

# INTERVIEW

## Building Integrated Solar Envelopes *Interview with Roberto Fedrizzi*

The SHC Programme finalized its work on Building Integrated Solar Envelope Systems for HVAC and Lighting (Task 56) this month. To learn first-hand of the Task's impact on buildings, we asked Roberto Fedrizzi, the Task Operating Agent, to share some of his thoughts on this 4-year project.



is a large potential for creating fruitful and innovative businesses. The scaling up to a mass-market could be accelerated by the actions of policymakers to harmonize building codes and make energy communities a reality since this is believed to require maximizing the surfaces available to capture solar energy.

### What were the benefits of running this as an IEA SHC Task?

**Roberto:** Having a project such as this in the framework of IEA SHC Tasks guarantees the availability of a support network that can assist the project in various steps, such as dissemination and communication activities and review of outcomes. The name itself, SHC Tasks, is synonymous with high-quality work and results and prompts experts and external partners to participate and contribute to activities with enthusiasm.

### Will we see more work in this area in the IEA SHC Programme?

**Roberto:** SHC Task 56 has come to an end, but several other Tasks are active in this area, among which is SHC Task 63 on solar neighborhood planning, SHC Task 60 on the application of PVT collectors in HVAC systems and IEA PVPS Task 15 on BIPV systems. There is still a lot to do though so the Task experts compiled a list of topics that either other SHC Tasks or a new Task should take on.

### Why is a project like this needed?

**Roberto Fedrizzi (Roberto):** Projects like this SHC Task are needed because they push industry and researchers to focus on topics relevant for the energy transition and foster advances in energy technologies, be it solar envelope systems or other technologies. Plus, the experiences and knowledge shared in this cooperative environment allow participants to look at the same problem with new eyes.

### What is the current status of the technology?

**Roberto:** Building integrated solar envelope systems are increasingly entering the construction market, but we are not there quite yet. The integration of active components such as photovoltaic panels and solar thermal collectors still represents a niche market. The notable exception here is shading devices, which have a well-established market in the residential and tertiary building sectors. The construction sector is experiencing a drift towards industrialization, and building integrated solar envelope systems will likely gain shares of the market thanks to joint ventures between innovative companies and new business models oriented to offer systemic design and construction packages.

### Is there one result or outcome that surprised you?

**Roberto:** Innovation is not only about brand-new concepts. There is also a lot going on in the improvement of traditional solutions, for example, blinds, roller shutters, and textile screens. Here, we've seen advances in the shapes of slats, the use of retro-reflective surfaces, and the integration of PV and solar thermal elements, and lastly, motorization.

### Do you have a Task success story from an end-user or industry to share?

**Roberto:** SolarWall from Canada has been working with much success for more than three decades, with millions of square feet of SolarWall air heating systems installed across the globe. Two years ago, the company established a strategic collaboration with a large Chinese manufacturer, which gives more reasons for the hope that this technology will have a bright future. This is proof that despite all the challenges, with good ideas and determination, it is possible to upscale the market and have a significant impact.

### How has the Task's work supported capacity and skill-building?

**Roberto:** A cooperative environment, like the one found in SHC Tasks, is key to addressing issues with open minds and a constructive attitude. Sharing ideas with colleagues with diverse working and cultural backgrounds on common topics not only enriches personal views but also effectively improves the know-how. What is really important is that the Task results do not stay within the group of experts, but are widely disseminated to target stakeholders.

### What is the future of the technology – new developments, markets, policies, etc.?

**Roberto:** The technology of solar envelope solutions is progressing toward intrinsically systemic solutions that are designed for multifunctional performance. Prefabrication and integral design of solutions into construction packages will play an important role in this process. This market is still vastly unexplored so there