

DRAFT 2011 CELA ABSTRACT

Horticultural Building Systems: Evolution and Research Futures By Richard Lloyd Hindle

"Both modes of building-building as cultivating, Latin *colere, cultura*, and building as the raising up of edifices, *aedificare* -are comprised within genuine building, that is, dwelling."

-Martin Heidegger, *Building, Thinking, Dwelling*.

This paper traces the evolution of Horticultural Building Systems; a term coined by the author, from glass-houses to horticultural cryogenic preservation chambers and beyond in an attempt to situate contemporary trends in vegetated architecture, such as green roofs and living walls, within a historical lineage inclusive of their tectonic, technologic, and typological evolution. In addition to creating a historical and theoretical framework with which to understand the current ubiquity of vegetated architecture in speculative and built projects internationally, this paper proposes new directions for research, design pedagogy, and collaboration. Suggesting that critical dialogue, peer review, and the open exchange of information replace proprietary innovations made by industry and patent developers.

Horticultural Building Systems are defined here as the instance where vegetation and an architectural system exist in a mutually defined and intentionally designed relationship that supports plant growth and an architectonic concept. This definition allows for the history of Horticultural Building Systems to be traced through the seemingly disparate evolutions of horticultural and architectural technology that link the glass house and Crystal Palace to modern architecture and current trends in green architecture. Theories of tectonic culture, modern architecture, and horticultural innovation are placed in direct dialogue with patents and architectural case studies to elucidate a history of Horticultural Building Systems that is inclusive of tectonic, technologic, typological and horticultural histories. The design of the Horticultural Building System for Jean Nouvel's "Green Blade: 10,000 Santa Monica Boulevard" will be used as a contemporary case study for advanced horticultural systems integrated into building systems and architecture. Technological and architectural precedents for this system will be presented along with patented technology dating back to 1937.

As the desire for Horticultural Building Systems grows culturally so will the need for critical dialogue and peer review in horticulture, landscape, and architecture alike. The rise of Horticultural Building Systems in speculative and built architecture leaves many questions unanswered, as every site and system becomes a new architectural and horticultural experiment. A disparity exists between the ubiquity of "green" or vegetated building systems in architectural and what is actually known about the design, construction, history, and theory of these experimental systems. This disparity represents fertile ground for collaborative research and future pedagogies that integrate horticultural sciences, building system engineering, architecture and landscape. The "Horticultural Building System Studio", taught at the University of Oregon, will be presented as a case study for this multidisciplinary design and research.

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