

GROWING URBAN HABITATS

*SEEKING A
NEW HOUSING
DEVELOPMENT MODEL*



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DEVELOPMENT MODEL*

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Growing Urban Habitats documents and expands on Urban Habitats, an international design competition organized in 2005 by Habitat for Humanity of Greater Charlottesville and the Charlottesville Community Design Center. At stake was the equitable redevelopment of Sunrise, a local trailer park. The goal was to find the most innovative, yet feasible higher-density housing models, all without displacing the current residents.

A how-to guide and source book, Growing Urban Habitats draws from case studies selected from both the Urban Habitats submissions and contemporary housing projects throughout the United States. Included are designs by Anderson Anderson; Koning Eizenberg; Office dA; Onion Flats; Zoka Zola; and many more. Their work helps make Growing Urban Habitats a rich resource for designers, as well as housing developers, city officials, community groups and residents.

In re-examining static notions about housing, the authors pay particular attention to the role of language. "Housing", for instance, has taken on a negative connotation in North America. Frequently paired with "affordable" or "multi-family", it is used to describe low-income, government-assisted dwellings, considered inconsistent with the American Dream. The authors challenge these biases and long-standing preconceptions now embedded in the language we use. As a result, Growing Urban Habitats rephrases questions and renames issues. By doing so, the authors reveal opportunities for housing design that is respectful of the current residents and sustainable for generations to come.

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Build for Change : Harness Seasons

Energy, or how to create
a productive building



Buildings account for 40% of the nation's overall energy use. Reducing this consumption is a major task of redevelopment projects. How can you harness seasons to create a productive building?

: Employ wind, light, rain, heat.

It's self-evident and yet it's rarely implemented. Make use of all the free energy at your disposal, and be aware of what each season has to offer. Being able to cool your bedroom with a simple breeze, being able to cook your dinner without turning on the light, being able to heat your bathroom with water warmed in pipes underground.

: Reuse, recycle.

This too has been said before and it is worth repeating. Perhaps the most sustainable development approach is to reuse existing building stock. Rather than trying to start from scratch, work with what is there. It's likely to be close to infrastructure, it's likely to be centrally located and it's likely to have a history and patina that you'd never be able to create anew.

Project

Zoka Zola Zero Energy House

The Zero Energy House, designed in 2005 by architect Zoka Zola of Chicago, is an example of how to build for change and harness seasons at the scale of a single-family residence. Its goal was to design a zero-carbon emission building for Chicago's climate, characterized by very cold winters and hot, humid summers. The smart, elegant, split-level house does so by making full use of passive as well as active strategies.

The passive heating, cooling and ventilation were achieved primarily by intelligent layout decisions. Organizing the main house into two main zones negotiated by a central stair allowed the architects to work with varying floor-to-floor heights which can modulate light, air flow and acoustics. Generous living areas are located to the west, while compact bedrooms and bathrooms are stacked in the east. The kitchen is a single-story extension connecting to the multi-functional building. Clearly separating it from the living spaces limits odors and maximizes natural light. By organizing the building around a courtyard and locating openings deliberately, interior spaces receive sunlight in the winter but remain shaded in the summer. Shading is optimized by the location of trees and recessed windows at southern exposures. The building's active systems include a geothermal system for heating and cooling, solar thermal panels for producing hot water, as well as photovoltaic panels and a wind turbine to generate electricity.

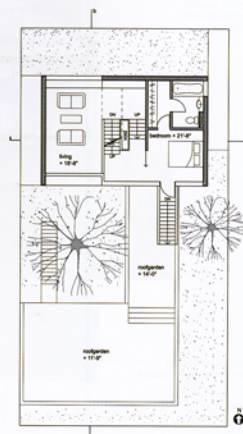
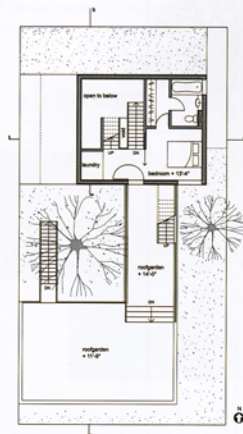
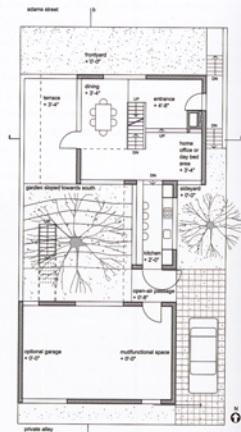
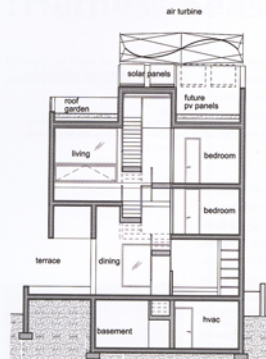


OPPOSITE

View from the courtyard of the Zero Energy House toward its living areas.

BELOW

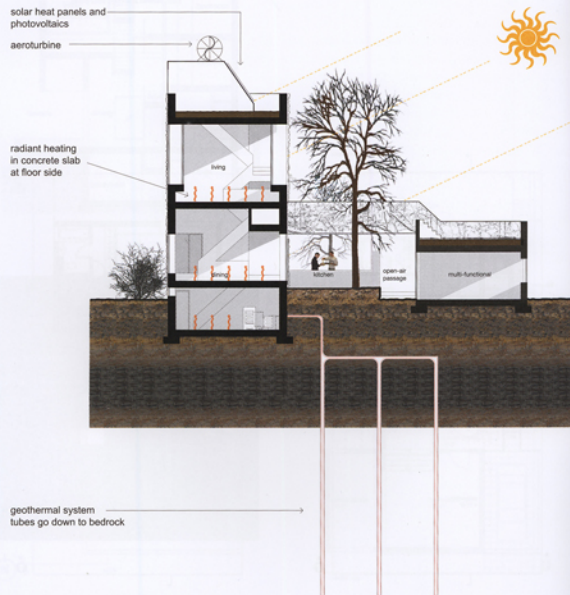
Overall view showing how building envelope and vegetation interrelate to maximize benefits of sun, wind, and shading.



OPPOSITE, ABOVE
Building section through main living areas.

OPPOSITE, BELOW
Site plan.

BELOW, LEFT TO RIGHT
First, second and third floor plans.



Besides harnessing the seasons in this way, the project also addresses the questions of urban renewal and long-term change. The choice to site the project on two adjacent vacant lots in an area of Chicago characterized by severe disinvestment but fully serviced by infrastructure, helps rebuild an existing neighborhood and conserves land, energy and transportation resources. Furthermore, the architect addresses what she calls “inter-generational responsibility” by providing the space and structure for both a ground-level “grandparent” addition and another story on the building. The design also anticipates the future conversion of the 19-by-30-foot accessory building.

Despite the specificity of its location, this project was designed as a prototype. Its principles have been applied to speculative multifamily development in Chicago. A further iteration has also been worked out for a site in Malaysia.

OPPOSITE

Section showing building performance in winter.

BELOW

Section showing building performance in summer.

