

Doing the sums on sustainability

Can we reduce our carbon footprint by saying farewell to the family pet or plundering the past for the designs of the future? Two books tackle sustainability in very different styles but come to the same conclusion: less is more.

By Eion Scott, Auckland City Council Eco Design Advisor

Top of my holiday reading pile were two recently published books on my favourite subject, sustainability. A busman's holiday some might say, but I was informed, enlightened and even entertained at times by two different takes on the challenges facing society. The first, *Time to eat the dog?*, is a surprisingly compulsive exercise in carbon crunching. The other, *Adapting Buildings and Cities for Climate Change*, presents the evidence for climate change and draws on the history of architecture to show how we can build our houses, infrastructure and communities to cope.

Time to eat the dog?

Time to eat the dog? The real guide to sustainable living by Robert and Brenda Vale is a thorough and comprehensive analysis of the carbon footprint of almost every aspect of living in the 21st century, from eating and working to clothing, sports and, of course, our pets.

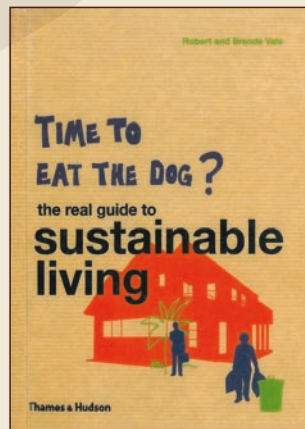
The Vales are research fellows at Victoria University School of Architecture, authors of *The autonomous house* and *Green architecture* and are well known commentators and practitioners of sustainability. They came to New Zealand after building the first grid-connected solar house in England and proceeded to show us what could, and perhaps should, be done in our environment by retrofitting their homes here.

SURPRISING FOOTPRINT STATISTICS

The Vales combine research skills with a sense of humour in this curiously titled book, which refers to their finding that a dog has about the same carbon footprint as a modest vehicle and so might be just as superfluous in an energy-poor future. Some of their other surprising conclusions include that international air travel uses less energy per person per km than riding a bike or that golf courses use less land per player than professional football fields. Not that they recommend taking up golf or flying long haul as a leisure pastime.

SIT BACK AND ENJOY THE MATHS

This book is an exercise in maths, converting the various units for measuring the sustainability of goods and services to one that can be commonly understood: the square metres of land required to support a



given resource, product or practice – the so-called carbon footprint (or more correctly, the ecological footprint).

The authors have done a lot of the legwork that can tie a person up in knots when it comes to assessing our impact on earth. That leaves the reader to either accept their computation or vicariously indulge in double-checking the numbers to see if they can be faulted. After reading half the book in this way (and not finding any errors) I gave up and sat back to be impressed by the sheer gob-smacking size of the task they took on. And, without all the brain-twisting, I began enjoying the read as well.

DO LESS AND ACHIEVE MORE

By the end I was chuckling as they drew the strands of our material existence, as defined by the area of earth we can afford to exploit – or our 'fairshare' – into a manageable plan of action for saving humankind. All that effort and analysis only to find that the plan is simple: buy less, work less (which you can now afford to do because you are buying less), do less, eat less and don't replace your dog... unless you want to face a future where the title of the book might come into play!

Time to eat the dog? The real guide to sustainable living is published by Thames & Hudson. Released in 2009, RRP \$57.95.

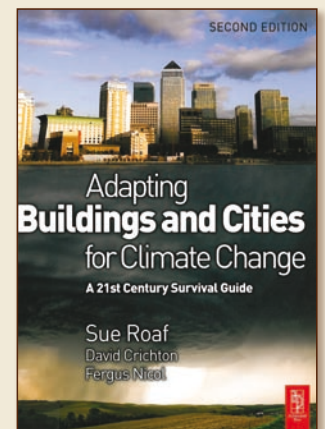
Adapting buildings and cities for climate change

Adapting buildings and cities for climate change, a 21st Century survival guide, 2nd edition is a ripping yarn of hurricanes and heat waves and how we will best weather them as the climate becomes increasingly erratic.

This is an update of the 2005 book and takes into account the worsening global weather and its impacts – floods, fires, famines and economic meltdown, which the book contends are linked. Although the dire predictions may be coming true, the book laments the lack of action by governments and individuals to do anything about it, therefore 'contributing to the destruction of our common future'.

SCIENCE, POLITICS AND ECONOMICS

The first half of the book is about global warming and the lack of political response. The graphs and summaries of the scientific evidence are detailed (perhaps overwhelmingly for the lay reader), and forcefully counter the arguments of those who would prefer to see the whole thing as a natural cycle and no reason to change our lifestyles or economic models.



There is a plea from co-author and economist David Crichton for the insurance industry to figure into premiums the vulnerability of buildings to these events. So you might see a house exposed to flooding being charged higher premiums than one that is protected. He argues that insurance is one of the few industries that does not have a vested interest in denying climate change (in fact the opposite), and can therefore force action on a global scale.

INSPIRATION FROM ASIA

The second half deals with the adaptive potential of traditional buildings and cities. It draws on author Sue Roaf's experiences in central Asia, with nomadic tribes moving from winter to summer camps, and cities such as Yazd in Iran with its wind catchers funnelling coolness to the interiors. Sue completed her PhD on this topic, then went on to install the first solar panels in England on the roof of her Oxford Ecohouse, her description of which became a best-seller. She then compares the passive design of Roman, Renaissance, 18th Century and modern houses in and around Naples, with the earlier periods coming out clearly on top.

FAULTS IN MODERN BUILDINGS

The last section deals with the problems of the modern building, office blocks in particular. The authors aim a lot of the blame for the sub-prime meltdown at the inefficiency of the modern American light-skinned and energy-inefficient tower block and shopping mall, which they say investors are now abandoning.

The fault, they say, lies with a generation of 'James Bond architects' who could not design a building that would operate without air conditioning gadgets – the 'petrolheads of building design'. They also poke a pointed stick at the way industry has hijacked the green building rating movement, with gold star design ratings requiring efficient air conditioning but not giving points for passive or mechanical ventilation... Green Building Council take note.

LEARNING FROM THE PAST

The book works best when it charts the history of building design and points to a future where archaic design technologies may become relevant again. For instance, before air conditioning, ships used to sail halfway around the world from Canada to China with their payload blocks of ice. There, wealthy citizens used to pay the price of silver, pound for pound, for the commodity, which helped cool their homes. Now there's an opportunity...

This is a great textbook for those willing to immerse themselves in the detail of a controversial and highly relevant topic – perhaps the topic of our age.

Adapting buildings and cities for climate change, a 21st Century survival guide, *2nd edition by Susan Roaf, David Crichton and Fergus Nicol is published by Architectural Press. Released in September 2009, RRP \$153.99. ♦*