

Dramatic increases in allergies, bronchial asthma, diabetes, obesity, lowered fertility rates, new viruses, Chronic Fatigue Syndrome, a host of cancers... most people today are resigned to falling prey to such illnesses.

Building Biology – Baubiologie – is a movement born in Germany out of disenchantment with post-World-War-II building, which is now gaining recognition with the growth of ‘green’ awareness. It warns of the dangers of chemical pollution, synthetic building materials, the overuse of electricity, and the disregard for natural laws and the environment. It suggests an alternative worldview: a holistic relationship between the way we live, our environment and our health, leading to the construction of healthy homes and workplaces.

In short, it says that the design of the buildings we live and work in, interlinked with our modern ‘progressive’ lifestyles, influences our mental and physical health.

One of the most hidden dangers to health today is invisible electromagnetic fields (EMF) created by electricity (though we cannot smell, see, hear, taste or feel them), which affect our bodies. Industries take precautions to shield expensive sensitive equipment in hospitals, IT manufacturing units, aeroplanes, etc against external electromagnetic interference. But very little care is taken to ensure that the human body – the most sensitive ‘machine’ ever produced – whose functioning is regulated by minute electrical impulses, is not harmed by external EMF interference. EMF exposure should be regulated and reduced to a minimum, specially while designing places where we

spend long hours – bedrooms as much as offices.

Unfortunately, though we now understand the importance of healthy food, the concept of the ‘healthy home’ is novel to most people. At the most, it is limited to environmentally-friendly building technologies, which are important, but do not sufficiently stress the holistic viewpoint: that buildings are a third skin (like our own skin and our clothes, the second skin) directly affecting our physical and psychological health.

The problem is even more urgent because we have entered the telecommunications and infomatics age. While we obviously benefit from this progress, we should also be aware of its negative side-effects, which include new, undiagnosed ‘civilizational’ sicknesses.

The scientific community has presented many studies reporting the possible health effects of EMF exposure below the threshold of body tissue heating – including cellular phones and towers, cordless phones, wireless networks, radio and TV transmission towers, power lines and EMF emissions from urban power and building wiring. IARC and WHO recently classified extremely low frequency magnetic fields as possibly carcinogenic, based on epidemiological studies of childhood leukemia.

Electrobiology, which deals with electricity and artificially created EMF in our cities and their effect on our bodies, is a part of this relatively new science of Building Biology. With the growing number of electrical appliances in our daily lives, as well as the increase in high-rise, high-density buildings, transmission antennas leading to wireless



building for health

**Mona Doctor-Pingel,
an architect based
in Auroville,
introduces
the relatively
new science
of Building Biology,
which investigates the
link between
buildings and health.**

homes and offices where everything is done digitally, more and more synthetic materials being used, overuse of RCC and electricity, and improper earthing of electrical wiring, it becomes imperative that we plan our architecture to reduce the harmful effects of EMF. This does not mean creating fear or limiting one's comforts; it means the 'right dose', like everything else in life.

Another source of indoor pollution consists of organochemical mixtures of additives and technical residues from building materials, interior design products, treatments and furniture. Formaldehyde, pesticides, plasticizers, polychlorinated biphenyls in the air and house dust, bioaerosols, and insulation fibres are some of the typical indicators for indoor air quality problems.

Moreover, scientific research has shown that microbial conta-

mination is a significant source for poor air quality and associated health problems. Many mold spores act as allergens and irritants. Building damage, construction defects and poor building ventilation (particularly in centrally airconditioned buildings) are among the major reasons for moisture-related microbial diseases.

The diagram below shows that there are many factors which can be directly influenced while designing keeping building biology in mind.

Ultimately we need to remember that our body is not so much an object but a process – a dynamic flowing process, which is in a constant interchange with innumerable influences from the surroundings. That is why we need urgently to design buildings that damage neither the environment nor our bodies, but bring positive regeneration to it and to

man: buildings that are not sick but are healing places for the body, mind, spirit and, therefore, also the planet.

A superficial view of Building Biology would consider it to be just a study of non-toxic building materials, clean indoor air, shielded electric installations, avoidance of electromagnetic radiation, radon, etc. This is only part of the picture; the special characteristic of this living subject is its holistic overview – the interrelationship and synthesis between isolated fields of study such as ecology, biology, medicine, engineering, education and economy.

In the end, Building Biology – and the architectural profession as a whole – can solve problems only partly. But small steps can have large effects. Architecture can then be one of the links in a chain of factors, which can lead to a change of consciousness in people. ☺

