

Why we can't stand the weather

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Historically speaking, climate has been a major shaper of culture. Regionally specific conditions of heat, cold, rain and wind have determined shelter, agriculture, clothing and much more. Adaptation to climate has always been based on a certain degree of predictability. Once people could be sure of wet winters and dry summers in some places and the reverse in others, tropical deluges in northern Queensland and slow steady drizzle in somewhere like England. Yes, change did happen, but slowly.

With climate change now upon us, what will happen to such assumptions and to the behaviour and the modes of living and working that go along with them?

The Intergovernmental Panel on Climate Change (IPCC) is now saying that even if we were to significantly reduce the greenhouse gas emissions that drive climate change, it would still be too late. Change is already on the way. IPCC member and chief of CSIRO's Atmospheric Division, Graeme Pearman has been outlining prospects for Australia at seminars around the country for architects and the building industry (first in Sydney, next in Brisbane). Most parts of Australia will get hotter over the next decades; there'll be more days over 35 degrees C and winter minimum temperatures will rise. Many parts of this already dry continent will get drier, and when it does rain, it will come more frequently in destructive dumps, accompanied perhaps by high wind speeds and hail storms. Over the last decade, Sydney has had something like eight 'one in a hundred year' rain deluges.

We urban dwellers (who are a growing and increasingly out-of-touch band) could respond to climate change in two ways. We could continue down the track we've been on for the last century, of attempting to block out the vagaries of climate, to work against it by creating uniform conditions of thermal comfort whatever part of the planet we occupy. Or we could decide to adapt to the changing climate by changing our notions of thermal comfort, altering our expectations and lifestyles and also, by designing buildings that can cope with widely varying weather conditions, including more frequent extreme weather events

On present trends, we'll probably go down the first path. We'll ignore the warnings and our homes will be damaged by winds, floods and hail. And in response to hotter temperatures, we'll turn up the air conditioning, install more of it, and use it more often. But this will simply increase greenhouse emissions, extending the problem of global warming even further into the future.

It's not enough to be cynical or pessimistic. To move in more sustainable directions, we need to better understand the workings of our behaviour, individually and collectively, that is, culturally. While it may feel as if climatic conditions are experienced at the purely physical level ('It's really hot, really cold, it's so humid today' etc), in fact, our disposition towards these physical sensations (within quite a wide band of conditions) is culturally inscribed. It's a question of what we've grown used to and what we're prepared to tolerate.

The way that modern industrial cultures have developed over the last century has created a disjuncture between urban dwellers and climate. We live, work, dress, travel and eat according to the expectation of standard predictable conditions. Mechanical engineers who design and maintain ventilation systems work very hard to keep buildings within an 'acceptable' thermal comfort range. In fact the ultimate aim for a fully air conditioned building is that the occupants never feel discomfort. But can you imagine what it would be like if this was actually achieved?

Maybe this is the future in store. As climatic conditions become more extreme, there may be whole cities underground or under glass, artificially ventilated, heated and cooled to such perfection that people no longer feel hot or cold, so that that 'hot' and 'cold' lose their meaning. In using vast

amounts of fossil fuel energy to create discretionary thermal comfort today, we will have so impacted upon the climate that totally controlled environments will become a necessity.

'Psychometrics', the science of measuring thermal comfort, is often used to fine tune the design and operation of air conditioned buildings. Data is fed in on modes of dress, operating hours and other variables, but what gets measured is not empirical data or neutral conditions, but cultural norms - norms that are largely unsustainable. Take office work: how it's done, the hours in which it's done, how people dress for it, and the kinds of spaces in which it's done are largely the same whether business is being conducted in the tropics or during a northern European winter. It's true that there may be minor variations, but generally, corporate culture aspires to a neutral sameness in its modes of operation and working environments. More adventurous architects and engineers are designing to deliver the desired conditions with 'mixed mode' buildings - partly air conditioned, partly naturally ventilated. But they work within the constraints of corporate workforce expectations.

Now there's a big push by manufacturers to expand the use of air conditioning in homes. We're being assaulted with marketing images of remote controlled, individually programmed, 'intelligent' home climate systems. Total micro-control is projected as the desirable norm. While today's air conditioning systems might be more energy-efficient on a per unit basis than in the past, the expansion in sales is more than cancelling out this as an environmental benefit.

To block out location-specific climatic conditions is fundamentally unsustainable on two counts: first because it takes an enormous amount of energy (mainly fossil-fuel based, thus greenhouse gas generative) to create the constant ambient conditions and second, because the holy grail of climate-neutral conditions does in fact desensitise people from the actuality of climate. Thus variable weather conditions come to be culturally regarded as intolerable. This screening-out doesn't apply only to climate, but more widely to the entire realm of the biophysical 'given'. The convenience and seemingly endless availability of electricity, water, fresh and processed foods in urban centres conceals the chancy, often perilous conditions upon which supplies depend, like availability of rainfall, sunshine, fertile soil and so on.

Our culture of economic expansion is based upon constant invention and re-invention; on building, tearing down and rebuilding; on the rise and fall of new industries, fads, styles, products and technologies. All of this frenetic energy-hungry and polluting activity has altered the earth's atmosphere and changed climate forever, pushing it into a condition of instability and uncertainty. As a result, climate has lost its innocence. Now, whenever there's a downpour we ask ourselves, 'is this evidence of climate change?' 'Is it our fault this time?' 'Is this normal?' What's normal any more anyway? Unexpected weather is rapidly becoming the norm. This itself marks a cultural shift, as yet only barely perceived, that will gather momentum as freak weather events multiply. Perhaps there's a certain poetic justice that climate is becoming more in tune with our culture of constant change.

To avoid the climate change endgame of future lives lived out entirely in cities under glass or underground, we would, on a mass scale, each need to make conscious decisions to tolerate what we currently regard as intolerable. This includes rejecting the use of air-conditioning, but would also extend to all of our energy and resource-intensive activities, which is pretty much everything we do and enjoy doing. But that's another story for another time.

The cultural change agenda being ushered in by climate change is much bigger than anyone could have imagined. For some time now, our economy has been driven by culturally inflected goods and services rather than gross material production. The astute will recognise the cultural change dimensions of climate change as an economic opportunity, but this, on the basis of a very different kind of economy.

** This article is based on a talk given by Anne-Marie Willis a director of the design consultancy, Team D/E/S, at a Sydney seminar on 'Design for a Changing Climate'. The seminar is being repeated in Brisbane at the Royal Australian Institute of Architects on 15 March 2002. amwillis@teamdes.com.au*