(Re-)Constructing the Sustainable City: Toward A Green Affordable Housing Model for Los Angeles

Mary Jane Boltz
Senior Comprehensive Thesis
Urban and Environmental Policy
Occidental College
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PREFACE

The multiple meanings implicit in this paper's title – (Re-)Constructing the Sustainable City: Toward a Green Affordable Housing Model for Los Angeles – are perhaps easily understood (pun and all). I'd nonetheless like to devote a little space to making explicit what I mean by the title – and in particular, "(Re-)Constructing."

As many scholars are quick to point out, the city (whether defined as a political jurisdiction, a center of commerce, a collection of man-made structures, and/or a dense and diverse concentration of human capital) has arguably never been ecologically sustainable – that is to say, it has never been much concerned with sustaining the fragile human support systems on which it depends.[1]

sustainability that makes it, for me, the most meaningful and compelling approach to sustainability in existence today.

INTRODUCTION

<u>Personal Background</u>

  My own introduction to the world of affordable housing came two years ago in the form of a summer internship with a Los Angeles tenants' rights organization called the Coalition for Economic

the ability of future generations to meet their own needs."[21] As Satterthwaite recalls, "what [made] the Brundtland Commission's statement so important" at the time was that its visionary "insistence that [the] meeting [of] human [economic, social, cultural, health, and political] needs must be combined with ecological sustainability"[22]

Drawing on this multi-faceted understanding of sustainability, but distilling in particular the powerful triumvirate of environmental, economic and social goals, the "three-legged stool" or "3 E's" (for Ecology, Economy, Equity) model of sustainability soon emerged. Various visual models now exist to describe 3 E's sustainability (See Appendix A for three distinct representations), but common to all is the idea that true sustainability cannot exist without attention to each of the "three competing interests within civil society: economic development, environmental protection and social equity."[23]

certainly the world's mega-cities – will only continue to see unprecedented growth, presenting as yet unimaginable challenges to the provision of health, housing, food, education, etc. The material point, then, is that existing problems due to unsustainable patterns of consumption and waste generation are not going away any time soon; on the contrary, they will only become more grave. *Our Common World* seems to reflect this fundamental understanding. As Portney puts it,

> Certainly, the Brundtland Commission asserts that urban sustainability is important in industrialized nations if for no other reason than because cities are the places where large and growing proportions of the environmental and social problems reside [or originate].[30]

In other words, it is precisely the city's patent lack of sustainability that makes it the logical place in which to grow a renewable activism or, in Steven A. Moore's terms, in which to establish a 'regime of sustainability.'[31] For his part, Moore, a planner-architect who writes about the pursuit of the sustainable city in *Alternative Routes to the Sustainable City: Austin, Curitiba, and Frankfurt,* acknowledges that the sustainable city may ultimately "prove…a utopian project"[32] And yet he implies that in order to make any progress at all in addressing the fundamental problems of our time, we must invest ourselves fully in sustainability's pursuit. The pursuit of the sustainable city, then, is not simply admirable or well-intentioned, but necessary, urgent.

A Sustainable City Definition?

Importantly, there does not appear to be one, agreed-upon definition of the sustainable city in existence. Each scholar interested in sustainable cities seems to have developed his or her own definition to suit his or her own theoretical needs. Clearly referencing the Brundtland model of sustainability, Girardet considers the sustainable city one

> "that works so that all its citizens are able to meet their own needs without endangering the well-being of the natural world or the living conditions of other people, now or in the future.[33]

With such a definition, it is little wonder that Girardet cannot point to one sustainable city in existence, nor even a city that may hope to be considered sustainable in the future. For Moore, meanwhile, the sustainable city is a city that "negotiate[es] a balance between the competing social interests that alternately promote economic development, environmental protection, and social

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[30] Portney, Kent, 14.
[31] Moore, Steven A., 201
[32] Moore, Steven A., 196.
[33] Girardet, Herbert, "Sustainable Cities: A Contradiction in Terms?" 419.

equity."[34] In contrast to Girardet's definition, Moore's definition is exceedingly flexible, albeit very hard, if not impossible, to apply to real life – to real cities. Would we be able to recognize this balance if and when we see it? Or, more likely, might we be led to believe we see a balance that is not there?[35]   For his part, Portney seems to avoid defining the sustainable city altogether, offering up a more workable concept in its place: 'the city that takes sustainability seriously.' For him, these 'cities that take sustainability seriously'

> use broad definitions that go well beyond concern for the physical environment or creating jobs. They pursue sustainability at many levels and integrate concern for economic development, the environment, and quality of life across all activities of city government. [36]

In other words, a 'city that takes sustainability seriously' is one that is working towards "some operational version" of sustainability – some operational version of 3 E's sustainability.

that in capitalist societies, cities are inherently places of social stratification and economic inequality.[40] Given all of this, then, we can begin to perceive that cities may not be in the best position to address a given environmental, economic, or equity-related problem.

However, for Portney, the fact that it is not other jurisdictional units, but largely "cities around the world, including many in the U.S.," that have developed programs "concerned with becoming [more] sustainable, that appear to be working toward reducing the size of their ecological footprint," seems to demonstrates that cities may indeed serve as a driver of sustainability projects. There are many reasons why this might be. Interestingly, the Brundtland Report, written well before most of the present-day U.S. sustainable city initiatives were even conceived, seems to prefigure the s logical

focus permits an invaluable 'big picture' look at the current state of and continued prospects for green affordable housing in the region. After a general overview of what green affordable housing is and what it hopes to achieve in the following chapter, I will take up my focus on Los Angeles in Chapter 4.

III. THE BENEFITS (& ELEMENTS) OF
GREEN AFFORDABLE HOUSING

Words give expression to what is in our minds, as do buildings, but buildings must also interpret the material conditions of the world so as to solve real social and environmental problems.
– Steven A. Moore, *Alternative Routes to the Sustainable City: Austin, Curitiba, and Frankfurt*

Whether in the construction of new affordable housing or the in rehabilitation of older structures, incorporating green building practices into the design, construction, operation, and maintenance of affordable housing makes sense, benefiting tenants, communities, property owners, and the environment alike. In this chapter I illustrate how green affordable housing at once satisfies goals of greater social equity, economic vitality, and ecological health and thus may be situated within a framework of 3 E's sustainability.

SOCIAL EQUITY-BASED BENEFITS

In speaking of the benefits that green affordable housing affords low-income residents, Melinda Nichols, Board president of the Seattle-based Low Income Housing Institute asserts that,

average, middle-income household spends on utilities.[47] Families significantly below the poverty

line, meanwhile, have been shown to spend upwards of 19% of their income on utilities; in this way,

utilities represent a significant financial burden. This burden is demonstrated by the fact that in some

areas of the U.S. up to a quarter of evictions of low-income renters are due to inability to pay utility

bills.[48] But regardless of one's relative financial situation, as the literature from Santa Monica-based

Global Green USA's Greening Affordable Housing Initiative identifies,

> For families and individuals on limited budgets, even a relatively small reduction in monthly
> costs is significant. Money saved on utility bills becomes available for other household
> needs.[49]

It also bears mentioning that in Los Angeles – as with the rest of the nation – utility costs are rising

sharply and are projected only to increase. The economic relief afforded by increased energy

efficiency and reduced bills, then, cannot come too soon for the region's working families.

Elements of Green Affordable Housing #1: Energy Efficiency

In achieving its greater energy efficiency, green affordable developments might make use of any

number of particular materials, technologies, passive environmental control strategies, and/or active energy

generation systems. Relevant materials and technologies include EPA-certified Energy Star or other similarly

energy-efficient appliances and light fixtures, heating and cooling systems, high R-value (i.e., more insulating)

insulation, light-colored 'cool roofs,' and window glazing. Passive environmental control strategies can make

use of building orientation, a narrow footprint, window placement, open floor plans and more, all in order to

maximize natural daylighting and to take advantage of prevailing winds, thereby producing natural ventilation.

Green affordable housing developments that employ active energy generation may rely on solar photovoltaic

(PV) panels, gas- or wind-powered turbines, or combined-heat-and-power (CHP) generators (which can use

gas, geothermal energy, or "even woodchips").[50] That said, the use of on-site energy generation in affordable

housing development remains somewhat more limited due to the greater overhead costs still associated with

these technologies.

Improved Indoor Air Quality and Health

Green affordable housing also enhances equity in its commitment to improve buildings' air

quality. To achieve this better indoor air quality, green affordable housing places special emphasis

on the mitigation of the harmful toxins present in many building materials and on the prevention of

moisture build-up in homes.[51] These admittedly simple measures can have a dramatic impact on the health of low-income residents. Tony Proscio, author of the report, "Affordable Housing's Green Future: Building a Movement for Durable, Healthier, and More Efficient Housing," recounts that in the 1990s, advocates of housing, human services, and public health began to note that the poor quality of much low-income housing was "contribut[ing] to ill health[,] exposing residents to poisoning from lead-based paint and dust, or to respiratory risks from allergens, mold, and moisture."[52] Other sources find that apartment-dwellers on the whole are more likely to suffer the effects of bad air quality than homeowners simply due to the nature of multi-family housing, since "[a]partment units have less ventilation than houses, and renters have less individual control over their air quality."[53] Further, since low-income communities in urban areas are generally heavily impacted by outdoor air pollution, these communities possess high rates of asthma and other respiratory disease – conditions which are then exacerbated by the presence of toxic indoor air pollutants. This is certainly the case for Los Angeles: though the entire Metropolitan Region is a national leader in abysmal air quality, low-income communities of color situated beside the area's major freeways, other transit corridors, and around the ports of Los Angeles and Long Beach are the most health-impacted of all.[54] To be sure, the numerous sources of air pollution must be directly addressed in order to hope to reduce community impacts. But at the least, green affordable housing can seek to offset hopes to ensure healthy housing that will n aggravate residents' existing health conditions.

Elements of Green Affordable Housing #2: Indoor Air Quality

Chief among the contributors to indoor air pollution are volatile organic compounds, or VOCs, such as formaldehyde, perchloroethylene, acetone, toluene, and benzene. Emitted by most commonly used paints, carpets, insulation, glues, and fire retardants, VOCs have been linked to "ear, nose, and throat irritation, loss of coordination, and…damage to the liver and central nervous system."[55]

for 10-15 years after installation. In addition to causing ear, nose, and throat irritation, skin rashes, headaches, nosebleeds, and nausea, the EPA considers formaldehyde a probable human carcinogen.[56] Green affoedable housing standards thus promote the use of low- or no-VOC paints, carpets, adhesives, and sealants, formaldehyde-free cabinets and countertops, and linoleum, tile, or sustainably harvested wood or bamboo flooring in place of vinyl.[57] While low- or no-VOC products are cost-competitive with their VOC-bearing counterparts, formaldehyde-free materials are generally more expensive. At the least, any formaldehyde-containing wood products should be sealed with a (no-VOC) primer to prevent noxious offgassing. Finally, to preclude mold growth and the related health risks to residents, green building standards require improved ventilation. This is often achieved through the installation of exhaust systems that expel combustion by-products to the outside, thereby reducing the likelihood of moisture build-up.[58]

Increased Access to Transit, Jobs, and Services

Since truly sustainable affordable housing works to integrate developments with the surrounding community and to link residents with jobs and services, both individuals and their larger communities win. Part of a nationwide 'Smart Growth' movement to create communities that are dense, mixed-income, transit-oriented, and pedestrian-friendly, green affordable housing of necessity places multi-family, infill development in close proximity to transit and basic amenities. Naturally, this type of planning reduces the amount low-income families are forced to spend on transportation, which, for families living at the poverty level, can be a staggering 40 cents of every dollar earned.[59] In this way, transportation, like utilities, represents a significant financial burden to working families – but one that can be mitigated by thoughtful site selection and planning. Furthermore, since green affordable housing advocates the types of green and socializing spaces that foster both a sense of community and a sense of security, green affordable housing has the potential to fundamentally strengthen the social fabric of communities.[60] For this reason, the Southern California Association of Nonprofit Housing (SCANPH)'s Green Building Guide for Affordable Housing Developers urges affordable housing developers to consider incorporating into their projects outdoor community areas, including community gardens, which "enhance community by fostering pride in the high quality of the building [and its landscaping]."[61]

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[56] Global Green USA, "Top 20 No or Low-Cost Green Strategies," 3.
[57] Huchet, Peggy, "Sustainable Affordable Housing," 140.
[58] Global Green USA, "Top 20 No or Low-Cost Green Strategies, 3.
[59] Muto, Sheila, 1.
[60] Stein, Jeannine, "A New Standard of Living," 1.
[61] SCANPH, "Green Building Guide for Affordable Housing Developers," 1.

Green affordable housing may also seek to cultivate a sense of community and the skills of residents by providing on-site resident services, such as child care centers, after-school and tutoring programs, ESL classes, and the like. In Los Angeles, nonprofit developers like the Los Angeles Community Design Center and LINC Housing Corporation place particular emphasis on these kind of community-enriching services.   Ultimately, green affordable housing's attention both to residents' social and economic needs and their physical health derive from the same idea – the idea that, as Tony Proscio puts it, "the development of [all] homes…and communities can be a much greater contributor to the health and well-being of both…occupants and the wider society than they are now."[62]

Elements of Green Affordable Housing #3: Site Selection and Planning

To benefit both resident quality-of-life and the environment, only sites with easy access to jobs, services, and transit should be considered for green affordable housing development. This type of development, which places new projects in the contex

ENVIRONMENTAL BENEFITS

Finally, like the green building movement before it, green affordable housing is fundamentally concerned with minimizing environmental impacts both near a given building site and away from it, based on the understanding that buildings consume much of the world's resources and generate much of its waste and emissions, but – through more smarter resource use and greater efficiency – could consume and pollute a lot less.

Reduced Resource Use, Waste Generation, and Pollution

Today, buildings are responsible for a sixth of the world's fresh water withdrawals, a fourth of its wood harvest, and two-fifths of its material and energy flows. In the U.S., in particular, buildings account for 36-40% of all energy use, 65-70% of electricity use, 25% of water use, 12% of potable water use, and 30% of all wood and raw material use.[70] These same buildings generate 48% of CO_2 emissions (CO_2 being the biggest contributor to greenhouse gases), and about half of all municipal waste.[71]

When compared with conventional construction, green buildings on average reduce energy use by about 35%, water use by 30-50%, CO_2 emissions by 40%, and waste generation by 70%.[72] The local and regional environment benefits from this reduced demand on infrastructure for energy and water and from reduced waste going to landfills. Green building's attention to reducing stormwater runoff also means local ecosystems experience less pollution and local communities less infrastructure damage. Naturally, the larger or global environment benefits from reduced resource consumption (especially of energy, lumber) and from reduced greenhouse gas emissions and other pollution. Thus, whether we consider environmental problems at a global scale (deforestation, climate change) or at a local one (Los Angeles' loss of habitats and open space and poor regional air quality), we can say that green affordable housing is fundamentally committed to preserving ecosystems (and indeed human systems).

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[70] Global Green USA, "Green Building Resource Center: Why Build Green," 1. Moore, Michelle, "Green Buildings Matter," A11. Bardacke, Ted, "Green Affordable Housing," 3.
[71] Ibid.
[72] Moore, Michelle, A11.

**Elements of Green Affordable Housing #4 & #5: Resources/Materials Conservation
& Water Conservation**

In addition to the use of smart site planning and the incorporation of energy-efficient strategies, green affordable housing can mitigate negative environmental impacts by minimizing and recycling building materials and construction waste and by conserving precious water. Where applicable, green affordable housing encourages the use of recycled-content materials, including drywall, insulation, carpet, plastics, and board. Where lumber is concerned, the use of reclaimed, engineered, sustainably-harvested, and locally-sourced lumber all seek to combat deforestation and pollution to varying degrees. So-called 'advanced framing' construction further reduces the need for new lumber.[73] Other construction materials, such as beams, windows, doors, and siding can be salvaged from other buildings. Fly-ash, a byproduct of burning coal typically disposed of in landfills, should be used to replace Portland cement (the industry standard) in concrete, as it requires less energy for production and less water for installation. Landscaping can easily employ compost as fertilizer. Finally, green affordable housing should provide a means for resident recycling.

Water conservation is also a key part of the fight to preserve natural resources. Low-flow or water-efficient appliances, such as clothes washers, dishwashers, toilets, faucets, and showerheads, can save an incredible volume of water, as can the use of greywater (wastewater not including sewage) or reclaimed rainwater in toilets. Water-efficient, low-maintenance landscaping that makes use of native, drought-tolerant plants can also significantly reduce water consumption. Where irrigation is still needed, capturing and storing

IV. RECENT ADVANCES IN GREEN AFFORDABLE
HOUSING DEVELOPMENT

We are in the initial stages of this movement.
– Walker Wells, "Episode 17: Green Building and Affordable Housing,"
LINC Housing Corporation podcast

The past few years have seen significant strides in the development of green affordable housing in the U.S. – and in LA County, in particular. Though local green affordable housing advocates have been championing the issue for over a decade now,[75] Matthew Marin, author of "Incorporating Green Design Elements to Enhance Multifamily Communities" notes that among developers, green affordable housing "has been rapidly evolving from a niche topic [even] three to four years ago [to something more of the] mainstream" today.[76] Importantly, affordable housing developers are not only talking about 'going green,' but, in many parts of the country, actually transforming the way they do business. With respect to Los Angeles, in particular, the region's commitment to green affordable housing development in recent years can be attributed to three key factors: first, greater incentives, second, new policy mandates, and finally, the very nature of not-for-profit development. I examine incentives, policies, and nonprofits below.

INCENTIVES

Espousing the value of market-based incentives for green development (e.g., fast-track permitting, density bonuses), Michelle Moore, Vice President of the U.S. Green Building Council, reasons that they "don't add cost to government budgets, [yet] provide [compelling incentives] to developers."[77] Her point certainly has merit with regard to the for-profit sector (and particularly in light of the sweeping budget deficits produced by the current economic downturn). However, when it comes to affordable housing, which is funded through collaboration between government agencies, financial institutions, and non-profit community development corporations, the most effective incentives for green development are directly tied to its financing. State allocation of low-income

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[75] Most notably, Global Green USA kicked off its Green Affordable Housing Initiative in 1997.
[76] Marin, Matthew, "Incorporating Green Design Elements to Enhance Multifamily Communities," 1.
[77] Moore, Michelle, A11.

> [T]hese programs are important because they raise the general level of awareness of green building and help to stimulate the demand for green materials and technology… ultimately lower[ing] the costs of implementation.[88]

These public green building programs also arguably create new jobs and fuel further innovation in green technology.[89] However, policies that seek to mandate green building practices in commercial and residential buildings (affordable housing, included) have the opportunity to play an even bigger role in promoting greener development and in producing still greater windfalls in new jobs, new technologies and lower costs associated with green technology. A few examples of these progressive policies already exist at the federal, state, and local level. Though limited, such policy mandates are helping to pave the way (if only in the figurative sense, as paving eliminates permeable surfaces) to a future in which green affordable housing represents the norm.

Federal Policy

nonprofit developers should consider green building. This local action to greening affordable housing is examined in more depth in the next section.

Local Policy

In many ways, policies mandating greener development – and greener affordable housing – have been strongest at the local level. Currently, various LA County cites maintain greener building regulations than are required by state law; for example, the City of Los Angeles requires transit-oriented development within Community Redevelopment Agency (CRA) project zones, Santa Monica maintains energy efficiency standards 10-15% above than those mandated by Title 24 for all new construction, and a good number of the region's cities mandate things like construction and demolition waste recycling and urban runoff mitigation.

Considerably fewer LA County Cities have sought to enact green building ordinances or programs; when they have, these ordinances have provided for green development to varying degrees, oftentimes limiting green building standards to public buildings (Long Beach, Los Angeles until recently) and/or providing financial incentives rather than strict mandates (Pasadena). By contrast, Santa Monica has maintained a very progressive Green Building Program that balances both mandates and financial incentives. On April 23, 2008, the City of Los Angeles passed its Green Building Ordinance, requiring all buildings of more than 50,000 ft^2 or 50 units to meet the intent of LEED certification and that all municipal buildings now meet the intent of LEED Silver.[98] Though the ordinance will not create much new pressure on affordable housing development given that most nonprofit developers of a certain size are already regularly incorporating green elements in their developments, the ordinance *will* likely provide indirect aid to these same developers, since the increased demand for green goods and services will help bring down costs, create new green jobs, and drive further innovations in green technology.[99]

recent news article, "Green Housing Not Just for the Rich," presses this point).[100] However, as I

hope to have shown, Angeleno nonprofit developers are actually ahead of their for-profit

counterparts, incorporating green elements more of the time, if in less outwardly visible ways. And

yet, the reason for this cannot be attributed solely to funding-related incentives (much less relatively

weak policies). Leslie Hoffman, Executive Director of New York City's Earth Pledge Foundation

states that

> In many ways, [non-profit] affordable housing is ahead of for-profit…because these groups
> are mission-based and really want to ensure that residents have the best housing for the long-

V. BARRIERS TO THE MOVEMENT TO MAKE

DESIGN

BUILDING CODES & OTHER REGULATORY REQUIREMENTS

In many countries, building code adoption may occur at the national level; in the U.S., codes are adopted chiefly at the local level (and to a much lesser degree, at the county and state levels).[103] And across the U.S., myriad municipal building codes – many originally enacted to protect "human health, safety, and welfare" – effectively undermine the efforts of sustainable building construction and maintenance, prohibiting, for example, greywater recycling or rainwater harvesting, which could easily supply water to toilets or irrigation to landscaping, respectively.[104] Los Angeles County building codes are no exception. In fact, some codes are arguably becoming *less* sustainable as time goes on: Just this year, the City's Housing Department (LAHD) mandated the installation of air conditioning in all new units.[105] Such a sweeping requirement poses a significant setback to the goals of sustainability, negating the use of systems that can employ site planning, building design, materials, energy-efficient cooling systems and natural ventilation to great success. This is just one example of the way the current regulatory system irresponsibly – if unintentionally – "ignore[s] the role it plays in encouraging the depletion of natural resources and the demise of natural systems upon which everyone's health, safety, and survival ultimately depend."[106]

Across Los Angeles County, another key regulatory requirement that poses a significant challenge to the development of sustainable and affordable housing is minimum parking standards. On the one hand, as I've discussed previously, green affordable housing seeks to place development by transit nodes so as to best serve the needs of residents – many of whom may not be able to afford a car and already rely on public transit – and to best serve the environment through reduced fossil fuel consumption and emissions. At the same time, however, cities continue to levy what amounts to a 'policy tax' on affordable residential development, requiring that all new projects provide at least a certain amount of new parking; typically, this translates to the creation of multiple parking spaces per new unit. Based on the assumption that most households have at least one car in need of parking, these regulations were intended to be exceedingly practical. However, that they are uniformly applied to all new developments without regard fo

To be sure, the City of Los Angeles may be said to be "more forgiving" on this issue than adjacent cities in LA County because the City will generally allow one space/unit for senior housing, whereas most other cities will agree to nothing less than two.[107] But the City still has a ways to go. Currently, the nonprofit Los Angeles developer A Community of Friends is developing a new project to house its senior and special needs clients. Though the vast majority of these residents are unable to drive, the developer is nonetheless forced to make the case to the City about why it shouldn't need to provide the two spaces/unit mandated by the building's location in a CRA project area.[108]

It bears mentioning that such parking requirements often are not merely unnecessary, but exceedingly costly. Depending on land values and parking structure construction costs, developers may pay upwards of $10,000 per parking space.[109] For a development that is to be 50 units (as in the case of the aforementioned A Community of Friends project), parking adds up to a sizeable chunk of change – and space – that cannot be allocated to other needs, whether it is the creation of more units or the inclusion of green elements. For this reason, Tim Kohut asserts that "parking is the driver" of the LACDC's developments, and indeed, he concedes, it may sometimes be "a crippler:" Constrained to set aside precious space for parking, which cannot go underground due to prohibitive costs, LACDC can only imagine their projects so many different ways. As a result, the developer has utilized the same at-grade 'deck,' or 'podium' parking in a great many of their projects. Hart Village, completed last year in Canoga Park, conforms to this design.

NIMBY-ISM / COMMUNITY RESISTANCE TO GREEN STRATEGIES

Complicating any efforts to address minimum parking requirements, however, is the fact that parking in Los Angeles is not merely a policy issue, but a hugely political one.   Because homeowners and businesses fear the loss of their street parking – if needlessly – the opposition from NIMBY (not-in-my-backyard) community members to reduced parking requirements for affordable developments can be fierce. For his part, Walker Wells, head of the Green Building Program at Global Green USA, confirms that any decrease in parking set-asides is "a political hard-sell."[110]

In addition to the parking issue, NIMBY-ism poses other challenges to the development of green affordable housing. In the late 1980s, affluent Angeleno homeowners, desirous of 'defending' their property values and the low-rise residential 'character' of their communities ('threatened' as

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[107] Kohut, Tim. Interview.
[108] Global Green USA, Enterprise Community Partners, SCANPH. Strategic Planning Session.
[109] Livable Places, "Policy: Rethinking Parking Requirements," 1.
[110] Global Green USA, Enterprise Community Partners, SCANPH. Strategic Planning Session.

both were by more dense multi-family and commercial construction) allied with environmentalists to place strict limits on development. They couched their elitist, essentially anti-growth movement in the socially acceptable, environmental terms of 'Slow Growth.'[111] Today, these same slow-growth types continue to mobilize in protest of the more dense, slightly taller, and in some cases, mixed-use developments that the Smart Growth movement – and green affordable housing – promotes. By delaying permitting and construction timelines – sometimes slowing the production of much needed affordable units to a snail's pace – NIMBYs effectively impede the efforts of greener development.

<div align="center">FUNDING/FINANCING</div>

COSTS & BUDGETARY CONSTRAINTS

Currently, the 'green premium' – or how much more it costs to build green, on average, compared to conventional construction – has been shown to be around 2-4%.[112] While commercial residential development can easily take on these added costs because they will simply pass them on to buyers, in affordable housing, by contrast, "development fees and the income levels of eligible purchasers or tenants are capped," making it "impossible for additional costs to be absorbed [by residents]."[113] In order to cover the slightly higher costs of green, then, developers must increase the 'funding gap' – or the differential that already exists between the total cost of development and rents or mortgages – and seek out still more funds from the complex matrix of affordable housing funding sources. While some of these additional funds may come in the form of equity, and thus do not have to be paid back, others funds may likely take the form of conventional long-term debt. In this way, says Blayne Sutton-Wills, taking on the extra first costs of green development (even if the green elements should pay the developer back over time) can be seen as "a little more treacherous" for affordable housing developers than for market-rate developers. After all, he points out, "4% more on a project that's $50 to $100 million is a lot [more money, a lot more debt]."[114]

In recent years, green affordable housing advocates like Global Green USA have worked hard to demonstrate that certain green elements can be 'cost-neutral' – or priced competitively with conventional materials or technologies – and that the process of 'value-engineering' – that is, cutting costs in some areas to allow additional expenditures in others – can help to green a project at no extra cost. The thinking seems to be that because they've carefully profiled the relevant demonstration

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[111] Fulton, William B., *The Reluctant Metropolis: The Politics of Urban Growth in Los Angeles,* 48.
[112] Pierce, Neal, "Sustainable Cities," A6.
[113] Noonan, Patty and Jon Vogel, 130.
[114] Sutton-Wills, Blayne. Interview.

enough or quick enough return on investment.[117] Additionally, affordable housing developers ma2 75 1.Ts

[so]…one big obstacle can be finding [workers] to apply green technology,"[120] Many affordable

VI. TOWARD GREEN AFFORDABLE HOUSING AS STANDARD PRACTICE: SOME RECOMMENDATIONS

We cannot afford to not build green.
– Global Green USA, *Blueprint for Greening Affordable Housing*

In this final chapter, I propose a range of ideas for how the green affordable housing community might better meet its goals of making green affordable housing standard practice. I use the term, 'green affordable housing community' in the broadest possible sense to include any developers who currently are building affordable green projects or developers that are looking to do so, financial institutions and foundations who are funding green affordable housing or those that would like to, organizations that provide technical assistance to green affordable housing developers and, finally, anyone and everyone else interested in advancing green affordable housing development (or rehabilitation), whether through much needed policy change, message articulation and/or a grassroots organizing. Based on the observation that green affordable housing activism has proved

accomplish on their own. In Los Angeles, however, the prospects for such a partnership seem pretty

dim. At various points in the past, the region's green affordable housing community has attempted to

foster meaningful dialogue with officials like Mercedes Marquez, the General Manager of the LA

City Housing Department – to little effect.[133] In any case, I would argue that a partnership of another

kind – one forged between advocates and community stakeholders – has the potential to effect even

more change than 'friends in high places.' Various sources agree, arguing that substantive

partnerships that "bring…communities together to share information, embrace new technologies, and

demand action" are nothing less than "the key to a more sustainable future."[134] For her part,

Stephanie Taylor, Work Group Coordinator of Green LA, an environmental and environmental

justice advocacy group, brings up the important point that green affordable advocates must also

devote attention to what will happen with the coalition, once formed. At this point, she says, it is

crucial that leaders work effectively to keep coalition members connected to each other and engaged

with the larger movement.[135]

RECOMMENDATIONS TO DEVELOPERS WANTING TO GO GREEN
GO AT YOUR OWN PACE

[3] **Take an incremental or ad hoc approach. Employ value-engineering.**

To be sure, in affordable housing development – and in construction, generally – it is ill-advised

to attempt to add on costly features on the fly or to 'fix as you go.' In fact, when it comes to green

development in particular, it's been widely recognized that the cost of integrating green into a project

increases exponentially over time.[136] However, it is my belief that affordable housing developers

going green for the first time can benefit from an overall incremental approach to greening their

developments. In other words, when tackling their first green projects, affordable housing

developers can 'start out small,' utilizing value-engineering to take on the lowest risk green features

and keep their budget in check. After all, says Blayne Sutton-Wills, it is "the low-cost strategies

[that] give you the most benefit."[137] According to Sutton-Wills, some of the best low-cost, high-

return elements are related to design – for example, building orientation and the inclusion of window

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[133] Most recently, officials from LAHD, DBS, CRA, and some other LA City departments were invited to the February 28 strategic planning session – but all were conspicuously absent, save for one representative who had been at the CRA two months.
[134]

setbacks (See Appendix B – Global Green USA's 'Top 25 in Low Cost Strategies' – for more of the best in low-cost strategies). Tim Kohut agrees. Describing Los Angeles Community Design Center's philosophy toward greening its projects, he states,

> We [first] try to design the most efficient [site orientation and] layout; then come the enhancements, such as awnings. If you run into problems, you can peel off your bells and whistles.

By contrast, when too many of these 'enhancements' are embedded in the design at the outset, a developer runs the risk of running out of money. Though conceptualizing green elements as 'bells and whistles' might distress those who object to value-engineering (on the basis that it may cut major green components in order to reduce costs), this is actually a highly pragmatic approach that takes into account not only budget realities, but the fact that unanticipated costs do crop up during construction. Accordingly, this kind of approach is great for the affordable housing developer just beginning to go green.

As developers amass more experience with green elements and funding mechanisms, they naturally become better prepared to undertake increasingly ambitious green projects that can address sustainability issues more fully. In this way, incrementalism and value-engineering emphasize flexibility and pragmatism rather than some rigid or dogmatic approach to greening – yet still work toward the same goals of increased sustainability. And, not insignificantly, this type of developmental perspective also seems to take into account the fact that green technologies – and even sustainability goals themselves – are constantly changing and evolving.

BEYOND BEST PRACTICES
[3] **Learn from others' missteps.**

Blayne Sutton-Wills raises the great point that compiling a list of best practices alone is a one-sided project; knowing the particular missteps taken by others, meanwhile, can help developers avoid the same fate. Based on this understanding, Sutton-Wills has been trying to have conversations with developers about "things that they've tried to do that have backfired." For example, though never mentioned in the glowing press on the project, the operation of Colorado Court, an SRO and affordable green demonstration project in Santa Monica that produces all of its own energy, has been rumored to have encountered operational setbacks. Solar panels haven't turned out to be as productive as everyone had hoped. Further, the City of Santa Monica invested in a micro-turbine to produce electricity, but since the micro-turbine's installation, the technology has changed so much

that the turbine was not easily fixed when it broke, nor is it even used anymore. Though the project was designed to give back to the grid, Sutton-Wills suspects that it doesn't.

As for LACDC's past problems, Kohut says that most have been budget-related. On one project, he says, the cost of concrete, copper, and other materials shot up, but, because of funding requirements, they were bound to move forward with development and ultimately had to re-design – i.e., pull things out of the design – as they went. In the case of another project, Harbor View Place, Kohut recalls that tens of thousands of dollars were lost because development stalled in order to fix some green features. In the end, he admits that Harbor View Place "suffered a lot through value-engineering," with many green elements scrapped by project's end. However, both experiences were undeniably instructive for Kohut and LACDC.

Where possible, developers should look into a holding green charrette, or "collaboration-focused meeting" in order to best provide for integrated and cost-effective green design.[140] Those who should attend the charrette include the architect, project manager, structural engineer, civil engineer, mechanical engineer, HVAC designer, general contractor, landscape architect, construction manager, and a facilitator with green building expertise (whether one of the above or an outside figure).[141] The idea, then, is that a charrette is a space in which all of these people involved in the planning and construction of a building can come together and, aided by their different backgrounds and areas of expertise, explore all the "opportunities for green design…in a thorough, creative, and effective way."[142] Importantly, for Sheila Greenlaw-Fink, this collaboration doesn't end with the charrette: In the case of truly green building, she says, "you need the [entire] team [working together,] integrating design strategies from start to finish."[143]

COLLECTIVE BUY-IN

[3] **Educate residents about the buildings in which they live.**

Studies have found that people don't open their windows nearly as much as they're thought to.[144] Such a finding has clear implications for the relative success of natural ventilation systems in green affordable housing: Because some natural ventilation systems depend on air being able to flow in and out of units and common areas through windows, tenants who keep their windows closed most of the time significantly negate, if unintentionally, the effectiveness of this means of temperature

to administer such tenant education might consider looking into forming partnerships with tenant organizations that may be able to provide some assistance.

STAKEHOLDER PARTICIPATION

3 **Cultivate citizen participation in design: Hold community forums.**

As Steven A. Moore points out, "Projects are likely to be considered successful by more people when experts depend on citizens to define them."[146] Though he is speaking about sustainability projects in general, this rule of thumb can be applied directly to those projects of the green affordable housing variety. Though building design and construction are arguably theoretically rigorous and technically complex, we must be critical of the repeated elevation of technocratic expertise above citizen-held knowledge. To be sure, this recommendation re-ignites the efficiency vs. inclusion debate all too familiar to the disciplines of planning and architecture. Moore, weighing in on the side of inclusion, reasons that, "Although time is…expended in the process, the inclusion of multiple perspectives in the design of artifacts and institutions renders them more satisfying" and just.[147] And yet, Moore also suggests that if the technocrat-citizen balance is right, we can have at once meaningful participation *and* effective design. Design, he argues, can actually be improved by "proliferating the means of thinking, not by relegating thinking to yet more experts."[148] Numerous other community-minded scholars concur. In order to better, in Moore's terms, proliferate the means of thinking, green affordable housing developers should consider holding a community forum during the planning stages of a new project. With the project architect on hand to hear, respond to, and incorporate community needs and ii5 332.u8onity NumeEbol TD[(ino to)-5,(to, a0005 on c0 Td[(Cuchit2.u8oni1(ch

their windows due to security or safety concerns.[149] If this is the case, the use of natural ventilation strategies that rely on residents to open their windows would be a inappropriate. According to Tim Kohut, a good alternative to employing traditional natural ventilation is to make passive heating and cooling features "as automated as possible" by ducting air into units and including a fan and set of sensors in each unit.[150] Then, when a resident goes to turn on the fan, the system can asses whether it's cooler outside than indoors and if it is, simply open the flap to pull the outdoor air inside, thereby cooling the unit.[151] It is only by becoming intimately familiar with residents' needs that architects can design buildings that truly will serve their .

'VISIBLE GREEN'

3   **Don't be afraid to show a building's 'green-ness.'**

Blayne Sutton-Wills, Walker Wells and others have posed the question, 'What is acceptable green?' That is, 'Do people need to see it (in, for example, the form of PV panels or a LEED certification)?' Although the consensus seems to be that green affordable housing shouldn't need to look a certain way, visibly green affordable housing projects do seem able to better counteract or mitigate much of the NIMBY hostility to affordable housing. Because of this fact, green affordable housing developers should not shy away from including the so-called "glamorous" green elements in their projects, if financing may be found. Speaking of LACDC's take on "big-ticket green," Tim Kohut says, "We don't like to be in your face, but we'll show it [the green features]." By way of explanation, he describes how LACDC often makes use of PV panels, but will not go so far as to install them vertically, launching a subtle jab at Colorado Court, a Santa Monica green affordable housing demonstration project that is covered in hundreds of (low-energy-capturing) vertical panels, many of which, Kohut notes, are obstructed from direct sunlight, shaded as they are by the palm tree landscaping.

For this reason, foundations, furnished as they are with resources, must step up to the plate and undertake the necessary performance evaluation and data collection. Indeed, Enterprise Green Communities recently embarked on the long-term monitoring of various green elements' first costs vs. life-cycle costs, their rate of payback (i.e., the time in which a green product's operational savings pay for the additional first costs), and their return on investment (i.e., the total operational savings over a product's life).[158] As Brooke explains,

> Enterprise is capturing data from its Green Communities portfolio to make the case to mainstream financial institutions that green affordable developments are economically superior to conventional projects.[159]

But other organizations invested – in the various senses of the word –in green affordable housing (for example, Bay Area LISC, NeighborWorks America) need to take up the reins in tracking performance, as well.

RECOMMENDATIONS TO TECHNICAL ASSISTANCE ORGANIZATIONS
TRAINING
3   **Hold Contractor Training Sessions**

As time goes by, construction workers' green building knowledge will undoubtedly continue to improve in Los Angeles, due in large part to the commitment of key local institutions like LA Trade-Tech, with offers an array of "career-technical programs that align with [the top] 17 industries in [LA's] Green Technology Sector."[160] In the meantime, though, technical assistance organizations like SCANPH are in a great position to help out with the much-needed training of workers in green technology. As Blayne Sutton-Wills points out, member organizations like SCANPH that have strong relationships with labor unions can put these ties to use – can, as it were "call on their friends in labor" – to set up joint green building training sessions for contractors, as well plumbers, pipefitters and carpenters.[161] In this way, these organizations can directly address the current mismatch between the still-limited supply of workers with green building skills and the ever-growing demand for these workers, thereby helping to power the next phase of the green affordable housing revolution.

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[158] Bardacke, Ted, 13-17. Global Green USA, "Blueprint for Greening Affordable Housing," 174-175.
[159] Brooke, Jill, A11.
[160] Los Angeles Trade-Technical College, "Los Angeles Trade-Technical College A Leader in Workforce Development," 2.
[161] Sutton-Wills, Blayne. Interview.

Specific Energy Policy Recommendations to Advance Green Affordable Housing

1) **Replace mandated master metering with opportunities for sub-metering, smart metering.**

   In all energy-consumptive buildings, meters are used to keep track of the energy supplied to

> "Property owners that invest in higher energy efficiency upgrades are currently penalized in [that] utility allowances for more efficient properties are the same as for conventional properties [meaning that] owners are not able to charge higher rents."[164]

Set by local public housing authorities (PHAs), utility allowance schedules approximate residents' monthly energy use.[165] And, because affordable housing maintains that the monthly housing burden be no more than 30% of household income, developers must thus deduct the utility allowance from the household's maximum housing burden in order to arrive at the maximum affordable rent that they may charge that household. However, some green affordable developers complain that the current utility allowances do not take into account the increased energy-efficiency (and lower energy costs) of their buildings, wrongfully disallowing them from charging higher rents and recovering their investment costs. As Global Green USA explains,

> because older, less efficient buildings dominate the sample [of affordable units on which PHAs base their utility allowances], utility allowances rarely reflect actual utility costs in newer, energy-efficient buildings, and developers are unable to capture the cost savings of up-front investments in energy efficiency,"[166]

Global Green USA, the California Energy Commission, and developers like Tim Kohut alike urge updates to utility allowances that would take into account resident energy savings and thereby allow developers to set higher rents that still remain within the range of affordability.

But while this type of utility allowance adjustment may indeed encourage more developers to implement more energy-efficient strategies, raising residents' rents by the same amount by which energy efficiency is lowering their utility bills negates pretty much all of the economic benefits that green affordable housing currently provides tenants. Thus, it is my belief that if a new utility allowance schedule is to be created for energy efficient buildings, it should reflect some kind of compromise – with residents able to retain most of the energy savings and developers able to see slightly higher rents.

3) Reform net metering.

By way of explaining California's net metering policy, Tim Kohut says, "If you generate 200 kilowatts, but only use 100, you're not credited the balance."[167] Though California's net metering system is stronger than that of most states (for example, allowing month-to-month rollover of user-

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[164] California Energy Commission, 36.
[165] Global Green USA, "Blueprint for Greening Affordable Housing," 178.
[166] Ibid.
[167] Kohut, Tim. Interview.

generated energy credits), it nonetheless retains one major flaw: All energy credits expire at the end of the year. Unlike states like Colorado and New Jersey which pay producers of excess energy annually, in California, the owner of a renewable energy system that generates more energy than it needs over the course of a year is not only "billed zero and [does] not make any money," but is not credited this energy for future use.[168] Utilities effectively claim this excess energy, which they then sell it other electricity consumers – or even, plausibly, to the same user whose system generated the excess energy, should his or her system not produce enough energy to meet future energy loads.

CONCLUSIONS

Beyond green buildings, we're pushing for centers of green living.[169]
– Tim Kohut

       In *Alternative Routes to the Sustainable City,* Steven A. Moore finds that there is no single path to the sustainable city. Ultimately, he says, "[E]ach city [moving towards sustainability] must make its own way" – its own path – building on local opportunities for sustainability.[170] What path

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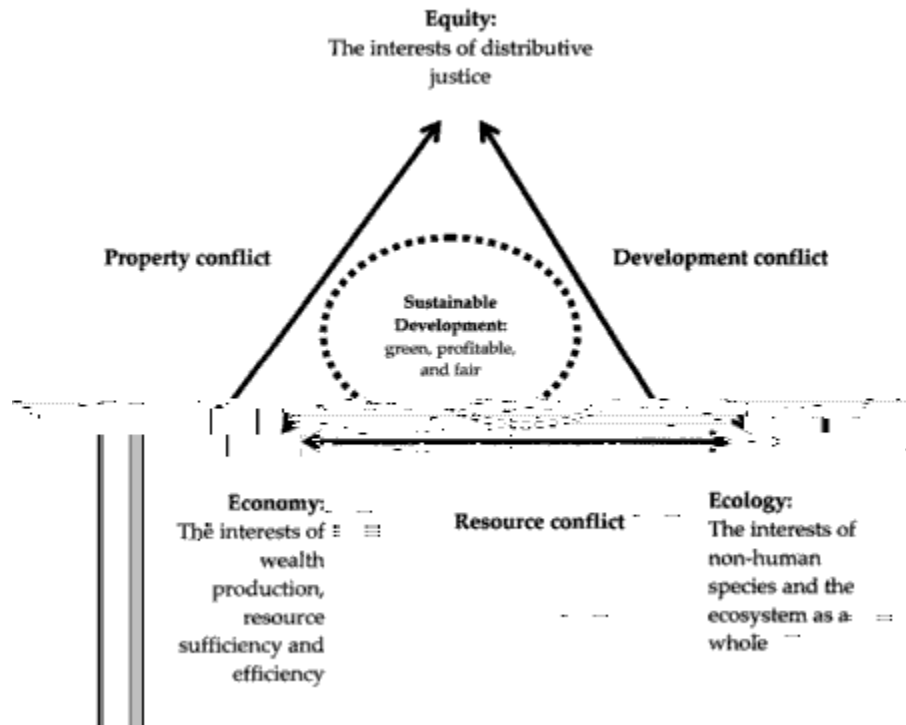   http://www.bayarealisc.org/bay_area/programs/connection_7772.shtml

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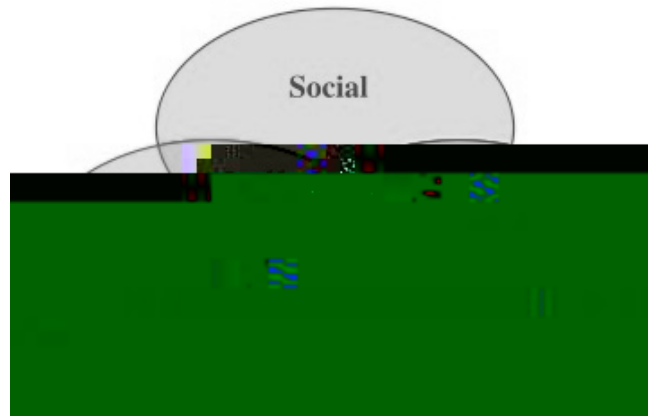
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APPENDIX A

Three Views of 3 E's Sustainability: Triangulated Model, Venn Diagram, Nested Circles

Equity:
The interests of distributive justice

Property conflict

Development conflict

Sustainable Development: green, profitable, and fair

Economy:
The interests of wealth production, resource sufficiency and efficiency

Resource conflict

Ecology:
The interests of non-human species and the ecosystem as a whole

Source: Steven A. Moore, *Alternative Routes to the Sustainable City: Austin, Curitiba, and Frankfurt.*

Social

Source: Gunder, Michael, "Sustainability: Planning's Redemption or Curse?"

Source: Sustainable Measures, "A Better View of Sustainable Community."