RUTH SLAVID

MICRO

VERY SMALL BUILDINGS

DESERT SEAL

Tents have advantages but also limitations. They are lightweight and provide some shelter from the elements, although this is mostly just keeping the rain out. But in an arid environment, they scarcely moderate the temperature at all.

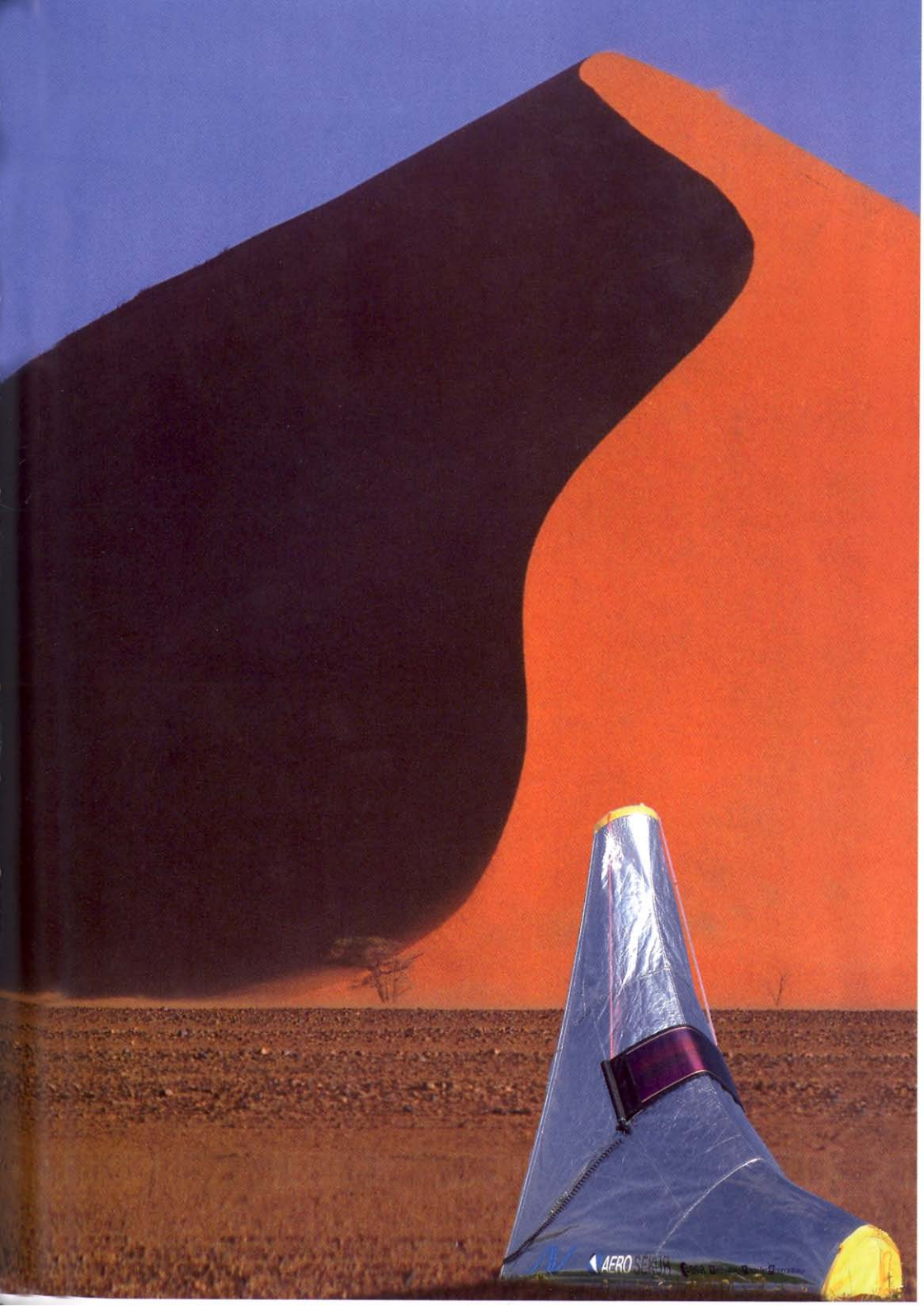
This is the issue that London- and Munich-based Architecture and Vision has addressed with its Desert Seal prototype. Intended for some of the harshest environments – it can be transported by camel and emulates the behaviour of certain reptiles – it uses some advanced technology. This is a reflection of the background of the founders of the practice – Arturo Vittori has worked as an architect at Airbus in Toulouse and Andreas Vogler researched space architecture with NASA in Houston. Having looked imaginatively at designing for the difficult environments in space, they have then translated their ideas to some of the least forgiving places on earth.

Deserts are difficult environments because they are intensely hot in the day and equally cold at night. The most extreme temperatures are experienced close to the ground – move up just 1 metre (3 feet 3 inches) or so and they become more moderate. Desert Seal exploits this gradient in its design.

It is a tent, but very different from the standard shape. It is shaped like a boomerang (the designers describe it as 'anticlastic', which is defined as 'having transverse and opposite curvatures of surface'), so that it lies along the ground and then curves up at one end to be 2.1 metres (6 feet 9 inches) tall. At the top is a fan that brings in cool air during the day and warm air at night. This has the added advantage of making it possible to enter the tent in a standing position. An advanced solar-power unit runs the fan during the day, and replenishes a battery that runs it at night.

The structure consists of two bright yellow 'air beams' of polyurethane-coated polyethylene that are inflated to provide support. The outer skin is of a high-technology lightweight silver fabric that will reflect external heat during the day, and help to retain heat inside at night.

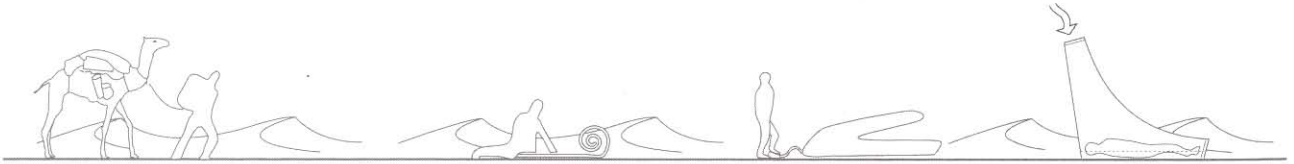
The lightweight nature of the materials allows the tent to be folded into a small space, and could mean the difference not just between comfort and discomfort but, in the extreme, between life and death.


AERO

Below: Alongside 'horses designed by committee' (as camels are sometimes known), the form of the tents seems less outlandish.

Below centre: The tents are designed for ease of transport and erection.

Bottom: The unconventional form and the fan take maximum advantage of the temperature gradients above the ground.

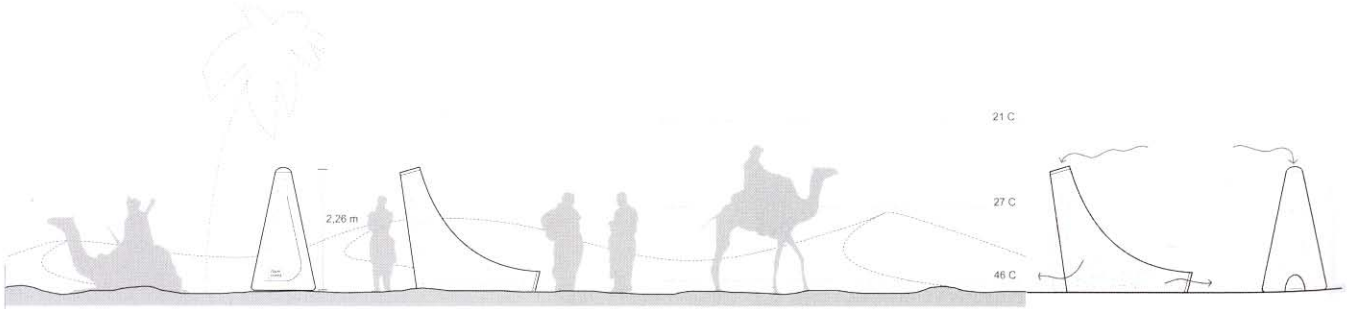


Transport

Roll-out and fixing

Development

Operation



Below: One person can stretch out comfortably in the tent.

Bottom: The tent packs up small, and can be inflated with a foot pump.