



# Sky farm studio

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With health driving the brief, a distinctive studio-home in rural New South Wales prioritises non-toxic materials and brims with beautiful natural features.

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**SINCE LOSING HER FATHER TO** mesothelioma (a cancer caused through exposure to asbestos) Tiffany Gee has been passionate about healthy living environments. And when the opportunity arose to build a studio-house in rural New South Wales, she was determined to select building materials that would be safe for her growing family. "Sustainability was right up there but health was primary," said Michael Leung, architect and Tiffany's husband. "She was absolutely adamant we were not putting any toxic materials in."

The studio was to be no steel shed; instead they had a modest but characterful design in mind, which attracted an incredibly passionate team. "Michael had his own ideas but was very open to suggestions. He wanted to bring out the best in everyone."

Friend Luke Wrencher had suggested hempcrete construction, which appealed to them aesthetically and ticked all of Tiffany's boxes: it's a product that is sourced locally from the Hunter Valley, is rendered with non-toxic lime and clay, and has excellent thermal insulating properties. "Tiffany really strongly wanted the healthy building, carpenter Ture Schmidt was really strong

on chunky recycled hardwood construction, Luke brought creative magic with the hemp, I was drawing and holding the project together and we were all collaborating on the details," explains Michael. The project, which took three months to design and build, was so fulfilling that the team subsequently established a hemp design-build company, Balanced Earth.

The beautifully crafted studio hovers above the ground on a timber platform (elevated to reduce mould) which extends beyond the walls as a perimeter deck. The structure uses recycled hardwood post-and-beam frames with infill panels of 200mm-thick hempcrete. The translucent awning shutters at the tops of the walls are a Japanese reference which provide light from above whilst preserving wall space for the building's future as an art studio. Broad eaves above protect the hemp walls from driving rain, important for this type of build.

The hemp panels took only two weeks to build, "a communal effort with everyone putting their love and energy into the house," said Ture. The family did a lot of the rendering themselves – lime render externally and clay inside – with friends joining in the fun. Even the children



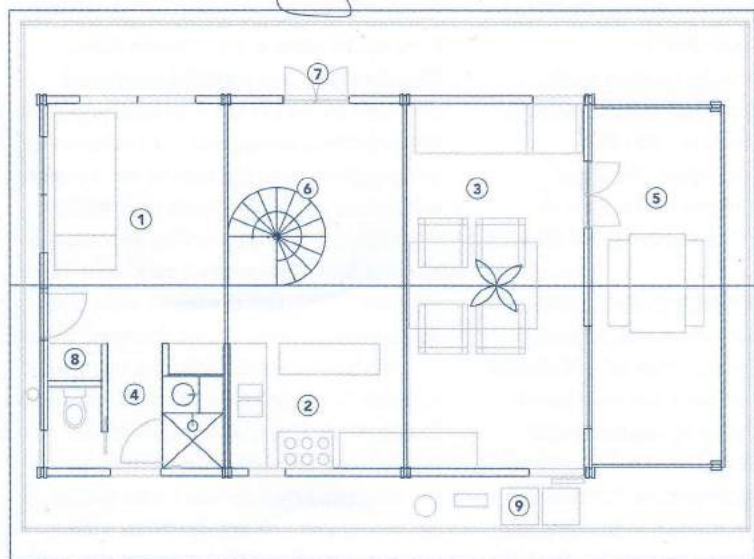
With the exception of the bathroom tucked under the mezzanine, the cottage's ground floor is one big open space containing a kitchen, living area with study spot, and a sleeping space for the kids behind the stairs.  
 NB: This photograph was taken before the banister was installed!

rendered the walls to their sleeping nook themselves. The 200mm-thick walls have breathable, natural renders and act as thermal mass; the heat lag of 21 hours is an attractive feature of hemp construction. "The hemp has been brilliant on this westerly wall. It's hot on the outside and the inside is still cool," said Tiffany.

At 60 square metres, the cottage is cosy for four but the family has adapted happily to living in close quarters with less stuff and are in no rush to upgrade. "We were only going to be in here for six months and we've been here nearly two years," said Tiffany. "This size of house is great up to the kids being 8 or 9 years because they want to be in your space. As a family home, it's really sweet to live all together. The issue is if you have hobbies. There's no space for hobbies."

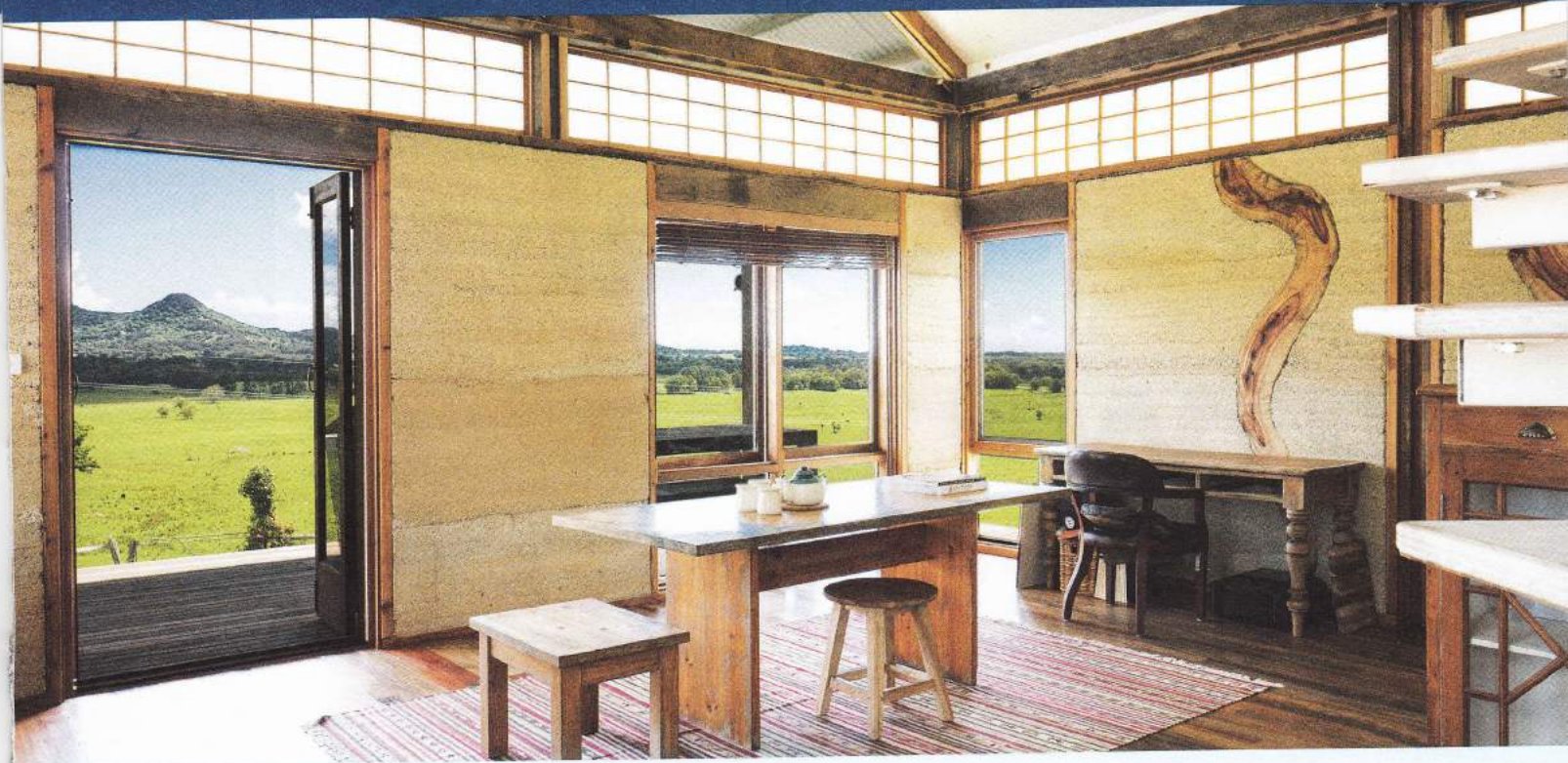
The small building is brimming with beautiful, natural details, many of which Michael and Tiffany will transpose into their main house, and after their time in the cottage they are questioning if they really want four times as much house, as originally intended. "I think the Tiny House movement is really powerful," says Michael. "It starts to strip down to what is important."

FLOOR PLAN



LEGEND

- ① bedroom with loft over
- ② kitchen
- ③ living
- ④ bathroom
- ⑤ deck/dining
- ⑥ stairs to loft/master bedroom
- ⑦ entry
- ⑧ laundry
- ⑨ services



## Sky Farm

—Specifications



The home's walls are of hempcrete inset with a whimsical tree trunk detail, and Japanese-inspired translucent shutters at the top let light flood in. Care was taken to make sure all materials and finishes were as natural as possible.

### Credits

#### DESIGNER

Michael Leung

#### BUILDER

Balanced Earth Building

#### PROJECT TYPE

New build

#### PROJECT LOCATION

Byron Bay Hinterland,  
NSW

#### COST

\$200,000

#### SIZE

House 60 m<sup>2</sup>  
Mezzanine 20 m<sup>2</sup>  
Land 12 hectares

#### BUILDING STAR RATING

6 Star

### Sustainable Features

#### PASSIVE DESIGN

- Considerable shading to east, west and northern elevations
- House takes advantage of its position on the site ridge for natural cross ventilation; awning shutters (Japanese style) for full natural ventilation on 3 sides, crafted from recycled cypress pine and polycarbonate sheet
- 200mm-thick hempcrete walls for thermal comfort.

#### WATER SAVING

- Rainwater: 16,500L stainless steel water tank for drinking water; 2 x 20,000L poly tanks for gardens and washing
- Custom built pedestal composting toilet.

#### BUILDING MATERIALS

- Hemp masonry with hemp lime render outside and clay render

- inside, from Hemp Masonry
- Recycled hardwood timber frame
- Zinalume roof sheeting with 150mm-wide gutters
- Recycled cypress pine roof trusses
- Untreated pine in stud walls (lime binder protects pine against termites)
- Factory seconds mixed hardwood timber floorboards
- Insulation: Poly batts R3.0 in roof, plus Aircell R2.0
- Recycled 50mm-thick hardwood for shelving.

#### WINDOWS & GLAZING

- Recycled cedar windows from demolition in Newrybar, northern NSW
- Frameless glass in trusses.

#### PAINTS AND FINISHES

- Rockcote Clay Decor internal

- render, natural colour
- Livos Kunos Countertop Oil, kitchen benchtops
- Livos Kunos Oil Sealer, clear, to timber floor and decorative exposed timbers
- Rockcote Repel, clear, to bathroom exposed hemp walls
- Rockcote Ecostyle, low sheen, to internal partitions
- Rockcote Ecostyle, Sealer undercoat
- Rockcote Ecostyle, ceiling
- Rockcote Ecosyle, gloss white, to stair treads.

#### LIGHTING

- 8 watt GU10 LED downlight with 60 degree beam
- LED deck lighting kit
- Bronze-coloured aluminium spotlight with 10W LED globe. Havit Lighting.