

Sustainable architecture

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Roshni Udyavar Yehuda, professor and head, Institute of Environmental Architecture, Rachana Sansad, speaks to Anisha Sahijwala on what it takes to make a career in sustainable and ecofriendly construction



The building and construction industry is a large contributor to climate change. The operational phase of buildings alone is estimated to be responsible for 30 – 40% of global greenhouse gas emissions. As per the Greening the Building Supply Chain, SBCI, UNEP 2014, building construction and demolition waste contributes about 40% of solid waste streams while 12% of global water use is attributed to buildings in use.

COURSE CONNECT

Those who wish to pursue a career in this field can opt for a two-year Master's degree in environmental architecture, sustainable design and environmental engineering or a one-year diploma in specific subjects such as energy efficiency, water management, rainwater harvesting, sustainable building materials, solid waste management, urban farming, etc. Green building rating systems such as the Indian Green Building Council's (IGBC) rating system and Green Rating for Integrated Habitat Assessment (GRIHA) offer training and self-study opportunities for accreditation as green building professionals. The US Green Building Council also conducts exams regularly for those who aspire to become LEED (leadership in energy and environment) accredited professionals.

SKILL SET

A basic background in math and science is essential for students who wish to pursue a career in this field. However, this need not necessarily be a restricting factor. Design know-how and analytic thinking abilities, basic software skills such as CAD (computer aided design) and documentation skills are required. Most importantly, they must believe in protection of the ecology and environment.

SCOPE

The field of sustainable building design and construction has gained importance in the last two decades globally. Almost every country in the world has developed a national or regional green building rating system. Although most are voluntary, many countries are beginning to make this a mandatory practice. In several developed countries, sustainable building practices are incorporated into all construction practices and building bye-laws. As part of its commitment to COP 21, countries in Europe and the US are already moving towards net-zero and nearly-zero energy building targets till 2020. This increases the scope for qualified professionals in the field.

JOB PROFILE

The role of sustainable building professionals is to design buildings that have a reduced impact on the environment at every stage of the building. This includes site restoration, building material selection based on embodied energy and environmental effects, brown-field site remediation, climate sensitive and energy efficient design, sustainable material selection, maintaining and enhancing indoor air quality, water and waste management, use of renewable energy, cool roofs and urban heat island effect reduction.

A career in this field will entail enhanced design abilities, technology integration and sensitivity in understanding and dealing with environmental and social issues. Professionals with a qualification in this field can work as a building energy analyst or simulation expert, sustainable or green building architect or services specialist, ecological landscape designer, retrofit expert, green building accredited professional, IAQ specialist, or sustainable design consultant. There is also a great demand for teachers and trainers in this field. Green building professionals can improve their credibility by getting accredited as Master Trainers with the Bureau of Energy Efficiency (BEE) or as a building energy efficiency specialist.

INDUSTRY STATUS

According to the Indian Green Building Council (IGBC) Annual Report 2014-15, there has been a paradigm shift in the Indian construction sector since the formation of IGBC in 2001. India now has over three billion square feet of green building footprint and in terms of global green building footprint, it is the second largest in the world. The regulatory framework in India provides the Energy Conservation Building Codes – which will be mandated by all states by 2017. This will create demand for sustainable building professionals in the form of designers and assessors to design and implement energy efficient and green buildings.

NEW TRENDS

Bio-mimicry, that is, the design of buildings based on natural systems is an upcoming trend. Buildings are being built as zero energy and zero waste systems similar to those in the natural world. Use of building facades to generate energy for the building to make it net zero, is another trend.

REMUNERATION

A fresher's remuneration can range from Rs 70,000 to 1,50,000 per month.