

# The Boiled Frog Syndrome

“A *tour de force* combining in-depth analysis of the pernicious health effects of much of our modern built environment with a passionate plea for a renaissance of perennial principles of life and architecture that can be expressed in a new built environment that is both healthy and beautiful. The book is both visionary and immensely practical, giving advice from which we can all benefit.”

David Lorimer, Project Director, Scientific and Medical Network

“In our modern world there are a number of raw nerves. Thomas Saunders touches on arguably the most important of these in his book *The Boiled Frog Syndrome*. The impact on the subtle energies of organic life from modern technologies as far apart as architecture and electricity has been brought between one set of covers for the first time. This achievement needed the broadest and sharpest of intellects, a simultaneous and detailed knowledge of those technologies combined with a deep understanding of the subtle energies of our planet, two talents rarely found in one person. This book demands the reader’s attention from first to last page, and will undoubtedly prove to be a formative and informative influence on every reader.”

Roger Coghill, Director, Coghill Research Laboratories

“Thomas Saunders’ book could not come at a more relevant moment when events remind us that we must have respect for the environment in which we live – otherwise we will cease to live. A complex, fascinating, always open-minded attempt to show us how to challenge the Establishment.”

Maureen Lipman, actress

“Thomas Saunders shows how life on Earth is part of a universal vibratory system. He takes a sober and authoritative look at the risks and proven harm accompanying neglect of the laws of this system, in the modern architectural and electromagnetic environment. He then takes us on an inspiring journey illustrating that early cultures had profound understanding of how to co-operate with natural energies, and showing how great architecture reflects the grand design of the universe. *The Boiled Frog Syndrome* is an eye-opening, life-enhancing book.”

Neville Hodgkinson, formerly medical and science correspondent to  
*The Sunday Times* and author of *Will to Be Well* and *AIDS:  
The Failure of Contemporary Society*

“This is a fascinating book. Whatever your views, prejudices or assumptions, Thomas Saunders brings new perspectives to important global environmental and design issues affecting the future of our planet. He suggests that the way we live now has, within it, the seeds of long-term corrosion. His detailed research into ‘sick building syndrome’ and the possible effects of what he describes as the electro-magnetic ‘fog’ surrounding us, shows a disturbing picture. He asks whether we are continually adjusting our lives in such a way that we are becoming complicit to irreversible change and damage.

His is a spiritual book, in a non-theological sense. He seeks to find pointers to the way people must live together in the future, if we are to survive, from the understandings, mysteries and philosophies of the ancient past. The book challenges us to care for harmony, balance and proportion (in architecture and in lifestyle) as much as we care for our material wellbeing. He explores the arcane and mathematical relationships between music and sound, numbers and structures in the natural world as well as the man-made world. He argues that the pace of change has snapped our intellectual inheritance, and he makes a powerful and intriguing case.”

Robert Rowland, former Editor of the BBC’s ‘Money Programme’ and ‘Panorama’ and Head of BBC Open University Production Centre

“Thomas Saunders’ fascinating new book offers us all a wake-up call for the way we are living our lives. He convinces us that we can play a part, however small, in changing both our personal and global environments. *The Boiled Frog Syndrome* is a book that can truly make a difference.”

Les Dennis, entertainer

“Thomas Saunders has written a remarkable book. His findings at once generate interest, concern and outrage in equal measure. He effectively links the seemingly mutually exclusive worlds of ancient arts and skills, modern sciences, humanity and design to weave a compelling story that makes these arcane subjects accessible to all. More importantly he describes in detail how people, the natural world and our technologies interact with a disturbing potency with the potential to create both harmony and harm.

Like the parabolic boiled frog, we tolerate the intolerable until it’s too late. This is one of the key messages. It’s always later than we think and unless we understand and act on the facts presented in this book, then we will deserve to enter the age of ignorance. This book is suitable for general reading and should also become a standard text for architecture and design students and other professionals. Everyone should be aware of the need to look beyond the obvious and have the ability to ask informed questions of those who shape our world. Thomas gives us the tools to do this. Those who create our environments need to be aware of the subtle (and not so subtle) forces that make the difference between places that promote wellbeing and delight, and those which act to defeat these qualities.

This book has two parts. The first introduces us to a diverse range of natural and artificial phenomena, and the effect that each has on humanity: sunspots, the sub-atomic universe, the nature of ‘sacred’ sites, radio waves, and geopathic stress are some of the many topics covered. However, Thomas is an architect and in the second part he proposes an important set of ideas related to design that are rooted in history which are important for us today. He discusses the revival and uses of low technology and natural effects to offer a gentler and more humane design response. His explanation of the mystical language of numbers and of divine harmony is important and readily understandable. Thomas is no reactionary academic; he continually seeks to explain how these quiet sciences can be used by everyone, not just the design professionals.

Not long ago, Thomas might have been burnt at the stake for his research. Thankfully we live in an enquiring world which is richer for this immensely readable and comprehensive book. After reading *The Boiled Frog Syndrome* we will never look at the world in the same way again.”

Peter Ullathorne, JP RIBA AADipl. FRSA AAIA,  
Vice President, HOK International, London

# The Boiled Frog Syndrome

A Survivor's Guide to Modern Environmental Hazards

or

Your Health and the Built Environment

THOMAS SAUNDERS



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*This book is dedicated to my wife Janet,  
an inspiring, generous and loving spirit*

# Contents

ACKNOWLEDGEMENTS	<i>page</i> ix
ILLUSTRATIONS	xi
INTRODUCTION	1
<i>Part I: Health Hazards of Today</i>	7
1 Your health and the built environment	9
2 Sick building syndrome	30
3 Electromagnetic radiation	60
4 The evidence	85
5 The cybernetic age	104
6 Prudent avoidance	119
<i>Part II: Perennial Wisdom</i>	133
7 Lessons from the past	135
8 The crisis/opportunity	165
9 The divine harmony	185
10 Arcane tradition	219
11 The perennial wisdom	232
12 A way forward	239
CONTACTS	249
INDEX	253

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Keith Critchlow, acting as a representative of the aural tradition has conducted 'closed' summer schools in both the UK and the US over the past 20 years or so. In these, of which I have attended many, he has given out material that is unpublished based on the principles of the venerable aural tradition that a printed word cannot be questioned, and may even transmit both a fraction of the deeper meanings as well as be 'frozen' in the printed word. Thereby in danger of being commented on by another who may direct a reader/hearer into only a single interpretation. Plato wrote clearly on this matter in his most important seventh letter (or epistle), which the reader is referred to. However, I have been given permission to pass on my understanding of the words I 'heard'

at these lectures by K.C. as our times are urgently in need of whatever light can be shed on the cardinal questions that awaken all people, the questions of:

- (a) Who am I?
- (b) From whence did I come?
- (c) What am I doing here?
- (d) To where am I going?

Good architecture embodies these questions by the very principles of beauty, proportion, and intrinsic integral cosmology.

The summer schools referred to above are run by Kairos. For contact details see Appendix I.

# Illustrations

Thanks must also go to the sources given below for their kind permission to reproduce the following images:

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# Introduction

Since the beginning of time, we human beings have striven to create the perfect social and physical environment, a Utopia that fulfils all our needs – physical, emotional, intellectual, and spiritual.

Our search to create the ideal environment is illustrated through our cities and buildings, which are manifestations of the prevailing political, social, economic and spiritual values of the period. Paradoxically, the war against fascism in the 1940s caused the obliteration of vast tracts of cities in Europe and Asia, which subsequently have been rebuilt with futurist bleak glass and concrete jungles that have since proved to be the cause of many of the social problems of our time – a dire warning that a sterile ‘Brave New World’ is upon us wherein nature and the natural world have no place.

Worldwide population expansion makes increasing demands on land use for building new towns that may be significantly less than suitable for human habitation. The shortage of appropriate development sites has been further reduced by planning laws and government restrictions. Land shortages, overcrowding and economics have resulted in the building of houses on land polluted with toxic industrial waste, landfill sites used for dumping refuse where the waste has been compressed and covered over with a thin layer of topsoil in the forlorn hope that it will prevent the emission of noxious gases. Inevitably, this has brought illness and strange allergies to the new inhabitants. Currently, there are thousands of hectares of toxic land earmarked for future homes, workplaces, even hospitals, and in many cases the polluted soil will not be thoroughly eradicated. We have assumed that the Earth can be treated as a lifeless, harmless commodity that will absorb and neutralise the poisonous substances being dumped.

New towns and cities built on virgin land may be less of a potential physical health hazard, but so many have proved to lack the ‘spirit’ or ‘soul’ so necessary for human habitation because their location and planning have been based on ‘logical’ social engineering concepts. Brasilia, the capital of Brazil, built in the 1950s, is a prime example of what can happen when little or no account is taken of the qualities and characteristics of climate, topography, geography or geology. The siting of Brasilia was determined solely by measurements on a map.

A year after Brazil became a republic in 1889, one of the founders of independence, José Bonifácio, proposed the building of a new capital city. For strategic defence

reasons it was to be established equidistant from all frontiers in the geographical centre of the country.

The Brasilia region is characterised by desert-like terrain, and the geophysical and environmental conditions of the site are less than ideal. In addition, vast distances have to be travelled to get to Brasilia from the established coastal towns such as Rio de Janeiro, the 'organically' established centre of commerce and one of the great cities of the Western world with its hedonistic cosmopolitan population, spectacular scenery, magnificent beaches and climate. Nobody, especially those who lived in Rio at the time, wished to move to the new capital, which prompted the government into resorting to coercion and the imposition of penalties to press banks, commercial enterprises and embassies to relocate their headquarters in Brasilia. This could be compared to a Londoner or New Yorker being deported to Siberia.

Those who drew up the plans for Brasilia designed a city not for human beings but for the movement and convenience of traffic. Residential zone 'villages' were cut off from one another by the main roads, as if under siege from the motor car. Perhaps even more devastating to the Latin psyche, there were no piazzas or places where young men and women could promenade in the hope of eyeing a likely mate. No doubt the ingenuity of the young has since devised alternative ways to meet friends, but the 'soft' human needs of society were certainly not addressed here. Sunlight, wind direction, orientation and the aspirations of human beings were no longer the basic factors determining the planning and layout of streets in a twentieth-century new town or estate. Brasilia, the manifestation of a modern architectural idealisation, became a Shangri-La for the motor car, but no Utopia for human beings. How could this have been hailed as an architectural triumph?

Twentieth-century Western culture has bred a scepticism of anything not 'scientifically proven': materialism and social conditioning have tended to sever or suppress that part of us which has an innate sense and awareness of nature and our natural surroundings. We scar the landscape to construct buildings, roads and cities, such as the new satellite towns of Cumbernauld in Scotland and Harlow and Milton Keynes in England, treating the Earth as an inert, lifeless mass of rock and soil (which may even be a reflection of the same scant respect we have of ourselves). But, at a subconscious level, our body, mind and psychic super-sensitivities remain highly attuned and expressed through the supreme intelligence of the cells in our body. We are a sensitive organism, constantly reacting to the most minute external vibrations that influence our actions, thought processes and every other aspect of our daily life.

At a subconscious level, we interact with the full spectrum of the Earth's energy fields, cosmic radiation, electromagnetic fields (EMFs) and every other stimulus in the external environment. Our cells, organs, glands, neurotransmitters and our subtle body sensors translate the signals into sensations ranging from discomfort, fatigue, illness and depression to pleasure, comfort, vitality, uplifted spirits and even transcendence. Whatever the external stimuli, it creates apparently inexplicable, often hardly discernible feelings whenever we arrive at a particular place or building. Our intuitive sensors feed us important information that should not be lightly dismissed. Colours, lighting, textures, the flow of air and the actual proportions and shapes of the interior rooms have a sum total impact on the mind, body and spirit.

Generally, buildings both old and new provide us with most, if not all, the conveniences of living we have come to accept and demand, yet it appears that many of us prefer to be in older buildings rather than the so-called modern 'glass and concrete boxes'. Some of the architecture of today is undeniably elegant and imaginative, so is our seeming preference for the past simply a form of nostalgia common to all ages? Or do many of these older buildings possess certain intrinsic, positive qualities not present in modern architecture? Whether or not we have a personal taste for a traditional style and décor, intuitively we can indeed sense the effect. Of course not all churches will lift our spirits and not all modern office buildings, blocks of flats or houses will make us feel depressed or offend our taste, but whatever the age, style or function, there is a reason why some places make us perturbed, or even ill, whereas other locations or buildings have a magical 'aura' where we feel we are in touch with a natural vitality or essence of harmony and well-being.

The needs of human beings extend beyond the material dimensions of physiology and biology: we are conditioned by our psychology, our perceptions, instincts, intuitions and an awareness of nature itself, all of which transcend our basic requirements for simple bodily comforts and shelter from the weather. Buildings can be likened to our third skin. The first skin is our flesh, the second skin our clothing, while the third is the protective sheath provided by the buildings in which we spend most of our lives.

Naturally, we want our buildings to be at least benign and disease-free, and preferably to be life enhancing. We want them to have a 'soul', to be user-friendly and to cause the least possible damage to the global and local environment. The majority of people are highly receptive to innovative, avant-garde modern architecture. We want our architects to be original and inventive, but at the same time we want them to ensure that modern technology and its short-term improvements do not have a negative impact on our long-term health and quality of life.

Today, planners, architects and engineers appear to focus on high-tech, eye-catching 'contemporary' buildings that provide watertight sheaths to protect our material comforts without addressing the impact their creations may have on our physical and spiritual health. Our relationship with nature and the interconnectedness with the human psyche have not been understood. This has had an affect on our everyday lives: a few years ago we became aware of the effects on the environment and the ecology of the planet, but we are now witnessing the effect on our immediate personal environment and our health. The root cause is one-dimensional ideology and the belief that materialism and the physical body are the only 'realities', excluding the mind and spirit as concepts that have no place in the modern world where anything – disease, natural disasters, food production, global warming and environmental disasters – can be overcome and cured by advanced technology. However, many, if not all these problems have come about because we are constantly at war with nature.

Professor James Lovelock, an independent British scientist and Fellow of the Royal Society who cooperated with NASA on its space programme, proposed a new theory of life and the evolving planet. Lovelock hypothesised that the Earth, rocks, oceans, the atmosphere and all living things are part of one boundlessly intelligent organism,

continually evolving over a vast span of geological time. In 1988 his book *The Ages of Gaia*<sup>1</sup> supported the age-old tradition that Gaia (the Greek earth goddess) is not always benign as she will protect her own health and well-being rather than any individual species. This controversial view appears, at last, to have achieved political respectability. Ministers and officials of the British Government, including Demos (the government's 'think tank'), are taking seriously the idea that everything is interconnected and the planet is a holistic living organism. The Gaia theory has survived the science establishment's ridicule over the years but they too have now accepted Lovelock's hypothesis, which could form the basis of future government policy on environmental matters.<sup>2</sup>

This is in accordance with the ancients' view that the Earth's energy fields and rhythms had to be respected in order to preserve the essence and integrity of nature. Furthermore, the planet and its living organisms had to be supported in a state of balance and harmony to sustain our own physical and spiritual health. Any alterations to the landscape, for example deforestation, the over-farming of crops, mining and other earth or river works, and especially the siting of a building or structure, had to be carefully evaluated before the energy fields were disturbed. The ancients also recognised that the spiritual energies of a place could be affected by the emotional/psychological charge created by particular human activity occurring at that location. Hence the building of a temple of worship or healing could enhance the positive vibrations associated with a specific location already possessing certain natural 'magical' qualities, so resulting in a sacred site.

The 'freedom of spirit' (interpreted by some as 'anything goes') in modern art and architecture is an abandonment of the soul – a dismissal of the sacred in favour of the profane and the deconstruction of nature.

The modern diseases of civilisation, from fatal cancers to various forms of debilitating, chronic sicknesses and allergies, have multiplied over the past one hundred years or so, and the source of the majority of these can be traced to the West's concentration of new development on polluted land, the actual buildings themselves, our insatiable demand for artificially generated electricity and our exploitation of nature. We lack understanding of the harmful effects of negative Earth energies. The built environment must be considered as a significant contributor to the cause of the diseases of Western civilisation.

Although we wring our hands in despair knowing that we are plunging headlong into an abyss, we still refuse to forego the latest electronic gadget and must have the next high-tech device or system that we believe will enhance our pleasure, personal comfort and convenience. We demand the same of the pharmaceutical companies and the medical profession, expecting them, without question, to keep discovering wonder drugs and new ways to cure our largely self-induced ills. The dangers are becoming more apparent day by day, but we turn a blind eye. Are we in silent collusion with architects and doctors because the majority of us are prepared to suffer the gradual deterioration of health – even when it may end in an early demise – rather than allow anything to interfere with our current or hoped-for lifestyles? This condition is known as the *Boiled Frog Syndrome*.

A frog jumps into a pot of water which is gradually being heated. As the water gets warmer, the frog adjusts its body temperature and continues to adjust to the increasing water temperature until, ultimately, the frog gets boiled alive.

Like the frog, we keep adjusting and reacting to the increasing health hazards to satisfy our expectations and demands for more comforts, greater convenience and easier living. But despite Western materialism, few people seem satisfied and content.

We have encouraged architects, industrial producers and property developers to meet our demands for buildings and goods almost completely without question, complaint or active criticism, and past records show that there has been little or no political will to eliminate or reduce the hazards. Timely and effective control are not exercised by either government authorities or the medical and architectural professions who often choose to ignore epidemiological and anecdotal evidence. Perhaps if doctors and architects communicated with each other, using a common language, there could be a breakthrough in understanding the worsening effect.

This said, there does appear to be a growing reaction in the field of medicine. We are now more sceptical of orthodox allopathic treatments that do not recognise human beings as holistic entities as well as being a body of flesh and bone. The necessity for certain types of radical surgery and the prescription of drugs that may cause more harm than good are now being questioned, and we are also becoming more consciously aware of the detrimental effects that certain environmental conditions – both inside and outside buildings – can have on our general health and sense of well-being. Instinctively we know the zealots and high priests of advanced technology need to balance their blinding logic and rationalisation with an understanding of the basic tenets – so vital for human existence – that have been known, taught, written about and practised for many thousands of years.

Ancient seers respected our planet as an intelligent living organism, and believed that everything in the universe, including human beings, has a common interconnecting bond: the patterns and movement of the heavenly bodies are a macrocosmic mirror image of life on Earth down to the microcosmic level of the sub-atomic world. In other words, the natural patterns, rhythms and proportions or geometry found in nature are repeated throughout the universe.

Those initiated into these teachings not only had a deep sense of the subtle play of energies by which the cosmos functions as a harmonious whole, but also knew how to replicate these vibrations in a manifested form so that the buildings they designed would have a resonance with human beings and the natural world to create and sustain healthy living conditions that would feed our soul. Vitruvius, who lived two thousand years ago, emphasised that architectural values are human values. Consciousness, self-awareness and a profound understanding of the mystical essence of human nature and the cosmos should be the qualities demanded of anyone who professes to be an architect – or indeed, a medical practitioner. How do our modern buildings match up to these fundamental principles?

The design of any building, whatever its style or age, and including our modern

architecture, can produce these resonating, harmonious, healthy and satisfying qualities providing the architect has been educated and trained to practise the principles handed down by the masters of ancient wisdom. Ironically, we have now reached a stage in this present cycle when the critical circumstances have created a positive opportunity for the architect to become, once again, the ‘master builder’.

Western society’s emerging reawakening to a way of life that reacts against pure materialism will force architects to take advantage of the new-found freedom created fortuitously by the technical experts in lifting some of the burdens of day to-day and mundane matters. Instead, they can now focus on the essence and fundamental principles of architecture.

The challenge for the twenty-first century is to synthesise and bring together the wonders of modern technology with the integrity of ancient spiritual wisdom and the understanding of the eternal laws of nature and the universe. The confrontation arises from the way we perceive the world; for example our senses lead us to believe that the Earth is standing still and that the Sun moves across the heavens, yet intellectually we know that the Earth moves around the Sun. These conflicting ‘realities’ can only be reconciled when our consciousness and understanding can fuse the paradox into one, undivided unity. How can the resolution of this dilemma be manifested in the quality of the built environment? We can begin by avoiding distractions from the essence of our being.

This book explores the legacy of the twentieth century’s repudiation of ancient wisdom and sets out to heighten our awareness by examining some of the root causes of the problems and offering guidance on practical solutions to prudently avoid some of the current health hazards. It provides the ‘ammunition’ to challenge those in authority who appear to take a one-dimensional materialistic view of humanity and nature. But before we, the consumer – the end-user – can demand a hazard-free, healthy soul-enriching environment fit for human habitation we must also change our attitudes and rediscover our holistic nature – that we are physical, mental *and* spiritual beings.

## References

1. Lovelock, J. (1989) *The Ages of Gaia*, Oxford: Oxford University Press.
2. Woods, R. ‘Meacher comes out as guru of Mother Earth’, *The Sunday Times*, 7 May 2000.

## Suggested further reading

- Carey, J. (1999) *The Faber Book of Utopias*, London: Faber & Faber.  
 Day, C. (1990) *Places of the Soul*, Northants: The Aquarian Press.  
 Russell, P. (1982) *The Awakening Earth*, London: Routledge & Kegan Paul.

# Part I

## Health Hazards of Today



# 1.

## Your health and the built environment

Health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity.

The World Health Organization

The average Western person – homemakers, businesspeople, homeworkers, children and the elderly – spend up to 85 per cent of their lives either inside a building or inside a vehicle conveying them from one building to another. Gradually it is being acknowledged that the prevailing site conditions and the actual siting, design, construction, and maintenance of a building can have a profound effect on the health of the occupants, whether that building is an office, school, hospital, shopping centre or one's own private residence where electronic equipment and business machines have become commonplace. Sick building syndrome (SBS) and other health hazards, usually associated with the workplace are now being experienced in households since 30 per cent or more of the employed population now operate from their home base. It would be unwise to imagine that your home is as 'safe as houses'.

Sick building syndrome is a general 'malaise' but there are other serious, life-threatening environmental illnesses known as the 'diseases of civilisation'. In the UK, of the 90,000 deaths before the age of 65, there will be 32,000 from cancer and 25,000 from heart failure. Before 1950 cancer was a relatively rare disease, mostly afflicting old people. Since then the disease has increased by 1 per cent per year, and varying estimates suggest that within 50 years everyone will suffer some form of cancer.<sup>1</sup> Current official statistics predict that one in three of us will be afflicted, and children are becoming ever more prone despite the billions spent on research throughout the world. Twentieth-century Western industry and commerce has produced approximately 70,000 new synthetic materials and chemicals, many of which have been derived from oil by-products. Less than 2 per cent have been tested for their effects on human health and more than 70 per cent have not been tested at all.<sup>2</sup> About a thousand more come into general circulation every year. The upsurge of cancers has been attributed mainly to our exposure to toxins and a wide range of industrial chemicals, gasses and other substances in the air we breathe inside the workplace and our home. Other sources are contaminated water and food.

According to an extensive study of nearly 90,000 identical and non-identical twins by the Karolinska Institute in Stockholm, published in the *New England Journal of Medicine*: ‘On average, environmental factors were associated with twice as many cancers as in born genetic factors...and even an identical twin had only a 10% chance of contracting the same cancer as his or her sibling’.<sup>3</sup> Ultimately, all cancers are genetic diseases caused by damaged genes, however, the study demonstrated that the environment rather than genetic factors poses the greatest risks. Radiation and pollution were among the prime culprits. Just because we now have the technology to map the human genome, claims that this will enable diseases such as cancer to be a thing of the past within the next 50 years seem most unlikely unless more is done to identify and deal with the avoidable environmental hazards. While we cannot choose the genes we inherit from our parents, it is in our hands to control our environment.<sup>4</sup>

### **How fresh is the air we breathe?**

Since the eighteenth century’s ‘Age of Reason’, Western civilisation has treated the Earth as an inert benign provider of resources to be exploited at will for the sole benefit of human beings in the belief that however much we polluted the environment, the land, sea and air would absorb and neutralise it. The idea that one tract or region of land could possess unique beneficial features, or that another could be harmful and detrimental to health, has been dismissed as irrelevant and superstitious nonsense: one location or site was assumed to be as suitable for human habitation as any other. We are now beginning to realise that certain areas of land and many of our new buildings can also be a source of illness and disease. Until the late nineteenth century, London was a city concentrated along the north bank of the Thames, leaving the south side, especially around Southwark, as undeveloped low-lying marshland notorious for mosquitoes and rats. Over the last hundred years or more, this area has become a densely populated part of the London urban sprawl. In the spring of 1994 a research programme known as the Middlesex Report published results showing that where houses have been built in the vicinity of such waterlogged land, the infant mortality rate is 31.9 per cent higher than for dry land areas. Scientific studies have eliminated other statistical variables such as social classifications and it is clear that both young babies and adults are at risk. In Chapter 3 we discuss the harmful effects of generated electromagnetic fields (EMFs). In this and the next chapter we examine other sources of health hazards in the built environment, such as:

- Contaminated land
- Natural gas emissions (radon)
- Asbestos and lead poisoning
- Contaminated water
- Volatile organic compounds (VOCs)
- Poor architectural and engineering design and specification
- Inadequate facilities management.