

Living in the Landscape: Emergent Technologies + Old Models

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Thanks to an established concrete industry in Miami's backyard, Miami-Dade County has a natural inclination towards building almost entirely in concrete. There is a belief that a residential project of steel and glass would be cost-prohibitive; that there isn't enough skilled labor on hand, and so on. Ironically, we have old models, dating back to the 1950s, of structures made of concrete, wood, steel and hybrid systems. Simple, rational, efficient, cost-effective buildings that celebrate the tropics, these designs lend feasible and innovative alternatives for Miami's future buildings.

South Florida's postwar architects - such as Paul Rudolf and others - gave birth to a tropical modern school of thought, developing regional interpretations of the International Style by turning to local landscape, climate and materials to inform their designs. In an era of optimism and experimentation, these architects married building traditions with passive systems, new technologies, and innovative construction techniques. Emphasis on construction methodology was central to their work and became a model for sustainable design in the tropics.

While as a movement Tropical Modernism spanned only a couple of decades, the ideas embedded in these designs are particularly relevant today. Their goals are echoed repeatedly in our expanding material discourse and made current again because of the green movement and emergent technologies. Today's higher-performing materials (i.e. thermal insulation and low-emissivity glass) allow the architect to reconsider these past models for construction.

This design project relies on a back-to-the-basics approach – wherein each design decision was organized around three questions that challenge the culture for building big: what's necessary; how can we minimize our impact on the earth; and what can we really build?

Specifically studying the Tropical Modern models, we sought alternatives to concrete, instead exploring steel and glass as the superstructure. As a result, we wasted fewer materials, simplified the assembly, and reduced construction cost and time, all the while allowing for increased cross-ventilation and a heightened sense of living within the landscape. We engaged new materials and construction strategies – including insulation on all six sides (icynine, rigid and batt insulation); vapor barriers; 9/16" thick thermal glass; and a smart thermostat. The flat roof will conceal future solar panels and extensive gutters and drains necessary for a rainwater harvesting system.

Elevated 5 feet, the project includes 100' of glass – 50' spanning both front and back, with four sets of sliding doors that allow the house to be entirely open when desired. Also included is 800 sf of outdoor living space, with shutters along the front façade lending privacy and protection against the elements. These details, and the position of the house at the center of a 330-foot-long lot, allow the house to meld seamlessly with the site's dense native landscaping. With interior and exterior spaces fused together, the experience is that of a floating tropical refuge.

The goal was to join found-poetic form and new folk architecture to convey a contemporary, non-sentimental, and pragmatic building language that resuscitates the Ancient, celebrates the Modern, and foresees an architecture without big style.

LIVING IN THE LANDSCAPE

EMERGENT TECHNOLOGIES + OLD MODELS

Thanks to an established concrete industry in Miami's backyard, Miami-Dade County has a natural inclination towards building almost entirely in concrete. There is a pervasive belief that a residential project made of steel and glass would be cost prohibitive; that there isn't enough skilled labor on hand, and so on. Ironically, we have old models, dating back to the 1950s and 60s, of structures made of concrete, wood, steel and hybrid systems. Simple, rational, efficient, cost-effective buildings that celebrate the tropics, these designs lend feasible and innovative alternatives for Miami's future buildings.

South Florida's postwar architects - such as Paul Rudolph and others - gave birth to a tropical modern school of thought, developing regional interpretations of the International Style by turning to local landscape, climate and materials to inform their designs. In an era of optimism and experimentation, these architects married building traditions with passive systems, new technologies, and innovative construction techniques. Emphasis on construction methodology was central to their work and became a model for sustainable design in the tropics.

While as a movement Tropical Modernism spanned only a couple of decades, the ideas embedded in these designs are particularly relevant today. Their goals are echoed repeatedly in our expanding material discourse, which has been made current again because of the green movement and emergent technologies. Today's higher-performing materials (such as thermal insulation and low-emissivity glass) also allow the architect to seriously reconsider these past models for construction.

This new design project relies on a back-to-the-basics approach - wherein each design decision was organized around three questions that challenge the culture for building big: what is necessary; how can we minimize our impact on the earth; and what can we really build?

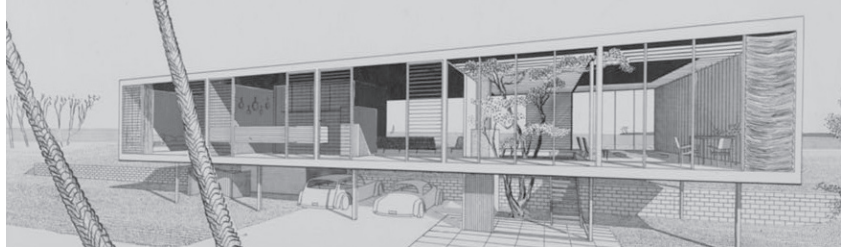
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Elevated 5' off the ground, the project includes 100' of uninterrupted glass - 50' spanning the full length of both the front and back sides of the house, with four sets of sliding glass doors that allow the house to be entirely open when desired. Also included is 800 sf of outdoor living space, with shutters along the front facade lending additional privacy and protection against the elements. These details, and the position of the house at the center of a 330-foot-long lot, allow the house to meld seamlessly with the site's dense native landscaping. With interior and exterior spaces fused together, the experience is that of a floating tropical refuge.

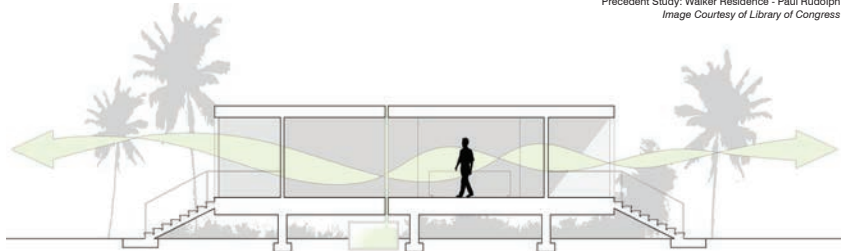
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Adapting Tropical Modernism for the 21st Century: Rendering of 2012 Private Residence, Miami, FL



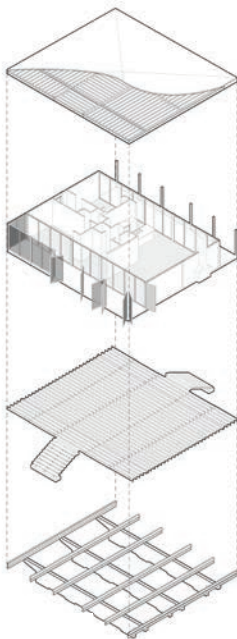
Precedent Study: Walker Residence - Paul Rudolph
Image Courtesy of Library of Congress



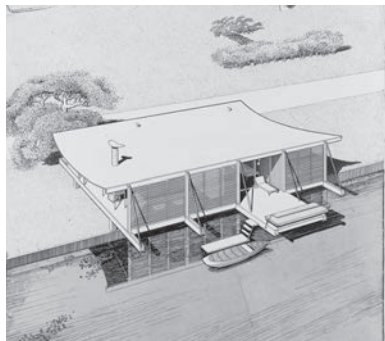
Section through 2012 Private Residence



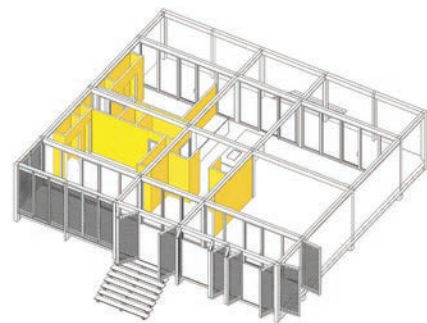
Construction Photo (Miami, FL 2012) - Showing Steel Superstructure



Axonometric - 2012 Private Residence



Precedent Study: Healy Guest House - Paul Rudolph
Image Courtesy of Library of Congress



Axonometric - 2012 Private Residence

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