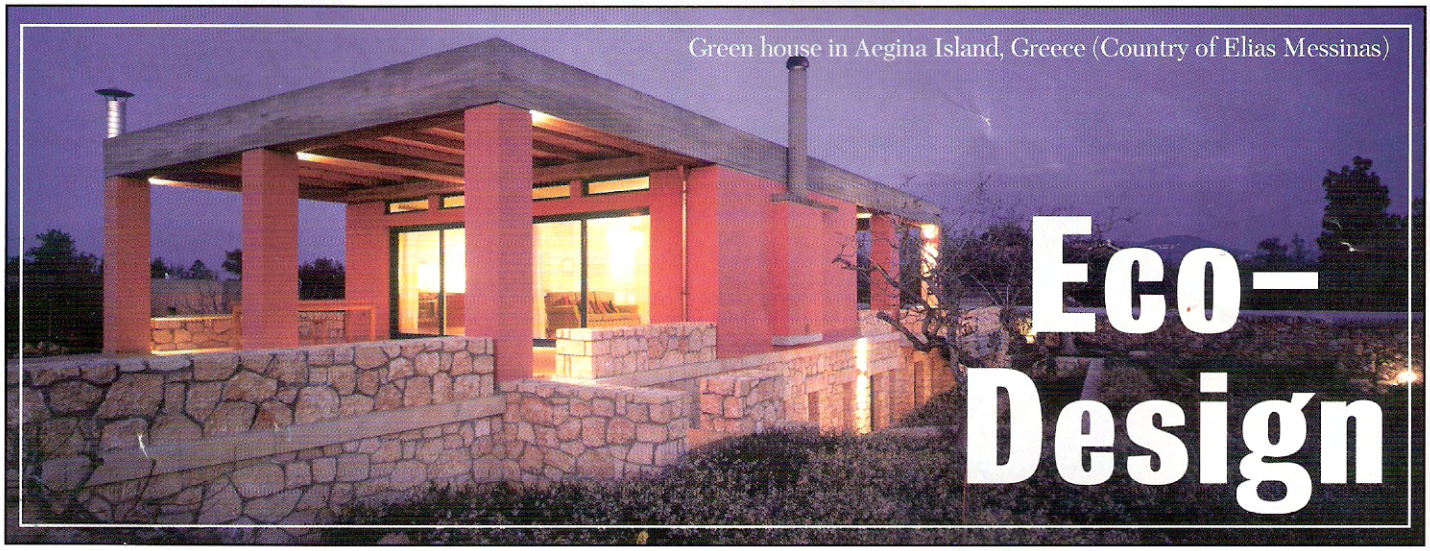


Green house in Aegina Island, Greece (Country of Elias Messinas)

Eco-Design

By YEHUDIT SINGER

"Green Design", "Eco-Architecture" or "Sustainable Design" is an integrated approach to residential and commercial design that is based on the principles of reducing our impact on the environment. The standards for green design are based on LEED, the Leadership in Energy and Enviromental Design, an international rating system.

IsraTimes *spoke with Elias Messinas, architect, environmental consultant, and expert in sustainable design. Originally from Greece, Elias currently lives on Kibbutz Kramim in the Negev with his wife, Yvette and three daughters. He is spearheading the Kramim Eco Village project, a model sustainable village slated to begin construction this summer He is the founder of "EcoWeek", an international non-profit organization that aims to raise awareness about adopting habits that protect the environment. Elias is also the head architect of GoodLiving, a business initiative to promote 'green' architecture in Israel, and consults on a number of ecological projects in Israel, Greece, and Cyprus.*

YS: Tell us about the progress on the project in Kibbutz Kramim.

The project is perhaps the most promising ecological development in south Israel: the ecological expansion of Kibbutz Kramim, located 12 km. NE from Beer Sheva. It is a 200 dunam expansion for approximately 300 new housing units. What is special about this project is that it is following the guidelines of national and international 'green' building certification systems, such as LEED (the project is compatible for LEED Platinum), the European EPBD 2002/91, and the Israeli 'green' teken 5281.

This project is also very exciting because it follows a very conscious process within the community, that does not only include the planning of a new extension of the Kibbutz, but also the gradual 'greening' of the existing community – since not everyone that has joined the community is ecologically minded. So, it is an exciting process that involves the community, the planning team and 'green' guidelines. My position as strategic environmental consultant is to be right in the middle of this process, consulting the architects, the community and the planning team. I regard this as a unique opportunity for me as an architect, to engage in a real ecologically minded, challenging project that will become the model for other ecological projects like municipalities, schools and private clients around Israel.

YS: There has been tension between environmentalists and contractors since land development, even for the sake of *hityashvut*, often destroys the natural habitat of the environment and biodiversity. How can one develop land while respecting nature? Are there any 'golden rules'?

It is a matter of intention. Architect Bill McDonough says that 'if it was not your intention to destroy ecosystems with your building but you did destroy them anyway, it means that you have no design plan." In other words, if we set the health of people and ecosystems in an equal footing with that of 'development and we realize that the solution that we are proposing will harm the local ecosystem, we have to have the guts to simply stop the development. There is another 'golden rule' which landscape designer Julie Bargmann calls "no waste leaves the site". This means that we are allowed to 'develop' a site, but we are not allowed to pollute the rest of the world with our waste while doing that. I think that we must have the right intention, to develop respect for the earth's ecological systems and processes, and to recognize the future repercussions of our actions today.

Sometimes I think of how Israel was created. A poor country with lots of immigrants. What did the government do? It took them all to build infrastructure and plant trees. I think that we have to learn from those first steps in Israel's creation, and how limited resources often make us more creative and resourceful...

YS: What areas in Israel are being planned?

Currently, I am discussing a quite exciting project with the administration of the Dudaim landfill in the south of

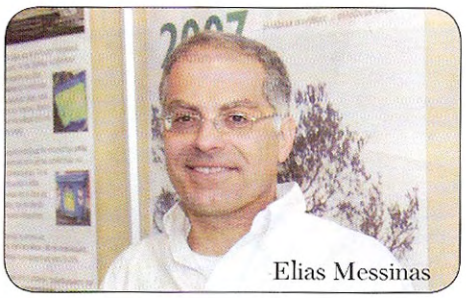
Israel. We are in the preliminary stages, and things were postponed for after the war in Gaza. However, the plan is to create a visitors' center that will not only be of zero emissions, zero waste and be built from at least 90% recycled materials, but it will also use captured methane for energy and will apply a natural cleaning device for the liquid spill from the landfill, which today stands still in an open air pond, evaporating. It is quite likely that we will also investigate the possibility of cleaning up the soil of the visitors' center plot, in case we find it to be contaminated from the landfill. I find this unlikely, since it a site adjacent to the landfill, and not part of the landfill.

I have a very special relationship to waste. In Greece, where I lived with my family, waste was my introductory project to ecological entrepreneurship. Seeing the lack of proper recycling program on the island of Aegina, where we lived, I initiated a household waste recycling program. First, I involved the waste collecting municipal employees, then the mayor and finally the municipal board. The island produced 22-30 tons of waste daily—double in the summer. It took me two years of very intense efforts, articles in the local papers, and finally, in May 2007, recycling officially started on Aegina Island.

In the south alone, we produce about 500 tons of solid waste daily, a large part of which is construction debris. With proper selection and recycling, we can reduce the debris ending up in the landfill by almost 90%. It requires an extra commitment from the owners, an extra effort from the contractors on site, but right now they all lack the awareness, sense of responsibility, and legal and financial incentive to do it.

YS: What is the relationship between cost efficiency and environmental sustainability?

Many architects think that by spending $10,000 per square meter (what many of the LEED certified buildings cost) is being sustainable or 'green'. I do not fully accept this as a solution. There are houses built of adobe or straw-bale that cost about $100 per square meter, and require lots of personal labor. Some people are suspicious of their quality, but I have visited these straw-bale houses

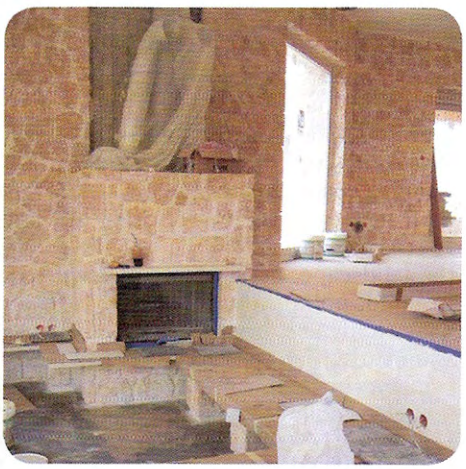

Elias Messinas

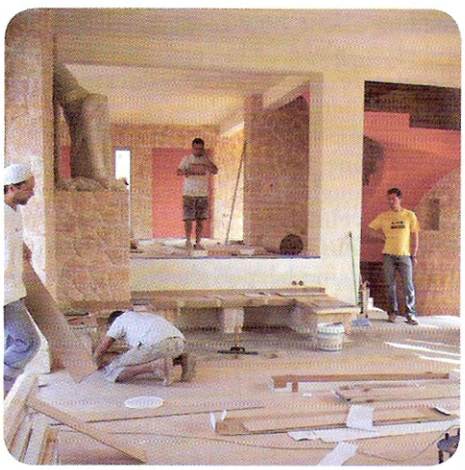
and have been very comfortable. There is of course a middle ground between those two edges. The middle ground is, first of all, common sense and the right intention. We do not have to deplete 30% of earth's ecosystems in order to build enough wealth to afford to build a LEED certified building. We can build buildings that are both sustainable and priced in a way that can be affordable.

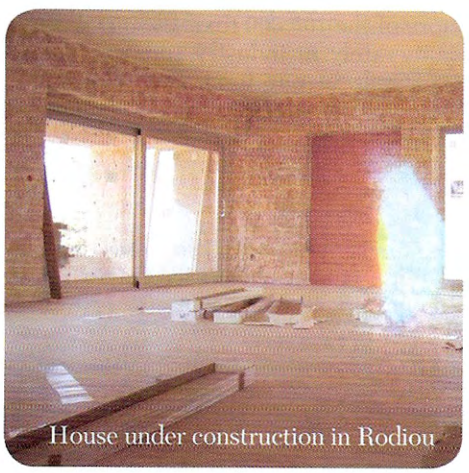
This does not only refer to our wallet, but also in terms of how much the earth can provide for us and how much waste (emissions, etc.) we dump back to the earth's ecological systems.

Sustainability is connected with a long term view of our actions today. We have to remind ourselves that whatever we do today has repercussions in the near future not only to future generations, but also to earth's ecosystems. The same way we have been spoiled by buying cheap goods that come from a factory in China, and pollute the air, soil and water, using perhaps child labor and/or no labor rights, shipping it across the seas polluting the air and the oceans, and finally arriving to our country, being used for a few weeks and then ending up in a landfill, the same way, we are spoiled to build cheaply and think that we are actually gaining from the process. We are not. By building cheaply, we harm. By 'saving money' and avoid insulating our house, for example, we pay 10 times more in heating and cooling. By 'saving money' and taking a cheap architect (or no architect at all) we end up with a badly designed house, with wrong orientations, overheating, or not sufficiently ventilated or without sufficient natural light, and therefore we pay dearly in electrical bills, and with our health and happiness. We can also pay with our exposure to harmful environments, such as geo-magnetic and electro-magnetic fields, radon, chemical emissions and indoor air pollution. In other words, as people take surgery seriously, they should also take building their house seriously.

Those who have no idea about what is an ecological building will end the conversation by saying that 'it is too expensive'. This is a myth, since a properly oriented house does not cost more than a non-properly oriented house. That already saves you 15-20% in heating and ventilation. If you properly insulate your house, you may pay 8-10% more in construction, but you will save 30% or more in heating and cooling. So it is possible to not spend more in construction costs, or pay a mere 8-10%

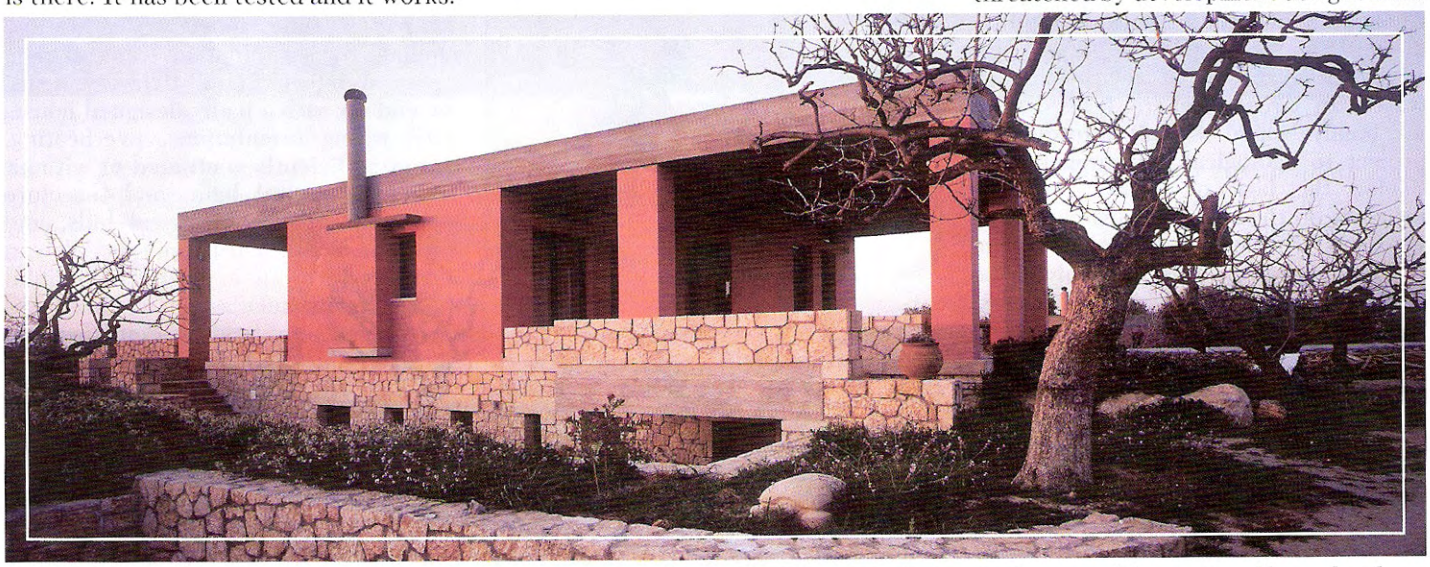





House under construction in Rodiou

more, but to save 40-50% in heating, cooling and lighting bills in the long run. Once the house is properly oriented, properly shaded, passively cooled and properly insulated and it is already saving 50-60% in electrical, heating and cooling bills, then one can also decide to use renewable energy and low or no emission technologies for the supplementary heating and cooling needed. Applying all the possible environmental-friendly technologies can skyrocket the budget. I do not recommend that for every client, but if a client wants to minimize their fossil fuel emissions, then the technology is there. It has been tested and it works.

one company in Germany that produces paints and varnishes, which has such natural processes and ingredients, that they not only fully publish their ingredients, they also compost any waste that remains from the production process. The compost they make then goes to fertilize the plants from which they get their colors! This is a real closed no-waste loop of production (or what Bill McDonough would call a 'cradle-to-cradle' process). When you use their paints, the place smells like orange – their base ingredient – and you can use the room right away.



YS: Your website states, "Most building materials are not designed with human health in mind." What are the health hazards that come into play here? Please give examples of safe (and just as durable) materials that can be used.

The unfortunate part is that it is not only the building industry that is using toxics in their products. There are very few products today that do not contain one or more of the 100,000 toxic chemicals used deliberately in industry today. We find chemicals in our food, bed, clothing... even in deodorants and shampoos! There is no ending. It is therefore not surprising that the building industry is no exception.

The 'sick building' syndrome is the result of those chemicals that we find in glues, laminates, carpets, furniture, floors, paints, you name it. You will notice that even those paints that claim to be 'ecological' never publish their ingredients. If you ask the company, they usually do not release them. There is

YS: Industrialization has done wonders for creating jobs in urban settings. It also has shifted the population so that a large percentage of the population now lives (and consumes) more in urban areas. What implications does environmental design have on jobs?

This is exactly what E.F. Schumacher, the English economist who also wrote "Small is Beautiful" (wholeheartedly recommended to anyone who likes reading about how to make this world a better place, why and how), wrote about. He spoke about education and 'intermediate technology'— a kind of technology that is not necessarily hi-tech as one would find in a city, but is good enough to help people improve their livelihoods, and still provide labor intensive enough to keep people employed in the periphery (not having to move to the city to find work which usually does not happen and people end up unemployed living in slums).

Developing the periphery does not always mean building factories in the periphery, since these factories are often too sophisticated for the local population. They therefore do not improve their livelihood, and bring people from the city to work in them, therefore increasing commuting. Also, often building factories or highways in small communities destroys the natural ecological systems that not only sustain the local fauna and flora, but the communities themselves. When these are destroyed, the communities loose, what is called, "the commons"- the natural ecosystems that give them work, food, biomass to heat, etc. They are threatened by development designed and implemented from city offices that have never set foot there to really understand the issues.

A perfect example is where we lived in Greece, on Aegina Island. You could see how the island was loosing its identity. Local people-instead of cultivating their land with pistachio trees, olive trees, grapes, almonds, potatoes, and other locally found produce-abandoned their fields, sold their land to development, and ended up spending the rest of their lives sitting at cafes, doing nothing. In effect, money corrupted the people, neglected the fields, replaced crops with concrete buildings, and has been turning the island for the past 15 years, into a sleeping resort for Athenians, who keep their houses closed for most of the year. In the meantime, their houses affect the landscape, use up natural resources to build, pollute the air (since they are badly built and insufficiently insulated) and overburden the electrical grid in the summer by overusing air conditioning units for cooling. To make this worse, for an island with no local water supply

(Continued on page 37)