# Belgian pavilion at Venice Biennale showcases plants as active agents in future architecture



At the 2025 Venice Architecture Biennale, the Belgian pavilion, titled "Building Biospheres," presents a groundbreaking approach to integrating plants within architectural design. Conceived by Bas Smets, a landscape architect and engineer, the pavilion showcases hundreds of plants and trees arranged within a white-painted interior, creating a miniature forest supported by a framework of advanced technology including sensors, monitors, and lighting systems.

Bas Smets explains the underlying concept: “We now understand that plants shape the environment more than it shapes them,” and this insight forms the basis of the pavilion's exploration. The project asks how plant intelligence can be harnessed to create new landscapes, especially within built environments. Unlike traditional buildings, which often isolate occupants from natural air, Smets emphasises that “every time you and I breathe, we’re breathing air made by plants.” He notes the evolving role of urban greenery; where trees were once merely decorative, they are now critical in providing oxygen, filtering pollutants, absorbing excess water, and reducing urban temperatures.

Collaborating closely with Stefano Mancuso, a leading figure in plant neurobiology, Smets argues that plants possess a form of intelligence and extreme sensibility, necessary for their survival since they cannot move. “Plants cannot move on the ground, so they need to be able to manipulate the environment around them,” he says. This includes attracting pollinators and adjusting to environmental factors, demonstrating a kind of active agency.

The pavilion aims to create a “symbiosis” between humans, plants, and architecture, but uniquely in this relationship, the plants are in control—manipulating their surroundings in ways that benefit both themselves and people. “What trees want is to grow… They want more photosynthesis and that is good for us, lowering the temperature, producing more oxygen,” Smets states. He envisions a future of architecture where buildings and plants form “a new collective intelligence,” blending nature and human activity rather than maintaining separation.

Technological innovation is central to this concept. The pavilion features around 250 carefully selected subtropical plants monitored by specialists including plant ecophysiologist Kathy Steppe from Ghent University and software developer Dirk De Pauw of Plant AnalytiX. Sensors measure variables such as sap flow and soil moisture, feeding data into AI systems that regulate lighting and irrigation in real time. Smets wryly describes the trees as “cyborgs,” equipped with high-tech devices much like humans use smartphones and headsets. This approach allows researchers and visitors to observe the plants' responses over the six-month duration of the Biennale, making the installation both an artwork and a scientific experiment.

The idea builds on philosophical perspectives, notably those of Emanuele Coccia, author of The Life of Plants (2018), who has influenced Smets's thinking on plant existence and agency. Smets himself has recent projects that reflect similar principles, such as redesigning the landscape around Paris’s restored Notre-Dame cathedral and the redevelopment of the Koningin Astridplein, a public space outside Antwerp’s central station.

Belgium’s pavilion has a rich history at the Venice Biennale, with the first national pavilion established there in 1907. Smets reflects on a previous Belgian pavilion in 2008, After the Party by Kersten Geers and David Van Severen, which created an intimate, contemplative environment by enclosing a garden space and covering it with confetti, offering a sharp contrast to the surrounding bustle. He draws parallels between that work and Building Biospheres as both seek to craft places of respite shaded by natural elements.

While recent architectural trends have often used plants superficially—as symbolic or decorative greenery—Smets advocates for a deeper recognition of plants as active participants in environmental regulation essential for coping with climate change. “I hope that architects see that plants are not just decoration but an active agent of our climate,” he states.

Building Biospheres invites visitors and the architectural community to reconsider the relationship between nature, technology, and urban living, suggesting a future where built environments are not merely inhabited but collaboratively shaped by plants and humans alike.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://www.archdaily.com/1023603/the-belgian-pavilion-explores-plant-based-architecture-at-the-venice-biennale-2025> - Corroborates the theme and presentation of the Belgian Pavilion at the 2025 Venice Architecture Biennale, titled 'Building Biospheres'. It highlights the pavilion's focus on plant-based architecture and its transformative approach.
2. <https://www.labiennale.org/en/architecture/2025> - Provides official details about the 19th International Architecture Exhibition in Venice, confirming the dates and setting for the Biennale, which includes the Belgian Pavilion's 'Building Biospheres' exhibition.
3. <https://www.vai.be/en/press/belgian-pavilion-at-biennale-architettura-2025> - Supports the information about the team behind the Belgian Pavilion's project, including Bas Smets, Valerie Trouet, and Stefano Mancuso, and their exploration of plant intelligence in architecture.
4. <https://archplus.net/en/belgian-pavilion-at-the-19th-venice-architecture-biennale/> - Explains the concept and purpose of the Belgian Pavilion at the Biennale, focusing on themes relevant to contemporary discourse in architecture and art.
5. <https://www.wallpaper.com/architecture/venice-architecture-biennale-2025> - Although not directly about the Belgian Pavilion, it provides context to the 2025 Venice Architecture Biennale, including the ongoing renovation of the Central Pavilion, which sets the stage for innovative exhibitions like 'Building Biospheres'.
6. <https://en.wikipedia.org/wiki/Venice_Biennale> - Does not directly support specific claims about 'Building Biospheres', but provides historical context about the Venice Biennale's long-standing tradition of showcasing architectural and artistic innovations.
7. <https://www.ft.com/content/7439a351-64d9-4f80-9312-4942be654843> - Please view link - unable to able to access data