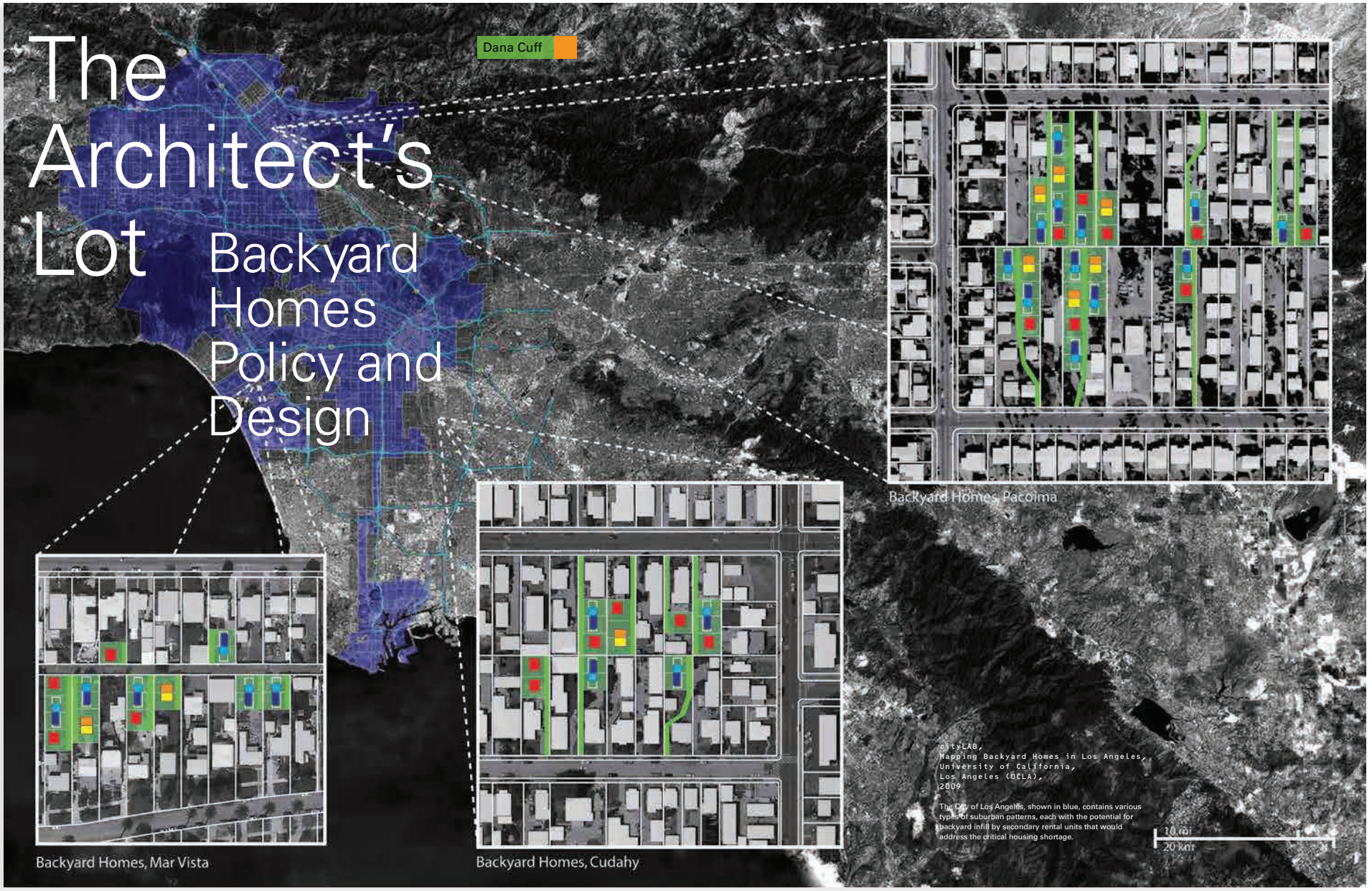
The Architect's Lot

Backyard Homes Policy and Design

Dana Cuff



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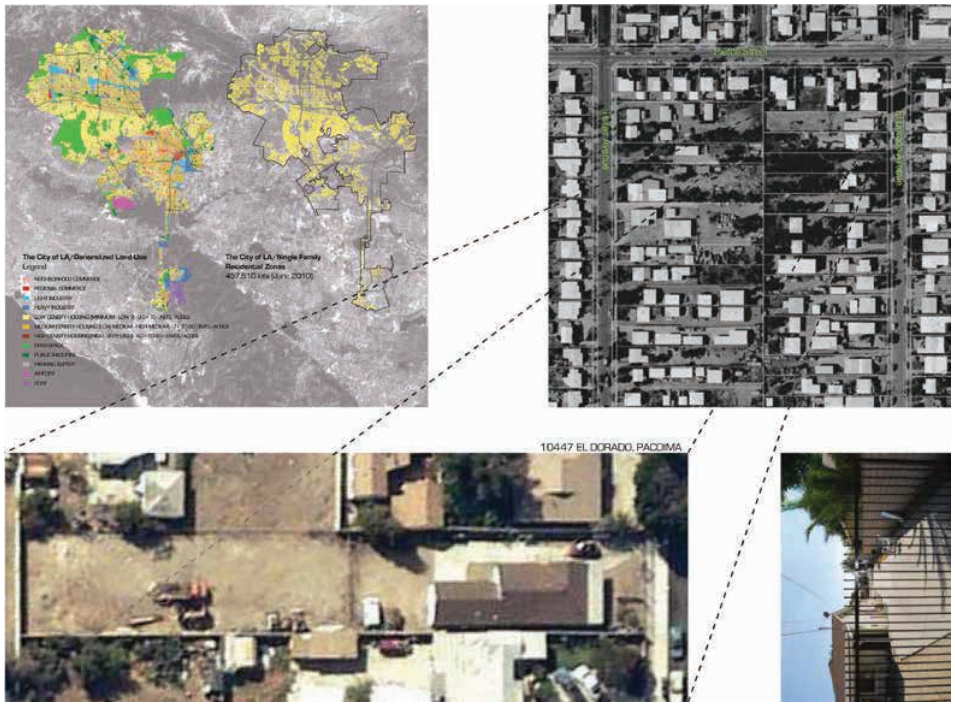
A new California law is bringing about a sea change in how the state's neighbourhoods are evolving. **Dana Cuff**, architectural professor and director of the cityLAB think tank at the University of California, Los Angeles, outlines how cityLAB's in-depth research and their development of a prototype 'backyard home' model have contributed to the establishment of the bill that enables the legal addition of a rental unit to all single-family homes. Its impact has been immediate, both empowering residents and opening up countless opportunities for architects – especially those at the outset of their career.

On 1 January 2017, California Assembly Bill 2299 (Bloom) became law, enabling every one of the state's 8,044,831 single-family homes to add a rental unit on their property.[1] This radical legislation in support of 'backyard homes' was the culminating achievement of cityLAB, the research and architectural design centre based at the University of California, Los Angeles (UCLA), in collaboration with partners in Northern California. Both policy-writing teams were comprised entirely of women architects and planners. Working under the auspices of Congressman Richard Bloom in Southern California (and Senator Bob Wieckowski in the north), in one fell swoop the American Dream took a decisive turn in the nation's most populous state.

Complementing a suite of additional policies intended to ease the housing crisis, the Accessory Dwelling Unit (ADU) or Backyard Homes law disrupts the very DNA of postwar housing. First, the standard home mortgage, devised for a single breadwinner's biological family, is legislatively redefined. With the household in demographic transformation, homeownership in decline nationwide, rents and housing prices rising precipitously in California, and homelessness also increasing, this is an important strategy for affordability and building wealth.[2] In addition, residential property 'ownership' itself is restructured. The single-family house, historically associated with privacy and the nuclear family, is now encouraged to share its homestead with another household. The rental 'granny flat' can serve multiple purposes, from sheltering extended family and caregivers, to mortgage relief. Another disruption stems from modelling state legislation on the indigenous practices of homeowners who have long reduced structural housing problems by building their own backyard homes. Now legal, newly built ADUs will not only assist with mortgage payments, but increase property values. Also, for the first time since the Second World War, housing people is prioritised over housing cars since lots within a half-mile (0.8 kilometre) of transit (defined broadly) can build without adding new parking spaces. Even in a city like Los Angeles, not known as transit-rich, the lion's share of properties meets this criterion. Finally, a measure of neighbourhood development control is returned to residents. Protests against large-scale housing complexes said to destroy neighbourhood character are quieted when new units are distributed across individual backyards (or within homes that can carve out an apartment). And all that 'free' land reduces overall housing costs, so that more units are likely to be built with lower rents.

Backyard homes are 'affordable housing' not because of subsidies, but because they economise in various ways that cityLAB has studied: new units have a lower combined cost for land and construction than do new single-family houses; property owners who can no longer afford their mortgage can remain in place with additional rental income; and many tenants will be related to the primary household (extended family, caregivers) rather than those able to pay the highest rent. Affordable housing means more here than the monthly payment on an individual unit; it implies the more stable, less conventional economic ecology of two interconnected households. Such productive, destabilising effects place Backyard Homes in line with housing historian Dolores Hayden's analysis about redesigning the American Dream and feminist domestic revolutions.[3]



cityLAB,
Backyard Homes from the City to the Lot,
University of California,
Los Angeles (UCLA),
2010

Zooming in on the map of Los Angeles (top left), all single-family properties are shown in yellow. The aerial view of a single block (top right) shows backyard land open for infill housing, as well as all the visible unpermitted infill housing that already exists. Below are a single lot (indicated in the larger aerial view by the linking dashed lines) and its street elevation from El Dorado Avenue.

Architecture's Embodiment of Regulation

The Backyard Homes legislation is reshaping the postsuburban landscape, but is it architecture? To put it in the Tina Turner form: What's architecture got to do with it? When cityLAB began its investigation of secondary units in 2008, architecture's contribution to the solution was less obvious than soon became apparent. At the outset, common wisdom held to the existence of a 'standard lot' (supposedly 50 by 150 feet (15 by 45 metres)). Instead, research showed each home, backyard and property to be unique with no standard dimensions, differing topography, easements and so on, thus requiring some degree of customisation of design solutions. The study of various districts within Los Angeles uncovered collections of very small lots and extra-large lots, houses with footprints covering all the land available regardless of lot size, and narrow driveways that led to garages sitting on rear and side property lines. Though it should have been simple to convert the garages on alleyways, like so many other 'opportunities', some small artefact of earlier legislation stood in the way. These barriers only became apparent in the architectural tests cityLAB undertook to design liveable units under a range of site conditions. There are at least four

Numerous architectural researchers working at cityLAB visualised the design possibilities in different districts, the environmental implications of infill residential development, and the way increases of secondary units would impact neighbourhoods.

common types of backyard homes (detached unit, garage conversion, addition to existing structure, and partial home conversion), yet few architects have considered any of these an architectural problem. Now, with the potential to design and build hundreds of thousands of small housing units, young architects in particular are offered new proving grounds.

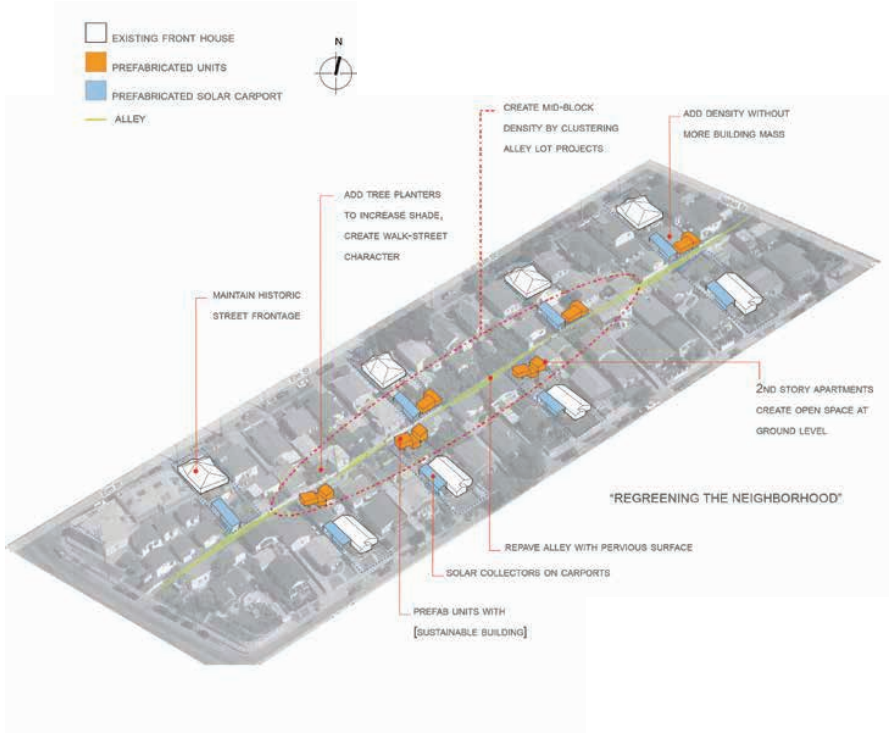
To write the new legislation, the author along with planner and cityLAB Fellow Jane Blumenfeld went 'into the weeds' of the regulations to untangle the barriers that were preventing legal backyard homes. Numerous architectural researchers working at cityLAB visualised the design possibilities in different districts, the environmental implications of infill residential development, and the way increases of secondary units would impact neighbourhoods. Fieldwork in a variety of LA neighbourhoods revealed many lots already had self-built secondary, if illegal, units. Partnering with Kevin Daly Architects and a dozen graduate students from the Department of Architecture and Urban Design at UCLA, over six months in 2015 cityLAB designed and fabricated a demonstration Backyard Home, called the BIHOME, that occupied the same 400 square feet (37 square metres) as a two-car garage, and proposed to significantly reduce the environmental impacts of housing construction.[4] The BIHOME is a transformative project, not just because of its environmental genius (lightweight, sustainable, recyclable, easy to assemble and dismount), but because it dares to imagine that not all grannies are nostalgic and that environmentalists recognise the need for new ideas about urban nature. To this point, the images and story of the magical little BIHOME were picked up by over a dozen news outlets worldwide. Kevin Daly and the UCLA architecture students had demonstrated how complicated the sources for architectural innovation can be: Could a building be designed to fit down a 5-foot (1.5-metre) wide setback, be carried by two people, use low-skill labour, and be made entirely recyclable? Could a backyard home be produced more like a car, where the buyer dials in a few options, gets a loan on the spot, and in a relatively short period of time, a backyard home is delivered?

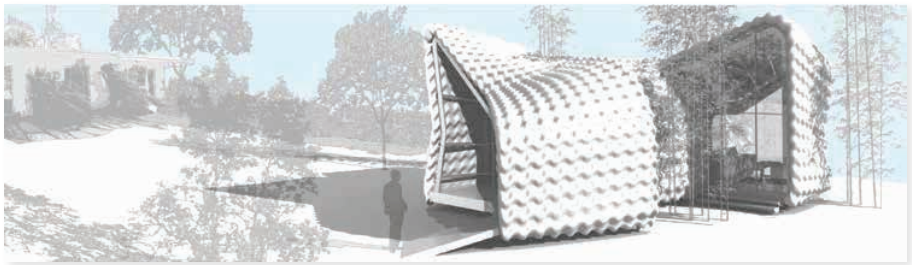
cityLAB, Backyard Homes potential, University of California, Los Angeles (UCLA), 2010

The community of Pacoima, in northeast Los Angeles, has deep lots where multiple backyard homes can be accommodated, utilising sustainable building practices.

Kevin Daly Architects for cityLAB, Regreening the Neighbourhood, 2009

An early test of prefabricated backyard homes on alleyways, showing their potential to improve individual properties as well as the neighbourhood through 'regreening'.





Kevin Daly Architects for cityLAB,
Concept for BIHOME,
2010

Shown at the Venice Architecture Biennale. Among numerous design concepts, this first version of the BIHOME continued through schematics, and eventually – in 2015 – a prototype was fabricated. Working with cityLAB, Kevin Daly Architects invented a lightweight, sustainable, recyclable prototype with an inflated skin.

Kevin Daly Architects,
cityLAB and the UCLA Department
of Architecture and Urban Design,
BIHOME,
Los Angeles,
2015

above: The BIHOME prototype was fabricated over a two-week period by a team of UCLA architecture students and faculty.

right: The BIHOME prototype demonstrates that a compact studio residence can house two people in the same space as a two-car garage.

An Architect's (Domestic) Work is Never Done

The process took ten years for Backyard Homes to move from observation of existing construction tactics, to a larger urban goal of doubling the density of the suburbs, to extensive research and design demonstrations, upon which comprehensive legislation could be based, and then move back to construction implementation.

A flawed ADU bill that passed in 2003 had produced only a trickle of units, averaging 120 per year, but in 2017, the first full year with the new law in place, Los Angeles was on course to issue 1,300 ADU permits.[5] In a city with almost half a million residential properties, Backyard Homes construction is just beginning. The Backyard Homes bill represents a remarkable change in the Californian psyche about the American Dream, a dream that has been growing further out of reach since homeownership hit its apex in 1960. Other states will watch how the Left Coast adapts to this transformation, and will tailor their own legislation accordingly. The success of Backyard Homes has made myriad related problems more apparent, many of which would benefit from design thinking. At the outset, it was noted that Backyard Homes undermine the foundational thinking of American home mortgages. This is corroborated by lenders struggling to find ways to finance secondary rental units. This problem could have a design component (for example, if units could be designed to be dismantled and rebuilt so that they could serve as collateral to secure a loan). Affordable, environmentally sound backyard homes are an important design challenge that requires multiple prototypes, from modular and prefabricated solutions to adaptive structural systems.

It is not surprising that this fundamentally disruptive direction in residential architecture arises now. The housing crisis which afflicts major cities worldwide is only one part of the context. Cultural and political upheaval tied to crises in global migration or critical environmental issues implicate who lives where, as well as how our cities will adapt. Yet there is also something frighteningly familiar when we consider the current rise of populist nationalism with its parallels to prior fascist regimes. Given the scale of the problems and their heterogeneous ubiquity, architects find themselves caught between a sense of helplessness and illusions of potency. But even if no single profession, group of activists or locale can effectively address the problems, let alone step outside the logics of neoliberalism that frame all these issues, Backyard Homes argues for a clear form of agency for architects. Such 'radical increments' offer the tactical means by which buildings produce effects extending beyond their individual properties. The potential of radical increments lies in particular forms of architecture deployed in service of larger urban, political-economic goals.[6] A radical increment is both a solution to a design problem and a model that can proliferate to other sites under similar conditions, and that aims for systemic change. Neither a bespoke masterplan nor a fragment of some whole, transformation via radical increments is viral. A project is a prototype or demonstration that can take hold in and adapt to new circumstances. For architects today, a potent agency is available through the design of housing, particularly affordable housing.

To design and plan our way through cultural, political upheaval is not new in the history of architecture, where we can find precursors of the radical increment. In the interwar years, Ernst May's New Frankfurt public housing programme (1925–30) created pioneering standards for daily life and urbanism; Buckminster Fuller's domes (patented 1954) were a calculated way to use fewer of the earth's limited resources to do more; Ant Farm's inflatable structures (1968–78) were critiques of consumerism; and *Arts & Architecture* magazine's Case Study House Program built liveable modernism for postwar middle-class suburbanites primarily in Los Angeles between 1945 and 1966. Each was a demonstration of generative design, of a project suited to multiple sites. Activism by research centres like cityLAB and non-traditional design firms does not limit the potency of all the architects who are ardent proponents of affordable housing, environmental sustainability, everyday architecture and solutions to homelessness. Through a degree of engagement with policy and regulation, and through the design of projects that operate as radical increments, the architect's lot is not just about site boundaries, but about political agency. ⌀

The BIHOME prototype is illuminated from within the double-layer of plastic, shrink-wrapped over a bent-metal tube frame and cylindrical cardboard matrix.

Notes

1. For the complete text of AB 2299, see https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2299. For data for California single-family properties, see The American Community Survey (2011–15) of the US Census Bureau: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk.
2. Regarding the California housing crisis, see Adam Nagourney and Conor Dougherty, 'The Cost of a Hot Economy in California: A Severe Housing Crisis', *New York Times*, 17 July 2017, www.nytimes.com/2017/07/17/us/california-housing-crisis.html?_r=0.
3. Dolores Hayden, *Redesigning the American Dream*, WW Norton (New York), 2002; The Grand Domestic Revolution, MIT Press (Cambridge, MA), 1981.
4. Michael Webb, 'Backyard Bl(h)OME', *The Architectural Review*, 10 August 2015, www.architectural-review.com/rethink/could-the-bihome-solve-las-housing-crisis/8686346.article.
5. Jason Neville, unpublished research; data from LA Department of Building and Safety.
6. Dana Cuff and Roger Sherman (eds), *Fast Forward Urbanism*, Princeton Architectural Press (New York), 2011.