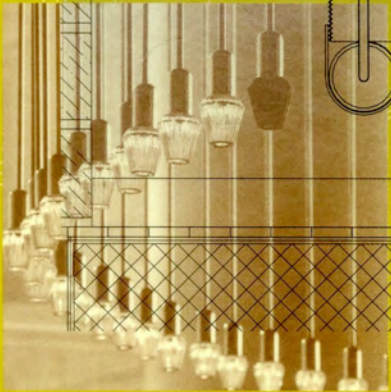


Jill Entwistle

# Detail in Contemporary Lighting Design



Free  
CD-ROM  
with all  
drawings

# PRIVATE RESIDENCE, MISSOURI

## DEREK PORTER STUDIO

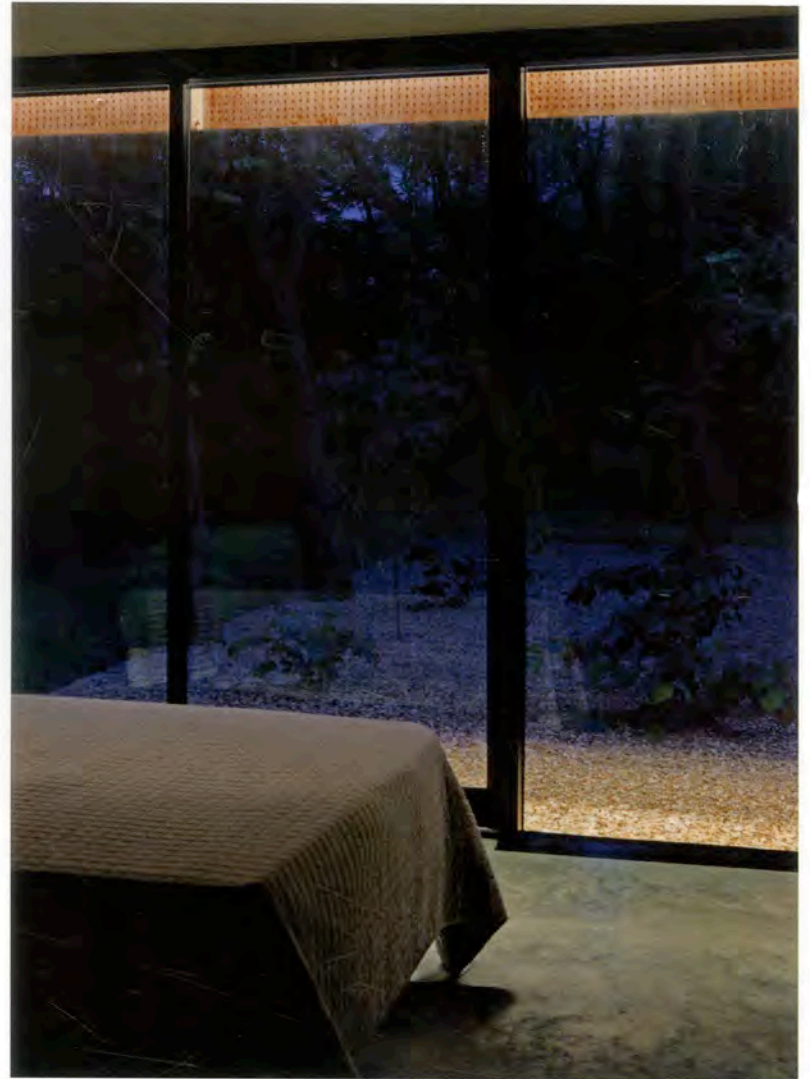
This single-storey residence is clad in full-height perforated COR-TEN steel panels, which envelop the entire exterior apart from intervals for glazing. The idea of 'skin and particle' – the outer shroud containing internal activity ('particle') – is central to the lighting design. The wash of light at the perimeter is complemented by scattered patterns of small-scale recessed accent lights inside. While the illuminance varies, the colour temperature and rendering are consistent so they blend homogeneously.

To create the lighting 'skin', a custom outdoor luminaire was developed to fit between the external metal panels and the rain screen all around the house. These fixtures light the immediate landscape, but also provide interior illumination at select areas, eroding the sense of separation between the built environment and nature.

The 1,054mm (41½in)-long luminaires are mounted at the top of the interstitial space, within the brackets of the panels that cantilever from the building's structural columns. The lamps are warm white (3000K) 14W standard output T5 fluorescent tubes, overlapping to create an even illumination. A minimum angle of rotation allows access underneath for ballast and lamp maintenance (done from above, without the need to remove the steel panels).

For exterior illumination, the light first reflects off the rear of the perforated panel, then off the white rain screen and projects through the perforated holes, bouncing and reflecting inside the cavity. This produces a soft gradation of light (brighter at the top) as the light moves downwards, blurring boundaries between interior and exterior.

Where there is a full-height window, the perforated panel becomes a short skirt at the top of the glazing. Here the light is oriented towards the rear of the perforated metal panel and reflects into the interior. From inside looking out, only the illuminated side of the panel is visible – the house side of the luminaire has a longer 'visual' shield to reduce the likelihood of seeing the fittings from normal viewing angles – whereas from the exterior the panel is always seen in shadow, or silhouette. Again this differentiation is intentional, reinforcing the skin metaphor.



### RIGHT AND OPPOSITE

The light fittings sit between perforated metal panels and the rain screen all around the top of the house, gently washing the exterior and reflecting into the interior above the glazing



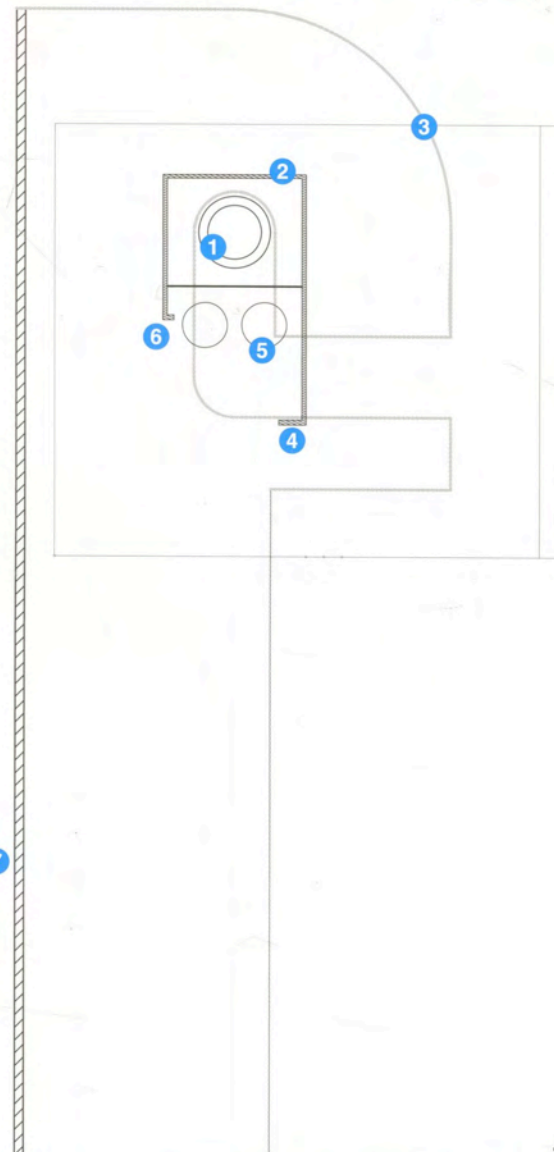


SCALE 1:300

**ABOVE**

Plan view of house

- 1 Perforated COR-TEN steel panels enveloping exterior walls
- 2 Glazing
- 3 T5 fluorescent fittings at top between steel panels and rain wall
- 4 Scattered patterns of recessed accent lighting representing the 'particle' part of the concept

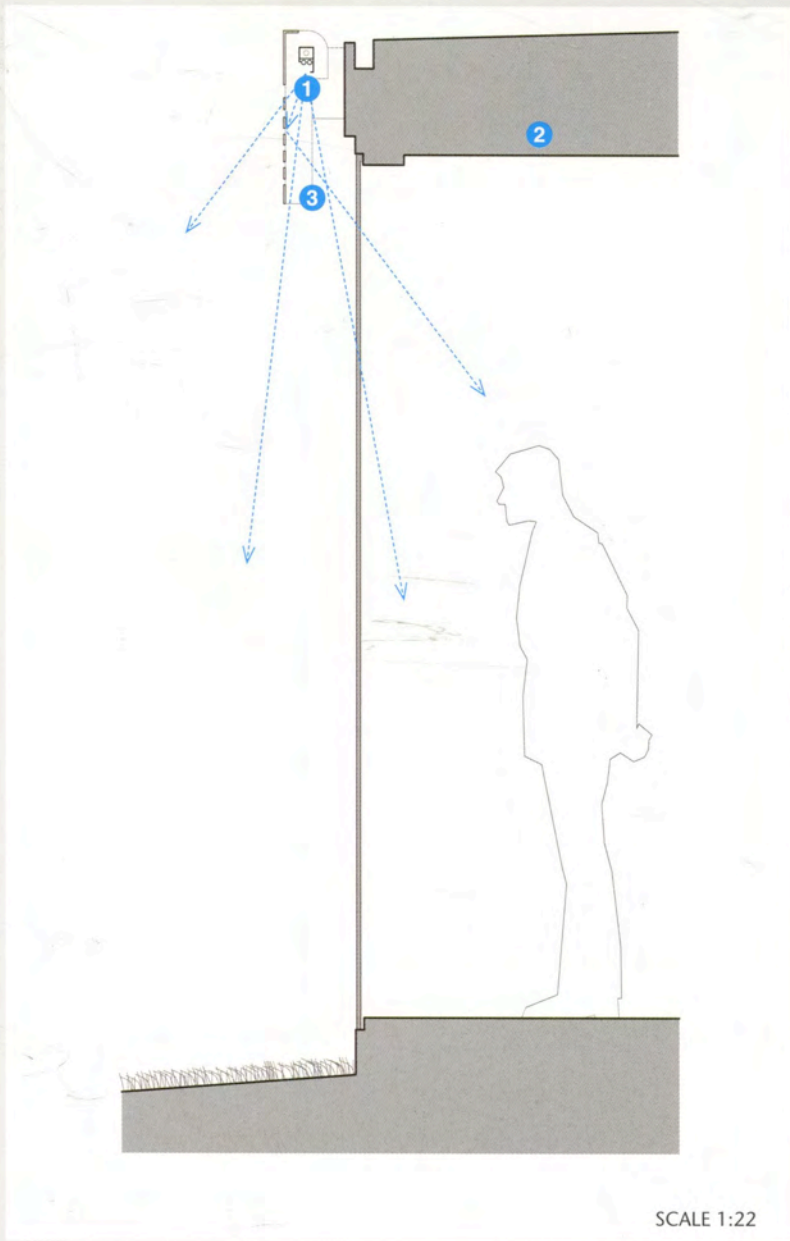


SCALE 1:2.5

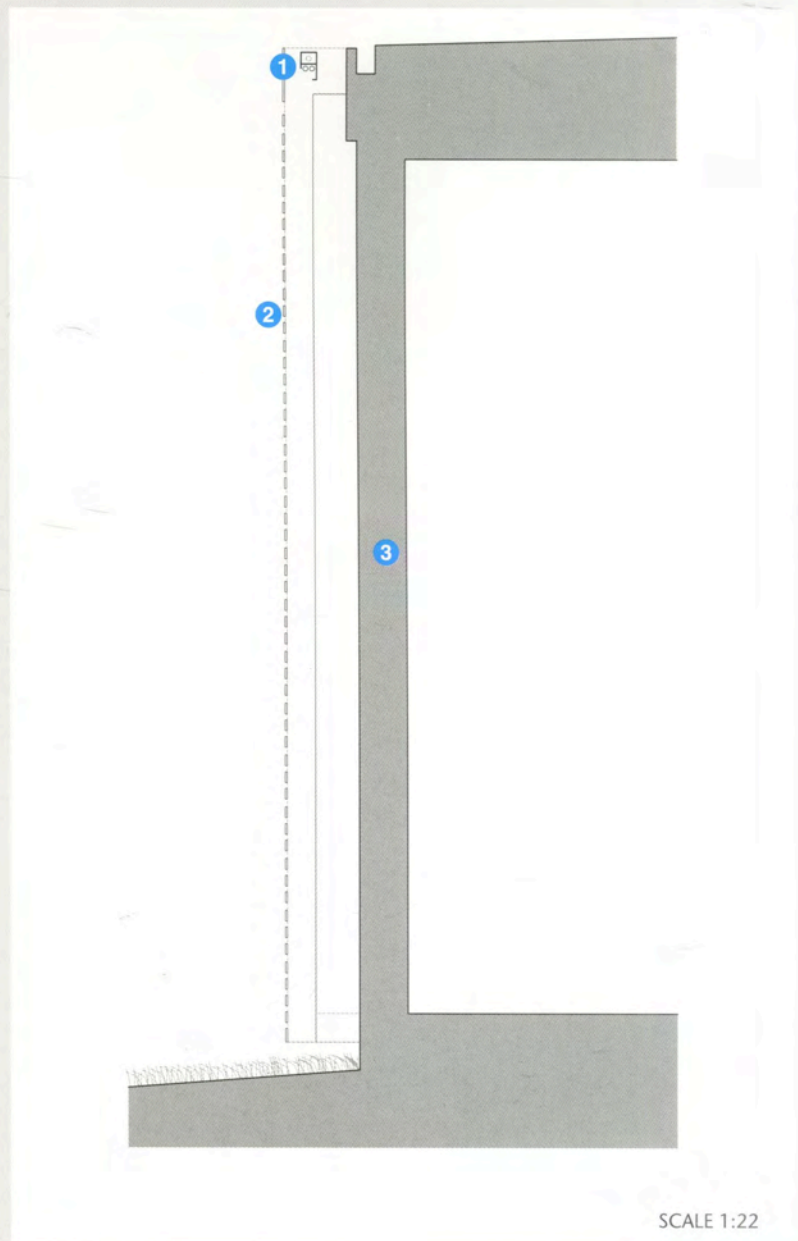
**ABOVE**

Section of luminaire

- 1 2.5cm (1in) pipe supporting metal panels
- 2 Custom sheet-metal shield
- 3 Metal perforated panel clip
- 4 Longer shield on house side to reduce likelihood of seeing the light from normal viewing angles
- 5 Single overlapping T5 fluorescent lamp
- 6 Extended skirt preventing water from touching electrical components
- 7 Steel panel



**ABOVE**  
 Section of wall showing light distribution  
 1 Single overlapping T5 fluorescent lamp  
 2 Dark ceiling in interior  
 3 The illuminated side of the perforated panel, which is viewed from the interior



**ABOVE**  
 Section of wall  
 1 Single overlapping T5 fluorescent lamp  
 2 Perforated Cor-ten steel panel (full height)  
 3 Rain screen (full height), white to maximize reflectance the entire length of the cavity