

High Density, Low Energy Housing For Los Angeles; Adapting The Urban Block For The Future



San Fernando Valley, Vertical Air Photo,

Hypothesis

As the cost of inner city housing continues to rise as a consequence of the pressures of suburban sprawl and the limits of global natural resources, is it reasonable to build low density housing like we do in Los Angeles, the single family dwelling on a ¼ acre lot? And, to consider a corollary proposition, how reasonable is it to expect that we can continue to build housing that depends upon present energy consumption levels of non-renewable energy sources? Considering the increasing levels of CO₂ in the upper atmosphere and the projected consequences of this fact, how long can we expect to be able to use hydrocarbon fuels for anything? And, considering these questions, is it possible to adapt the Jeffersonian paradigm of the independent husbandman on his own little estate (the LA house on its ¼ acre lot) in such a way that maintains the desirable features of this pattern of living while creating a much more sustainable future life style?

If you find these questions challenging you may care to join this studio. Our aims are to develop a new pattern of zoning, land use, and building design for the typical Los Angeles block that maintains the spatial and garden qualities for which the city is famous but using new building types, designs and materials that are kinder to the environment, energy efficient, and non-waste-producing. Pedagogic issues include: 1) a review of recent literature about the state of the globe, 2) the investigation of land use patterns and design strategies for gradually densifying the typical Los Angeles block; 3) the design of the prototype dwellings; 4) the thorough investigation of sustainable forms of building including issues of energy (and we really do want to achieve a “zero” energy dwelling type), recyclability, and water and waste management; and 5) a thorough investigation of all of the materials, equipment, and details to be applied in this building process.

Program Description

We will explore ways of increasing the density of the typical suburban neighborhood while, at the same time, maintaining the amenities of the single house. The idea of this new house type is that it can be built on a standard 50' x 150' city lot as an infill, retrofit proposition, at three times the density. By merely dividing the lot into three, long, parallel slots of space and placing a dwelling on each we can build three houses in the former space of one. Each lot will now have three houses: a house, an apartment, and a studio. Each part should be able to function more-or-less independently from the rest but they should all be able to be used together if desired and to form one, coherent, architectural whole. You may assume that a family changes in size from a single person to several people and back to a single person. Rather than moving each time the family changes, the house can be capable of

being used as one dwelling or several. Each house includes the following three parts:

The House:

The house should be a modest dwelling for a family of about four but with some provision for occasional guests. It should have some spatial distinction. The main space of the house should connect to the earth, a private garden space where the family might gather for various activities. There should be a place in the sun indoor and out. Every member of the house needs a place to be and work alone.

The Apartment:

This might be used as an attached family room, as a separate suite for a guest, a residence for an elder family member, a retirement flat, or as a minimum dwelling for a student, perhaps. It needs one space for living and sleeping with a bath and provisions for storage and cooking. The apartment also needs its own private outside space.

The Studio:

Many people like to work at home but need a place distinct from the house. The studio is this kind of place. It should be a large, tall space with north light for painting or other studio activity. There might be provision for a loft and there might be a private sunny place. The studio needs a small bath and a place to cook so that it might also be rented to a single person or used by a couple.

Site & Sustainability

Each dwelling needs a separate entrance. On-site parking for 3 cars is required for each group of three dwellings. Cars can use the service alley at the rear. We do not want to have to climb over or around cars, however, to get into the house. We are eager to economize on the use of energy and the well-thought out use of solar systems or some alternative energy source is mandatory. You should assume an energy credit from your connection to the power grid. We want to use natural ventilation as much as possible (air conditioning should not be needed for most of Los Angeles). Assume that the new houses are in a typical neighborhood (you will choose) of single-family houses that is changing. Assume that the pattern of land use that you are developing will gradually mix with and replace the existing houses. You should consider measures that give unifying characteristics to the neighborhood and street including trees, landscaping and paving. Even though your house has no setback requirements, pay attention to the general spatial zoning of the existing neighborhood. We will agree on a common zoning and volumetric specification in the first week.

Studio Structure/Schedule

We will follow this approximate schedule:

Week 1-2	Readings, Discussion, Site Selection Development site documents, set zoning limits
Week 3-4	Precedent studies, Site analysis, and site proposal
Week 5-7	Preliminary Design
Week 8-10	Design Development (Nov 9-12, GreenBuild Expo)
Week 12-14	Final Design/Presentation

Readings:

- [Fine Homebuilding](#), “Energy Efficient from the Ground Up”, March, 2004, pp. 74-79,
- [National Geographic](#), “The End of Cheap Oil”, June 2004, pp. 80-109.
- Orr, David W. [Earth in Mind: On Education, Environment and the Human Prospect](#), Island Press, Washington D.C., 1994.
- Roberts, Paul, [The End of Oil: On the Edge of a Perilous New World](#), Houghton Mifflin, NY, 2004.
- Salomon Thierry & Stephanie Bedel, [The Energy Saving House](#), Center for Alternative Technology Charity Ltd., 2003.
- USC Southern California Studies Center & The Brookings Institute for Urban and Metropolitan Policy, [Sprawl Hits The Wall](#), Los Angeles, 2002