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Why Should John and Amy build a Timber Construction?

The *Novatop* system is easily integrated with existing construction methods found in South Africa.

The *Fun House* demonstrates how traditional brickwork and not-so-traditional rammed earth construction can seamlessly integrate with timber construction.

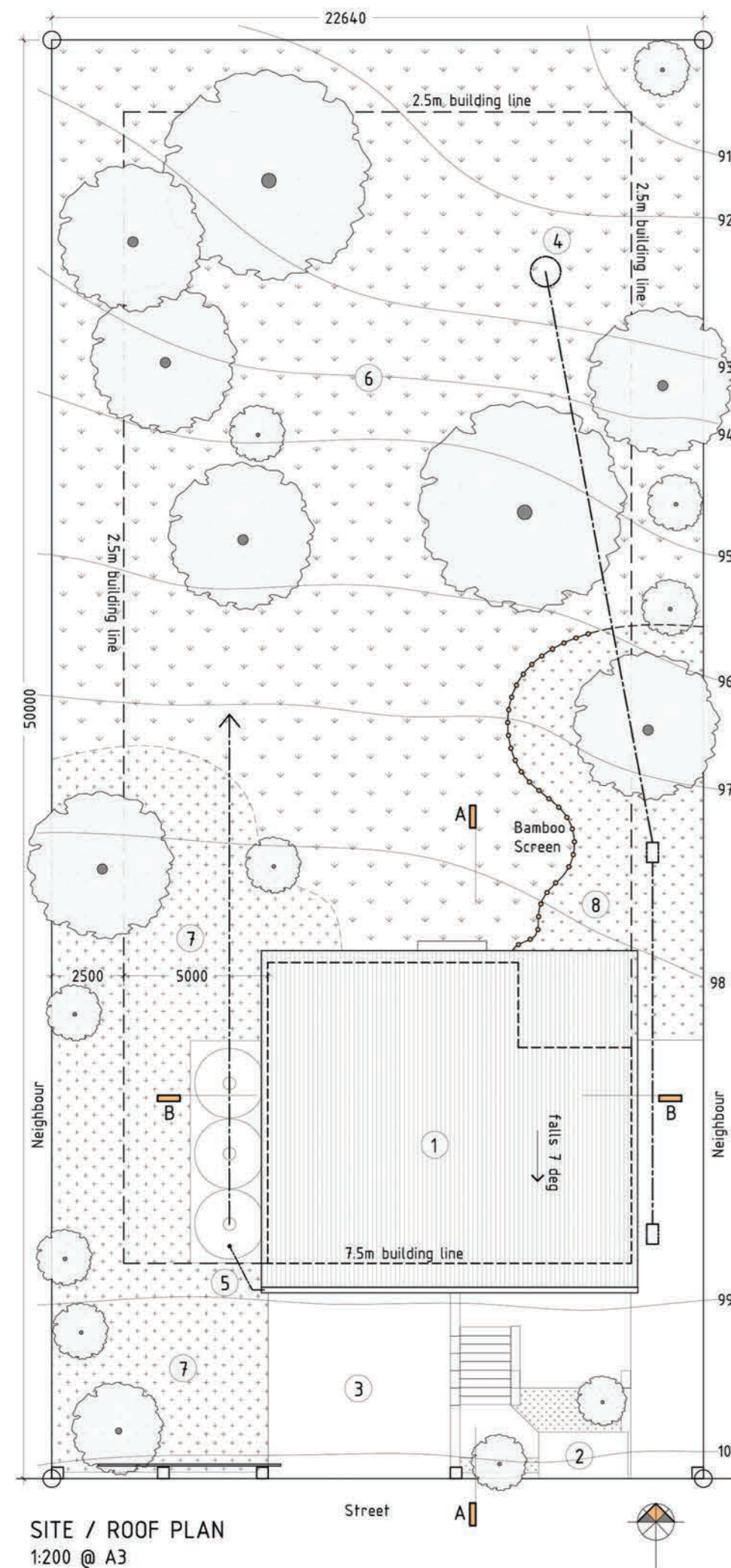
Moreover, timber is a fantastic natural Carbon sequesterer; makes for healthy interior air quality due to its breathability; and is beautiful to touch, see and smell.



FunHouse



FunHouse



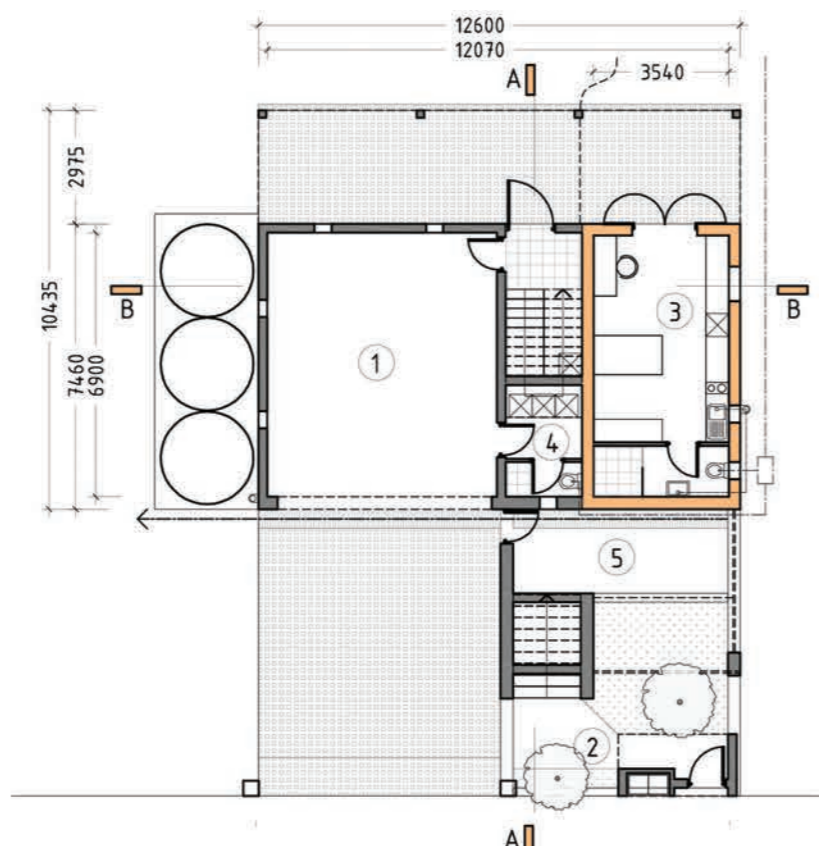
SITE PLAN
 1: Main Dwelling
 2: Pedestrian Entrance with bin recycling street station ("Kasinomics").
 3: Driveway
 4: Septic Tank
 5: 3No. 10 000 litre low profile RWTs
 6: Indigenous forest
 7: Food garden
 8: Private garden

DATA
 Total site area: 1132m² (approx. 2x national average)
 Total SQM including exterior walls: 300.2m²
 Total SQM habitable areas only: 246.2m² (approx. 60m² bigger than national house average)
 Total glazing area windows: 22.8m²
 Total glazing area doors: 24.27m²

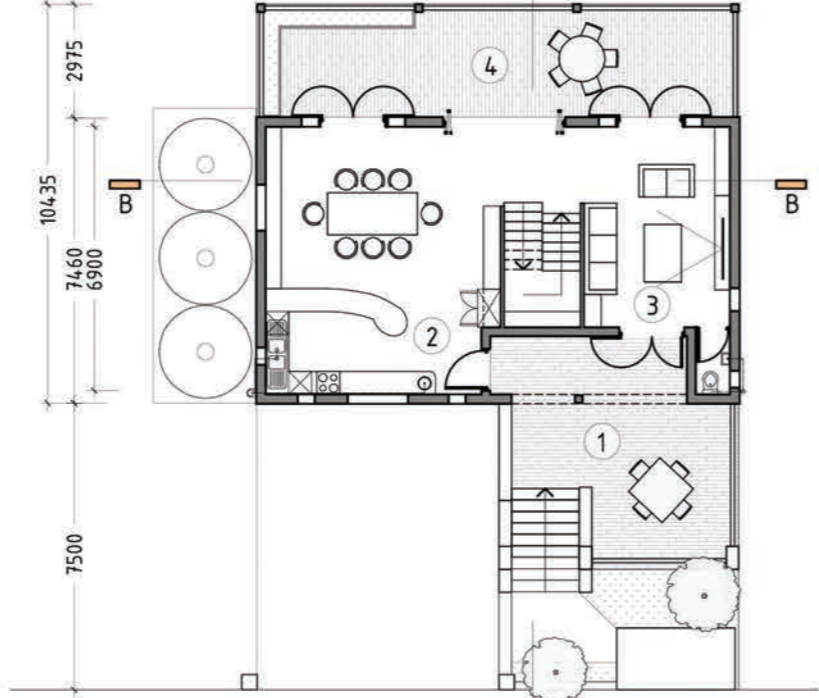
Total Glazing Area: 47.07m² or 15.7% of Total Floor Area

DIMENSIONS and LEVELS
 Basement FFL to First Floor FFL: 2975mm
 First Floor FFL to Second Floor FFL: 2975mm
 Roof Pitch: 7 degrees

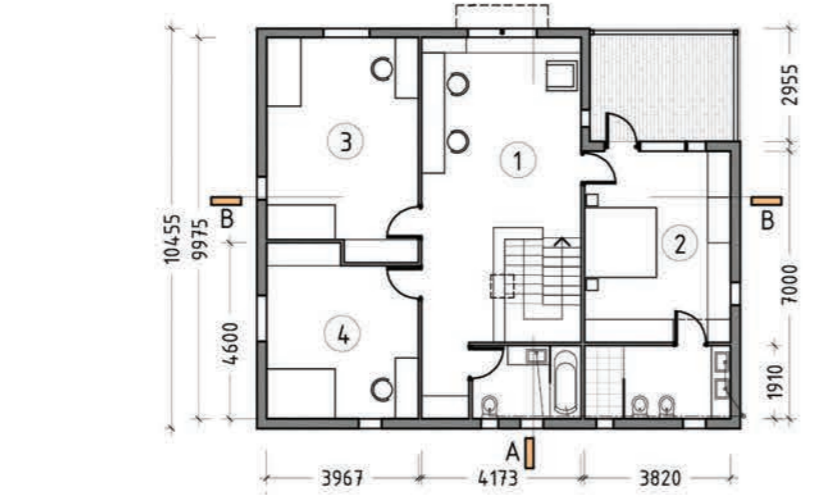
SITE / ROOF PLAN
 1:200 @ A3



BASEMENT - FFL 10 000
 1: Reclaimed brick 6m x 6.9m double garage
 2: Pedestrian entrance with bin recycling street station ("Kasinomics") and fruit trees
 3: Rammed earth 3.5m x 5.4m Lettable flat with 3.5m x 1.3m En Suite. Doubles up as home office.
 4: Laundry room + WC or Workshop / Storage
 5: General and garden storage and stone stairs.



FIRST FLOOR - FFL 12 975
 1: Veranda / Stoep overlooking street with lightweight pergola over
 2: Main entrance into Kitchen and Dining Room
 3: 3.8m x 5.25m TV / Gaming lounge with toilet
 4: North facing balcony (views) with herb planters.



SECOND FLOOR - FFL 15 950
 1: Study / play lounge
 2: 5m x 3.8m Master bedroom and 1.9m x 3.8m En Suite
 3: 3.9m x 5.3m Bedroom for two
 4: 3.9m x 4.6m Bedroom

The Fun House

Urban Design Strategy

The street is seen as an extension of the home where children play and get up to all sorts of nonsense. A strong connection to the street has been created: the home's social spaces overlook the road. Storage space beneath the deck allows for easy access to bicycles and other outdoor gear.

Site Strategy

The site's location is inland KwaZulu Natal, which has a temperate climate, but does not experience snow fall. More importantly, there is no wood borer. The neighbourhood is medium density residential: the plots are small but still larger than the national average. The site slopes down towards the north, getting gradually steeper, with indigenous forest and breath-taking views bursting from the valley below. The Fun House is set at the top of the slope, overlooking an indigenous forest while maintaining a strong connection to the street. John and Amy wanted to preserve as much forest as possible hence why they opted for 3 floors and compact planning. The house is tucked into the corner of the site, set on the 7.5m road side building line and on the 2.5m side boundary (east). On the West, the house is set 5m from building line to allow for future expansion (kitchen remains central).

Water Strategy

A single roof catches rainwater for three 10 000 litre rain water tanks. Watering the garden and flushing toilets should not have to use precious potable water. Permeable paving on the driveway results in less storm water runoff. A soak-away located in the forest deals with excess storm water, while a septic tank system reduces the load on municipality.

Energy Strategy

The Novatop system ensures that the home remains thermally comfortable throughout the year, without the need for mechanical systems. The largest openings are on the north elevation, however they are protected by overhanging projections. This should ensure a good level of light, without direct solar penetration in the interior. The west and east sides have a minimal amount of glazing, while the coldest south elevation has the smallest openings. Cross ventilation across the dwelling can be achieved, and generally there is a good distribution of light.

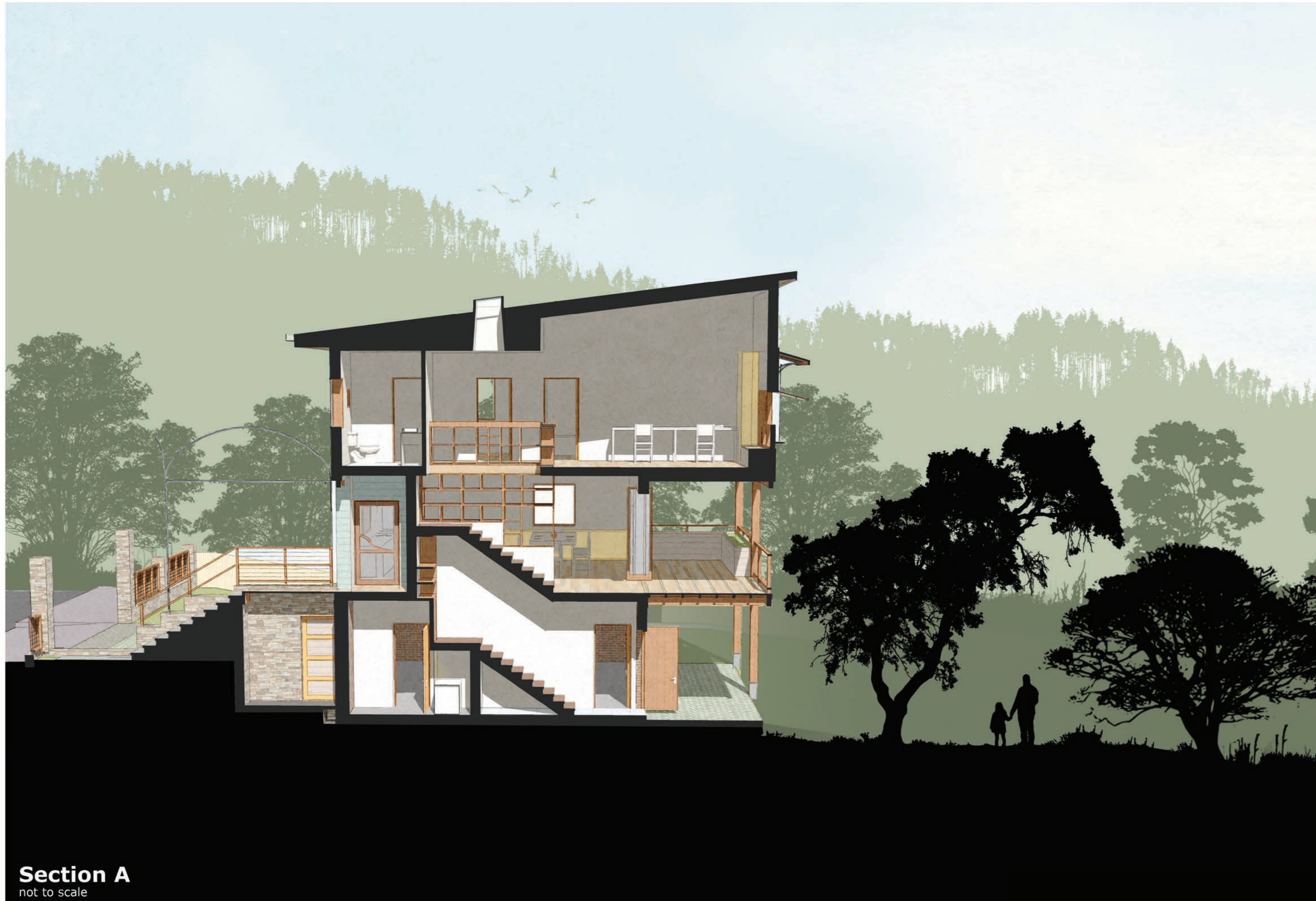
Materials Strategy

We have tried to use as many recycled resources as possible, in order to reduce cost and carbon emissions. Reclaimed bricks from a nearby demolished factory are used for the basement level walls. The home office / lettable studio is made from rammed earth - with some of the earth coming from the site itself (cut) and the rest from donations from neighbouring sites (also being cut). For the landscaping, external stairs and small retaining walls, stone has been harvested from nearby farms and vacant land. The Novatop system is used for the building envelope and internal partitions on the two upper floors.

Spatial Use

The home is compact, with the (masonry) basement level housing vehicles and the rentable studio. The (timber) first floor hosts the family zones, with the most private areas on the second storey. For now, John will use the rammed earth studio as his home office. When the children start going off to study and work, John will convert one of their bedrooms into an office and let out the rammed earth studio.





Section A
not to scale



Section A
not to scale

Site Parameters

- Not in wood borer belt
- Has indigenous forest + river
- Has gentle slope
- Cold climate
- Has soil suitable for construction

Schedule of Accommodation

Basement Level

- Double Garage
- Laundry Room / Workshop
- Home Office / Rentable Studio with En Suite

First Level

- Kitchen
- Lounge / Gaming Room
- Dining Room
- Veranda and Balcony
- WC

Second Level

- Study / Play Lounge (for kids)
- Master bedroom with En Suite + balcony
- 1 x Bedroom for one child
- 1 x Bedroom for two children
- Ablutions

Design Drivers

- Flexibility and Longevity: Spaces must always be able to double up as something else
- Working with the landscape: Grade, resources, orientation, water runoff etc
- Working with nature: Passive design & Permaculture principles
- Using renewable materials responsibly
- Small is beautiful: Compact and efficient design



North Elevation



South Elevation



East Elevation



West Elevation

Note: Elevations not to scale



Window and Door Schedule

BASEMENT LEVEL

FAR (incl. external walls): 94m²
 Win Type A: 450x450 (0.2025m²)
 Qty: 8 (2N, 2W, 3E)
 Win Type B: 900x900 (0.81m²)
 QTY: 1 (E)
 Door Type A: 1.7m x 2.1 (3.57m²)
 QTY: 1 (N)
 Total Door Glazed area: 3.57m²
Total Glazing Area: 6m² or 6.4% of Total Floor Area

FIRST FLOOR

FAR (incl. External walls): 85.7m²
 Win Type A: 450x450 (0.2025m²)
 Qty: 4 (3S, 1E)
 Win Type C: 600x1200 (0.72m²)
 QTY: 1 (E)
 Win Type D: 940x1560 (1.4664m²)
 QTY: 1 (S)
 Win Type E: 450x900 (0.405m²)
 QTY: 1 (W)
 Win Type F: 1.2mx1.2m (1.44m²)
 QTY: 1 (W)
 Window Type G: 1.6m x 0.45m (0.72m²)
 QTY: 4 (N)
 Door Type A: 1.7m x 2.1 (3.57m²) with (P)<2m
 QTY: 3 (2N, 1S) Balcony, Lounge
 Door Type B: 3.2m x 2.4 (7.68m²) with (P)=2.9m
 QTY: 1 (N) Balcony
 Door Type C: 1.1m x 2.1 (2.31m²) with (P)=5m
 QTY: 1 (E) Kitchen
 Total Window Glazed area: 7.7214m²
 Total Door Glazed area: 20.7m²
Total Glazing Area: 28.4214m²

First Floor Glazing:
 Total N: 17.7m²
 Total S: 5.6m²
 Total E: 3.2m²
 Total W: 1.845m²
 Glazing on First Floor = 33% of First Floor Area, of which 20.6% occurs on the North Elevation shaded by 2.9m projection

SECOND FLOOR

FAR (incl. ext. walls): 120.5m²
 Win Type A: 450x450 (0.2025m²)
 Qty: 3 (2S, 1E)
 Win Type C: 600x1200 (0.72m²)
 QTY: 5 (1E, 3S, 1W)
 Win Type F: 1.2mx1.2m (1.44m²)
 QTY: 2 (1N, 1W)
 Window Type G: 1.7m x 1.7m (2.89m²)
 QTY: 1 (N)
 Window Type H: 1.8m x 1.4m (2.52m²)
 QTY: 1 (N) (P)=750mm
 Roof Window: 600x600 (0.36m²)
 QTY: 1
 Total Door Glazed area: 0m²
Total Glazing Area: 12.86m² or 10.6% of Total Floor Area

ENTIRE HOUSE

Total SQM including exterior walls: 300.2m²
 Total SQM habitable areas only: 246.2m²
 Total glazing area windows: 23m²
 Total glazing area doors: 24.27m²
Total Glazing Area: 47.3m² = 15.75% of Total Floor Area
And 19.1% of habitable area only.