604 – if possible by low-toxic treatment method eg ACQ or Copper Azole, rather than CCA)
- Foundation perimeter to be decided (baseboards/block? Or leave open?)

SUBFLOOR/FLOOR

- Suspended timber floor construction (FFL 0.600m)
- LVL engineered timber I-beam joists (bearers LVL timber also?)
- Aircell foil blanket underfloor insulation stapled to underside of floor joists (overlaps taped)
- Chipboard or other appropriate interior floor lining (to be eco-friendly if possible – timber from renewable resource, bonded with low-emission phenol formaldehyde), H3 ply in kitchen and wet areas
- See interior finishes for floor finishes

WALLS

- All external and load-bearing walls to be 140mm timber frame (eco-friendly timber option such as Radiata Pinex Laserframe chemical-free framing timber)
- Internal non load-bearing walls to be 90mm timber frame (timber as above)
- Lintels to be LVL beams, particularly above bifold doors
- 100% polyester insulation such as Novatherm/Novahush (supplier: Negawatt) stapled to framing, to R-value well above building code requirements
- Bracing requirements to be confirmed by engineer
- Externally lined with plywood (see external finishes)
- Verandah posts – LVL posts rather than solid timber to prevent twisting/warping (boxed in?)

ROOF

- Skillion roof construction
- LVL engineered timber I-beam or appropriate beams
- Living/dining/kitchen area - beams to sit outside of enclosed roof structure, each pair boxed in with plywood lining (see plans)

CARPORT

- Concrete slab (at existing ground level)
- Access ramp (concrete or timber construction)
- Wall and roof to be continuation of ground level private wing structure, with thermal breaks between inside/outside structure, no insulation beyond break. Possibility to switch to more lightweight, inexpensive lining option.
- Translucent panels (corrugated plastic) to be incorporated in roof to admit light
- Utility cupboard to house gas bottles etc.

OTHER CONSIDERATIONS

- All timber to be eco-friendly option where possible – from renewable resource, low-toxic
- Any MDF/particle board or plywood to be low formaldehyde, low solvent option
- Building paper – non-plastic, non-bitumen, solvent-free variety (Duroid Ltd possible supplier)
- Any steel or metal reinforcing to be kept to a minimum. Fibreglass reinforcing possible alternative for concrete slab etc.

EXTERNAL FINISHES

WALLS

- Heart Macrocarpa weatherboards, oiled or other clear finish to prevent fungal growth etc. Weatherboards to be applied in 1200mm wide sections (see elevations). Edge/corner finishing to be decided.
- Panel cladding for first floor and parts of ground floor (see elevations) – plywood (Shadowclad ungrooved panels or similar), stained or painted (to be decided). Expressed joints, possibly with aluminium flashings.

ROOF

- Coloursteel or similar roof cladding (check for most eco-friendly option). Profile to be similar look to traditional corrugated iron.
- Soffits: Plygroove or similar, beams of living block boxed in ply, as interior.
- Gutters and downpipes – low maintenance option. Simple box profile (to be decided). Avoid PVC if possible – polypropylene?

WINDOWS AND DOORS

- Joinery to be decided. Options:
 - Aluminium (investigate recycled/recyclable option)
 - PVC (apparently better thermal properties, lighter and cheaper?)
- All glass doors and windows to be double-glazed.
- Clerestory windows (in north-facing walls) to be on automated system for ventilation control (possibly supplied by Solarhomes Ltd.)
- Skylight above shower/wc wet area in master suite – opening on automatic control system
- Bifold doors (living/dining areas) to fold back flat against walls. Look at single panel opening option in combination with bifolds.
- Front door to be selected (by client) – solid timber from renewable resource, custom/hand made, to sit in aluminium frame
- Insect screens to be fitted to all bedroom windows (retractable or removable, to be selected)

INTERNAL FITTINGS AND FINISHES

WALLS

- Gib-lined (brace-line where required – to be suggested by engineer, aqua-line in wet areas) and painted (low-VOC paint to be selected). Bathroom and ensuite wet area walls to be tiled (tiles to be selected)

FLOOR

- Living/dining/kitchen, entry and ground floor hallway: timber t&g floorboards (to be selected, possibly bamboo, or recycled hardwood)
- Snug room, bedrooms: eco-friendly wool carpet (such as Cavalier Bremworth Greentuft)
- Downstairs bathroom, laundry, upstairs dressing room and wet area: tiles (to be selected). Linings in downstairs bathroom and upstairs shower/toilet area to be suitable for wetroom requirements

CEILINGS

- Living/dining/kitchen, hallway: plygroove or similar t&g look, painted white (paint colour to be selected). Beams boxed in with plywood, oiled natural finish.
- Snug rm: gib lined and painted (colour to be selected)
- Downstairs bathroom: as Snug rm with appropriate materials for bathroom moisture requirements
- Other areas: plygroove or similar t&g look as living area

DOORS

- To be selected
- Locking cavity slider to carport (to be selected)
- Feature surface-mounted sliding doors on hallway side of stair wall, to close off snug rm and stair/lift lobby. Probably to be custom-made and covered with natural fibre wallpaper or similar. Detailing to be decided

JOINERY

- Hallway cupboards, guest bdrm w/robe, laundry/mudrm cupboards, carport storage, master bdrm free-standing w/robe, snug rm entertainment unit, low storage units in front of living rm fireplace: all to be custom-made - design/detailing to be decided, predominantly natural plywood finish (oiled), fireplace mantle totara (milled/laminated from trees on site – client)
- Kitchen to be designed
- Any customwood/plywood used to be low-formaldehyde variety

FEATURES

- Fireplace/surround (living rm): timber frame with appropriate lining, fireproofing, clad in natural stone veneer (local stone if possible). Gas-burning fireplace to be selected. Solid wood mantle and display shelving (detailing to be decided), possibly milled/laminated totara from trees removed from site (client to supply)

KITCHEN

- To be designed

BATHROOMS

- Water-efficient plumbing fittings
- Vanities etc to be selected
- Wetroom-type showers (with glass partition in downstairs bathroom) – guest bathroom shower to be tray/glass doors if wetroom shower not feasible for budget
- Extraction systems to be installed in both bathrooms
- Bath in master suite to be selected and built in to “bathing balcony”

LIFT

- Platform lift on hydraulic system to be selected. Interior of lift shaft to be completely smooth, all doors etc to sit flush with internal surface

EXTERNAL WORKS

DECKING

- Timber decking to be selected (sustainable timber)

PAVING

- Concrete pavers to be selected, or possibly poured concrete slab scored/coloured/textured to look like pavers

PLANTING

- Low maintenance local plants/grasses to be selected. Vege/herb garden to be planted by owner

STONE WALL AND BENCH SEATS

- Low stone wall, dry-stacked look (with necessary reinforcing), local stone if possible. Timber slat bench seat to be "floated" above wall in two sections (see plan, detailing to be decided)

OUTDOOR FIREPLACE AND SEAT

- Outdoor woodburning fireplace to be designed/selected, probably stacked concrete block construction or clad in stone veneer (as living rm fireplace)
- Timber bench seat to extend from fireplace, wood storage under

BATHING DECK, OUTDOOR SHOWER

- Deck outside guest bedroom to have plumbing/drainage for outdoor bath (bath to be selected, probably salvaged claw-foot tub or similar)
- Outdoor shower on wall outside laundry/mudroom

SERVICES

HOT WATER, HEATING AND VENTILATION

- Solar thermal system for hot water heating – panels to be installed on roof, either on second storey roof, or above first floor hallway. Backup water heating by gas or electricity (to be confirmed). Hot water storage tank to be in upstairs master suite utility cupboard. (System probably supplied by Negawatt Ltd)
- Underfloor heating in bathrooms and master dressing rm, possibly master bedroom (dependent on cost)
- HRV system to be installed (probably supplied by Negawatt Ltd)
- Additional heating to be decided on – possibly specifically placed panel heaters or skirting board perimeter heating
- Integrity of insulated thermal envelope of utmost importance – high levels of insulation in walls, double glazing, seals around doors, any penetration of envelope by plumbing, wiring etc to be well sealed to prevent any air exchange.
- Passive ventilation provided by opening windows – clerestory windows to be on automated control system (possibly supplied by Solarhomes Ltd)

WATER

- Grey-water recycling for irrigation (to work in with existing sump and grey-water storage – grey water recycling / sewage system on site designed with capacity for existing dwelling and new dwelling – subject to engineers report)
- Water pumped from river (existing bore pump), look into solar powered pump as backup in cases where electricity supply is cut off
- If possible all piping (hot water, potable water, waste etc) to be thermal bonded polypropylene piping rather than PVC (Aquatherm possible product)

ELECTRICAL AND TELECOMMUNICATIONS

- Services already on site
- If possible, electrical system to be designed by bio-electrician, try to consolidate all wiring/cabling in single networking cable (LAW – local area wiring system) with multi-function switch panels. Reduce wiring as much as possible to minimize mains voltage radiation and electro-pollution.
- Incorporate security system, heat/ventilation control etc in system (“Smart” electrical system (computer-based system) by Solarhomes Ltd or others (subject to cost)
- Use “bio-cable” where possible
- Use CFL or LED lighting options wherever possible