

# Israel Launches Green Building Standard

Israel's recently approved green building standard offers environmental, social and economic benefits

There's good news and bad news. The bad news is that buildings are major consumers of energy (reaching some 40% of total energy consumption in some countries), water and raw materials and significant generators of greenhouse gas emissions and waste. The good news is that green building is helping to overcome these problems. In Israel, and worldwide, green building initiatives are helping to provide higher quality of life and the environment to residents, while reducing the building's negative environmental impact. When properly run, green buildings, also known as sustainable buildings, will conserve natural resources and reduce waste, cut down operational costs and improve the health and well-being of residents, while providing a safer and more effective living and working environment.

## A Green Building Standard for Israel

When setting out to draft its own green building standard, based on international experience, Israel recognized that "green building" is a multidisciplinary

### Why Build Green in Israel?

- Households in Israel consume some 30% of the total electricity production.
- Households in Israel consume about 12% of the total electricity production for heating, cooling and lighting.
- The commercial sector consumes some 30% of the total energy consumption, largely for heating, cooling and lighting.
- Israel generates some 7.5 million tons of building waste per year.
- Households consume some 30% of the total quantity of fresh water produced each year.



**Natural lighting in Haifa courthouse.**  
Photo: Yehuda Olander

subject, which is widely dispersed among academic, governmental, institutional and private frameworks. Clearly, the multiplicity of subjects inherent in the very concept of green or sustainable building - including energy, water and other environmental subjects - necessitated close cooperation and coordination among such professionals as architects, engineers and environmental experts and the formulation of uniform criteria, methodologies and review and classification mechanisms for "green buildings." This is how Israel Standard 5281 for buildings with reduced environmental impact (green buildings) was born.

## Green Building Standard and Rating System

The green building standard, approved in November 2005, is a voluntary standard which is awarded to new or renovated residential and office buildings that comply with the requisite requirements and criteria. The standard is comprised of four chapters: energy, water, land and other environmental subjects. A building which meets the prerequisites in each chapter and accumulates the minimum number of credit points in every environment-related sphere is eligible for "green building" certification. A cumulative score of 55-75 points entitles a building to a "green building" label, while a cumulative score of more than 75 points allows it to be certified as an "outstanding green building."

### Following are some specifics:

- **Energy** (29 points, of which 14 are threshold conditions): The energy chapter has the most points and therefore carries the most weight. It includes a climatic review of the building and its



Treating municipal, industrial and agricultural waste



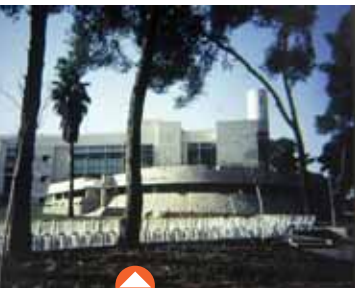
Reducing air pollution from transportation and industrial sources



Improving the environment and preserving open spaces



Catalyzing economic growth and national interests



**Weizmann Institute of Science building.**  
Photo: Edna Shaviv

## Green Buildings in Israel

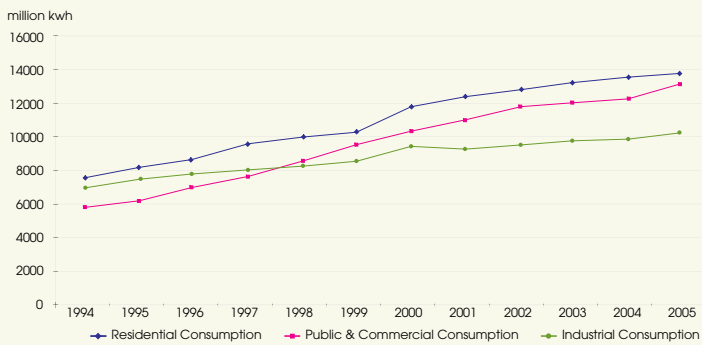
The principles underlying green building are not new to Israeli scientists and researchers. Nearly all of Israel's academic institutions engage in different aspects of research on the subject. Some prominent examples include the National Building Research Institute in the Technion-Israel Institute of Technology and the Desert Architecture Unit of Ben-Gurion University's Desert Research Institute. In these and other institutions, research findings are being translated into actual design projects in an effort to apply accumulated expertise to specific problems.

The International Center for Desert Studies in Sde Boker is one notable example of the application of such "green building" principles as energy efficiency and conservation through natural and innovative techniques for heating, cooling and lighting. Another is the Environmental Sciences Building at the Weizmann Institute of Science in Rehovot which was planned in conjunction with a Technion expert in climatic-energetic building, Prof. Edna Shaviv, and includes 12 different technologies for electricity conservation.

Following the recent publication of the green building standard, four requests for a green building label have already been submitted – for the Intel Corporation's Research and Development Center in Haifa, the offices of the Dan Region Association of Towns for Sanitation, a private house in Israel's south, and the visitor center of the Yad Hanadiv Gardens in Zichron Yaakov on the coastal plain, south of Haifa.

buildings can generate savings ranging from 20%-50% of electricity and gas bills. According to Nir Kedmi of the ministry's Economic Division, investment in green building should not necessarily be greater than in conventional buildings since most of the effort is concentrated in the planning stage, prior to actual building. Additional investment, if any, should not amount to more than one to two percent, and will certainly be recovered in a reasonable amount of time, due to savings in energy and water.

Growth of Electricity Consumption by Sector



Source: Israel Electric Corporation

environs and calls for planning the building to provide thermal comfort in all seasons of the year. It relates to such elements as orientation of the building, use of passive techniques for heating, cooling and air flow, improvements of air conditioning/heating systems, use of natural light and insulation and energy efficiency and conservation.

To comply with the energy chapter, it is also necessary to fulfill some of the requirements set in the recent Standard 5282 on the energy rating of residential buildings, especially with regard to insulation and windows.

- **Land** (19 points, of which 8 are threshold conditions): This chapter relates to such elements as average density of the building, maximization of land use (both aboveground and underground), land conservation and ground contamination.
- **Water, wastewater and drainage** (17 points, of which 5 are threshold conditions): This chapter deals with the conservation of fresh water, reuse and recycling of drainage and grey water, and preservation of runoff from unpolluted areas.
- **Other environmental subjects** (27 points, of which 10 are threshold conditions): This chapter relates to seven different subjects: environmental management of the building process and of the construction waste, air quality and ventilation, noise, radiation, separation of solid waste into components, bicycle stands, and use of "green label" materials and products.
- **General Assessment:** The person responsible for assessing compliance with the provisions of the standard, both at the planning and implementation stages, is authorized to grant additional credit points for subjects that reduce adverse environmental impact but are not included in the previous chapters. These may include roof gardens, renewable energy systems and more.

### Green Building: A "Win-Win" Situation

Green building is a true "win-win" situation. The standard will provide developers with a marketing advantage and will serve as a measure of the quality of the building for consumers. Studies show that green