

INTEGRATING AWARENESS AND EXPERTISE INTO PROJECT DESIGN



Ruba Alabed

AR Architectes is an architecture firm established in 2003 and located in Paris. The firm specializes in architectural design that combines new technologies with engineering in energy control and natural resources restoration in landscaping and building. AR Architectes has many references in:

- ▶ **Eco-building:** industrial buildings, fabrics, wastewater treatment plants
- ▶ **Eco-remodeling:** social housing, fabrics, family houses
- ▶ **Eco-urbanism and landscaping:** eco-districts, integrated development zone, housing estate, urban parks

Under the supervision of Ruba Alabed, graduated from architect Ecole Spéciale d'Architectes and specialized in HQE (High Environmental Quality) approach, AR Architectes serves both the private and the public sectors. Ruba Alabed was a keynote speaker at Sustainability Week.

Why has sustainability suddenly become the focus issue of architecture, infrastructure, and urban development?

We suddenly figured out that the main CO2 impact on the environment is directly related to construction. Today, we are talking about transportation, which has a very negative impact on the environment. We are also talking about pollution and the global warming of our planet, but I believe the major blow to the planet is coming from construction. Today more and more people, especially architects, landscapers, engineers and consultants, are concerned about the impact of construction. We have the intelligence and the know-how so we can work together to apply methodologies for sustainability. Sustainability is not a sudden thing, but rather it came as a consequence of what we did for the last fifty and sixty years. We heavily used concrete and industrial materials saying that the planet is capable of absorbing the pollution that we are putting into the air and the sea. Now we realize that this not true. And so we started thinking about saving nature. Architecture was the first to introduce concepts that were eventually developed into methodologies for sustainability.

Are we talking about environmental benefits only, or are there economic benefits to building green and in a sustainable way?

Sustainability has both economic and environmental benefits. People could save money by not consuming more and more

energy, and by trying to introduce weather- and wind-friendly measures and methods in geotechnical engineering whenever possible. It is very possible to have a sustainable building that is cost effective with benefits on the space inside the construction. It takes a global thinking; rules and regulations should be implemented by the governments and with the help of the private sector to force companies to deal more with the environment. Today we cannot say that it's really cheaper to build green because the material is still expensive and not as available as the usual materials used for construction. It is a new industry that will grow, and developers have to change the way they construct. In Europe, they faced the same problem when they started discussing sustainability, but now this concept is flourishing because of the awareness of the clients who are demanding increasingly sustainable buildings.

How is environmental construction carried out in France and Europe, in general?

In France, we have a certification for environmental construction called HEQ (High Environmental Quality), which it is structured into fourteen targets aimed at ensuring construction in a sustainable way, and at having a low impact on the outside environment with features for interior sustainability elements. It creates a relationship between the interior and the exterior that should be completely studied and balanced to have the least negative impact on the environment. All of this is done during the planning stages. It also has to be programmed and we have to see what the construction site could offer. Then we apply water management, energy management, and waste management strategies. We also take into consideration biodiversity, so we have to deal with all these elements in order to have a complete environmental project.

What is the role of the government? Is this certification enforced on the developers?

All tenders done by the public ask for designers specialized in environmental design and construction. The design team should be comprised of people who have know-how. The same applies for construction companies. However, there is not enough experience in designing and implementing environmental green buildings because this concept was introduced only two years ago. The already finished residential or industrial green projects have become landmarks for other people or potential clients to see how green and environmental buildings should be.

Why are the certificates not the same across all countries? We see one in the US, another in France, and yet others in Germany and the UK?

The environment is related to the construction site, and that is why each country has its own certification. This is normal because you have to take into consideration that an environment is made up of soil, wind, sun, and the habitats of people. So it's a combination of all this that created a specific certification relative to each country. The problem in the Arab world is that they want to apply the American certification, but each country has its own target, meteorology, climatology, geotechnical data, and many other components of the environment. So you cannot apply one way of thinking to a country. It's very important that each country does its own

certification that is adaptable to its environment. QSAS in Qatar is a good example of what I'm trying to explain. The Qataris created their own certification and they did it right. We also have our office in Doha. As an architectural firm, we approved the QSAS for Qatar and we are directly in contact with Barwa, who wrote the QSAS. They will very soon have it online and people will be able to download it for a fee. The QSAS took the LEED, the German certification, HEQ, and many other certifications and adapted them to the country. If we say that LEED certification is the most popular in the world because the United States is a big country, then we are talking about the supremacy of one certification over the other – but each country has to have its own certification.

What major projects have been achieved by your firm in France and elsewhere?

Over the past six years, we have been designing an average of four to five projects each year, where all the issues of sustainability have been integrated into the design. It is a prerequisite for us that we also supervise the construction so all of our environmental proposals are properly applied.

We have several projects in France on the outskirts of Paris. AR Architectes has designed ecological sewage treatment plants for industrial buildings, where all elements of energy management, biodiversity, and environmental cleanliness are integrated. We ensure that these types of projects are open to the public to make them aware that the construction is designed with minimal impact on the natural space – the natural space could be a forest, a river, or also people's surroundings – taking into consideration the noise, smell, and the air. A sewage treatment plant in the south of France is also designed by us. It has been designed as a compact building where the concrete has a very low impact on the environment. The building is completely open to the public and we are applying biodiversity to the site by choosing the correct plants, and creating ponds where the quality of water was so good that all the frogs and the butterflies came back, and in so doing created ecological habitats and nurseries for fish. We applied all the ecological insulations, replaced the concrete with ecological material such as timber, and used cellular pads as insulations inside the walls. In addition, we applied a system of renewable energy for the freshness, heating, and green roof recuperation of rain water. So we integrated all the green practices in one construction project and this is how we deal with all our projects. For us, we strive to design the exterior and interior space taking into consideration how it will be occupied.

What about other projects abroad?

We worked on a very challenging project in Jeddah. We were sub consultant designers for ADPI, the firm that won the competition to design the new airport in Jeddah. We were the sub consultants to design a huge garden that will filtrate all the gray water coming out of the terminal – about 1,000 m³ per day – and recycle it in a 25,000 m² garden which will filtrate the gray water and then inject it again into the terminal for the sanitary use and for cleaning purposes outside it. This project is now a tender and the construction has been chosen by the global civil aviation which is the client of this

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project. This endeavor has the LEED certification and water management is one of the targets in the certification process.

Which project really conveys your vision as an architect?

It's the Eco-District project north of France, where we see the application of global thinking rather than pure architecture in the design of parts of a city. It's an urban design that links all targets of a city in terms of how people will live, and how energy, waste, and transportation will be treated and integrated into this district. We created employment, social employment and green employment that will operate and maintain the site thus also creating social sustainability. This project involved a competition, which we won, and the municipality recently referred to our project while writing a how to guide to designing this eco-district.

Being Lebanese, what do you tell the government and the private sector about the importance of applying sustainable measures in urban planning and construction?

Today in Europe, these issues have been already thought of. We have a lack of natural resources in the Middle East, and we need to think very quickly about ways to renew existing natural resources and new technologies to integrate them into our construction and urban design.



