

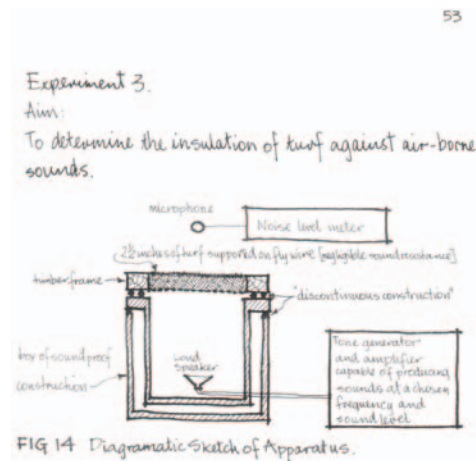
## CHAPTER 11

# Research, advocacy and capacity building

Research into green roofs has been occurring over a number of years, but, until recently there was little connection between the work of various researchers and that of the wider architecture and design professions. With hindsight, we see that the 1970s research into earth-covered buildings conducted by architect and landscape architect Sydney Baggs and his son David, also an architect, was the forerunner to green roof construction in Australia.

Another example of formative green roof research is seen in an unpublished university student report titled, 'The thermal properties of soil and the design of roof gardens', dating from 1965. This Building Science report by Ron Armstrong documents his research and controlled experiments covering a range of issues, including soil properties, temperature, water retention and evaporation. In his Experiment 3 he set out to determine the sound insulating capacity of turf. Armstrong found that there was an average noise reduction of 19 decibels, and he went on to suggest that a thicker depth of turf would provide greater insulation against airborne sound, and that the 'turf's resilience would produce definite reductions of impact noise transmission'. These research findings are similar to those of JAWS Architects, with their University of Tasmania Union Bar project, which was discussed in Chapter 2.

Another notable early work of particular interest is the planting species lists by Barbara Buchanan in her 1977 thesis, 'Roof gardens', for her Degree of Bachelor of Landscape Architecture at the University of New South Wales (Buchanan 1977). This is important in that these species



Results:

FREQUENCY in c. p. s.	NOISE LEVEL METER READINGS, in decibels.		
	box open at top	box with 2½" turf	d.B. drop.
125	58	46	12
250	60	42½	17½
500	69	41½	27½
1000	64	48¾	15¼
2000	65	43½	21½
4000	60	59½	20½
Average noise reduction			= 19 d.B.

Experiment 3, insulation of turf against airborne sounds, by Ron Armstrong