Buildings can cause sickness

But building biology helps remove harmful electromagnetic fields from architecture

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Various types of allergies, bronchial asthma, diabetes, obesity, chronic fatigue syndrome, cancer, AIDS and tuberculosis have become almost endemic to our civilisation. Most even today take it for granted that at a certain age, one of these maladies will strike them. Is it possible that building designs — along with modern living standards and habits — have something to do with the state of our mental and physical health?

Let us consider some examples. Recently, when their one and half year old son suffered diarrhea for long — and when medicines offered little succour — an young Berlin couple consulted an architect, specialising in building biology (we will turn to this concept a little later). Inspection revealed a strong electric field in the child's room. The field remained, even after the house's electric supply had been switched off. The reason: aluminum strips of thermal insulation under the roof, which attracted electrical fields from the neighbour's circuits and then conducted them further. The biologist recommended connecting all the aluminum strips and earthing them at one point. After two weeks, the happy parents reported that their son's diarrhea was gone.

Let us now take the case of 13-year old Markus. He wears black leather jackets and sports a fashionable punk look — but till three years back, the child was a chronic bed wetter. This Bonn teenager suffered from pollen, dust and grass allergies, since age five. When therapies and weekly sessions with a psychologist proved of little use, Markus's parents tried changing the flooring of their home, besides they used natural paints and wallpapers, took care to have no electric appliances near the child's bed and removed all synthetic curtains. However, the problem lay elsewhere: in the faulty electric installations running in the wall next to Markus' bed. 4500 millivolts of electric current were measured on his body when he lay on his bed! Making the child's room free of any electromagnetic fields by installing a "net-free" switch (a circuit breaker which shuts off the electric network when not in use) gave immediate results. Markus' bed wetting had gone and even his pollen allergy symptoms are much less.

Problems and solutions like these are going to become increasingly common in the context of a fast growing, urban and "developed" India with its hi-tech, electronic accoutrements.

Science knew it

That invisible electromagnetic fields (EMF) exist has been known by science for over 150 years. Generally enough precautions are taken to safeguard and shield expensive sensitive equipment in hospitals, information technology manufacturing units and airplanes against external electromagnetic interference. There have been many studies which demonstrate the possible health effects of EMF exposure. Some of these analyses demonstrate effects of cellular phones and towers, cordless phones, wireless networks, radio and TV transmission towers on the human body. The World Health Organization (WHO) has recently classified extremely low frequency magnetic fields as possibly carcinogenic to humans. The WHO's analysis is based on epidemiological studies of childhood leukemia.

In spite of all these, we rarely take care to safeguard the human body — the most sensitive machine ever produced — against EMFs. Even though we spend more than 80 per cent of our lives inside buildings, very little care is taken to ensure that functioning of the human body — which is carried out by minute electrical impulses — is not disturbed by external interferences. Consumer power is yet to make itself felt in architecture. At most, it limits itself to energy saving building technologies, rainwater harvesting, wastewater recycling, traditional construction techniques. These are of course necessary components of good house design but are insufficient to take care of modern day problems in a holistic sense. In order to have such an approach, one should view buildings as our third skin (after our own skin and our clothes) that fulfills essential living functions and so affects our physical, mental and psychological health, directly.

A society's consciousness has always manifested itself in architecture. Today, we need to ask ourselves if the "progressive" elements that permeate our dwellings are really necessities or they are just status symbols? We require a paradigm shift in architecture.

It is here that we can turn to building biology.

Born out of disenchantment

Building biology — which can be seen as a modern form of the Indian architectural system, Vastushastra — originated in post-war Germany. It was born out of a widespread disenchantment there over building forms, which overused electricity and disregarded the environment and natural laws. The concept aims at creating harmonious relationships between living beings, the
environment and building forms through construction of healthy homes and workplaces.

A superficial examination of building biology might leave one with the impression that it is just a study of nontoxic building materials, clean indoor air and shielded electric installations. This is just a small part of the picture; there are other important aspects to building biology. It also encompasses subjects such as ecology, biology, medicine, engineering, education and economy. This interdisciplinary approach helps building biology in finding the right synthesis between humankind, nature and economy.

**Away with bad fields**

Among the key element of building biology is electobiology; it deals with electricity, artificially created EMFs and their effects on our biological system. There are actually five different fields (depending upon type of currents — alternating or direct — and frequency — low, medium or high). These are measurable by different instruments in terms of millivolts or Tesla. The influence of these magnetic fields depends on four physical factors: distance, frequency, duration and output. The increasing use of electrical appliances in our daily lives, the rising numbers of high-rise and high-density buildings and the rapid growth of transmission antennas — leading to wireless homes and offices where everything is done digitally at the tip of a button — mean that today we are much more vulnerable to harmful electric fields than in the past. The gross overuse of synthetic materials and reinforced concrete along with improper earthing of electrical wires — that seems to be pretty rampant today — only increases our pecarioness vis-a-vis EMFs.

It is here that we turn to electobiology; it helps locates harmful electrical fields that cannot be tracked down by our sense organs (little wonder that EMFs are in such utter discord with the human body’s natural functioning). Consulting an electobiologist before planning buildings can help us keep EMF’s effects to a bare minimum.

**Right dose of comforts**

Anyhow, we would do well to eliminate these harmful fields from places where we spend long hours. Conscious and conservative use of energy are among the first few steps we could implement. The key words here are “awareness” and “right choices”. It does not mean creating fear or limiting comforts, but finding the right dose of comforts, like everything else in life.

Ultimately we need to remember that the human body is a complex mechanism — each one of us is a sensitive antenna and reacts differently to external influences. Many factors can make us sick: bad nutrition, too little movement, wrong medicines, bad habits and long-term exposure to EMFs. It always depends on how full your “glass” is — any of these factors can be the last drop to make it overflow.

So there is an urgent need to design and build healthy and energy-conserving homes; building-forms which help us to change our wrong habits; that are designed not to damage the environment but to bring about a positive regeneration of it. In other words, we must have buildings that do not make us sick but on the contrary are healing places for the body, mind and spirit. Building biology helps achieve that.

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