

2016 Strategic Innovation Summit on Affordable Communities Everywhere

*Insight from the 2016 Strategic Innovation
Summit at Harvard*





Introduction

The immediate global need for affordable housing is estimated to exceed 400 million units. Moreover, each year more citizens are qualifying for and demanding better housing options from their leaders. Solutions to this problem must extend beyond publicizing the latest ingenious invention or erecting a pile of cheap houses, actions which only further strain an already fragile environment and infrastructure.

The solutions must start with a comprehensive urban plan and then deliver not just an affordable home, but a vibrant and sustainable new community that provides a healthy and safe environment for people to flourish.

To help leaders define, evaluate, and bring these kinds of integrated housing solutions to their cities and countries, the Technology and Entrepreneurship Center at Harvard with support from Barcelona Housing Systems recently gathered senior public and private sector executives for the 2016 Strategic Innovation Summit on Affordable Communities Everywhere (ACE2016).

Held at Harvard University in Cambridge, MA, the Summit provided an unprecedented opportunity to learn from, and network with, the world's leading disruptive thinkers and innovators within the sector, as well as Harvard faculty and researchers, and select executives from the affordable housing and finance community.

The Summit examined housing solutions from the perspective of "The Doctrine of the Three D's – Dignity, Durability, and Delight," developed by Prof. Vijay Govindarajan and Jack Wilson at Dartmouth College. The agenda built upon this framework, identifying relevant parameters that define each "D" relating to affordable and sustainable communities. The Summit also allowed participants to explore questions concerning the efficient development, management, and evaluation of existing and proposed projects launching around the globe.

Insights from the Summit are detailed in this report.



Contents

| | |
|--|----|
| Introduction | 2 |
| Letter from Chair | 4 |
| A Blueprint for Addressing the Global Affordable Housing Challenge | 5 |
| The 3 D’s and Affordable Communities Everywhere | 6 |
| The Affordable Housing Crisis: Perspectives from a Global City | 8 |
| Past, Present & Future of Construction | 12 |
| Housing at the Centre Approach: Catalyzing a Paradigm Shift in Thinking and Practice to Achieve Dignified Housing for All. | 14 |
| Business and Investment Innovation to Achieve Housing for All | 16 |
| Case in Point: | 19 |
| Upgrading a Housing Project in Cochabamba, Bolivia | 19 |
| Case in Point: Innovative Partnership Model for Low-Income Housing in Post-Socialist Cities | 20 |
| Case in Point: A New and Sustainable Approach to Affordable Communities in Europe | 21 |
| Case in Point: Rehabilitation of Ludlow Mills into Affordable Housing | 22 |
| Case in Point: Beijing: Affordable or Unaffordable? | 23 |
| Case in Point: Solving the Need for Affordable Housing While Addressing the Energy Crisis | 24 |
| Case in Point: Emergency Architecture and Long-Term Rehabilitation after Earthquake in Ecuador | 25 |
| Colloquy: Design and Construction | 27 |
| Colloquy: Community | 29 |
| About the Strategic Innovation Summits and Symposia | 31 |
| Acknowledgements and Credits | 32 |

Letter from Chair

Dr. David Ricketts

As you read this, the affordable housing crisis is playing out in cities and countries all around the world. On all continents, citizens are crying out for answers, asking their leaders to find solutions to their most basic need – shelter. The immediate global need for affordable housing is estimated at 400 million units, which represents hundreds of millions of people who are currently living in inadequate housing. All around the world, there are dedicated people committed to solving this problem, but we build and build and can never keep up.



We are reacting to the problem instead of solving it.

The 2016 Strategic Innovation Summit on Affordable Communities Everywhere (ACE2016) brought together housing experts from all over the globe to discuss the critical issue of affordable housing. These experts have varying roles, whether it is studying and researching the problem, planning and designing housing communities, constructing housing units, or helping in some other capacity. Each is working in his or her own corner of the world, developing unique solutions to the problem within his or her local community. By coming together at the ACE2016 Summit, we were able to share ideas and explore the topic on a more macro scale – to find solutions to the global housing crisis.

At ACE2016, we explored housing from the perspective of the 3 Ds – how can we infuse dignity, durability and delight into our affordable housing solutions? We also examined the affordable housing problem from a variety of angles, including:

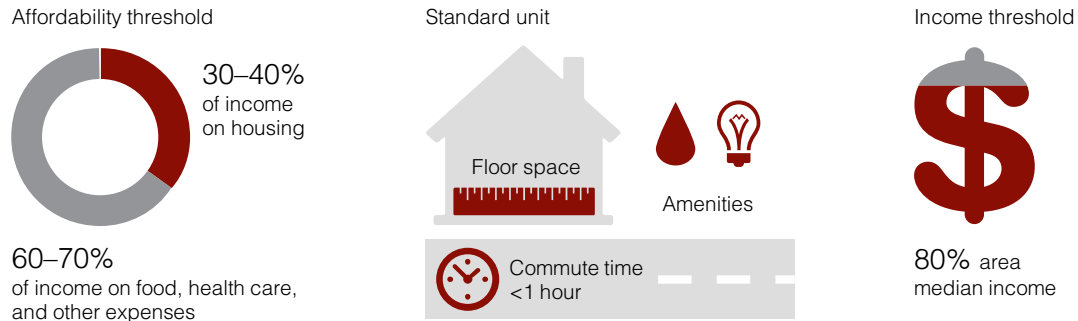
- What materials should we use and what construction methods can help us bring down the cost per unit to make housing more affordable?
- How can we incorporate sustainability and environmental friendliness into our housing solutions?
- How do we approach the issue of land usage and management so we can build more affordable housing without having to build up?
- What is the role of political leaders, the government, subsidies, and taxpayer money in solving the housing crisis?
- How do we deal with the costs of financing housing projects?
- How do we bring down the cost of rent and help more people become homeowners?
- How do we approach housing as part of the larger ecosystem of urbanization, where people also need good education, jobs, and public spaces?
- How do we go beyond individual units to create vibrant communities where people can thrive?

The ACE2016 Summit was an exciting and engaging event, with lively discussions and passionate exchanges. This whitepaper captures not only the ideas presented but also the spirit with which they were shared. While we agree that there is no quick fix for the housing crisis, the insights within this whitepaper bring us closer to a global solution.

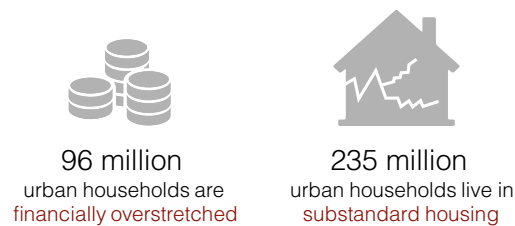
A Blueprint for Addressing the Global Affordable Housing Challenge

Jan Mischke, Senior Fellow at the McKinsey Global Institute

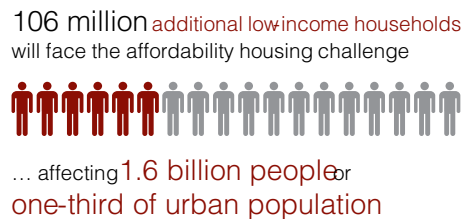
Affordable housing is defined by three parameters, which cities need to tailor to their local contexts



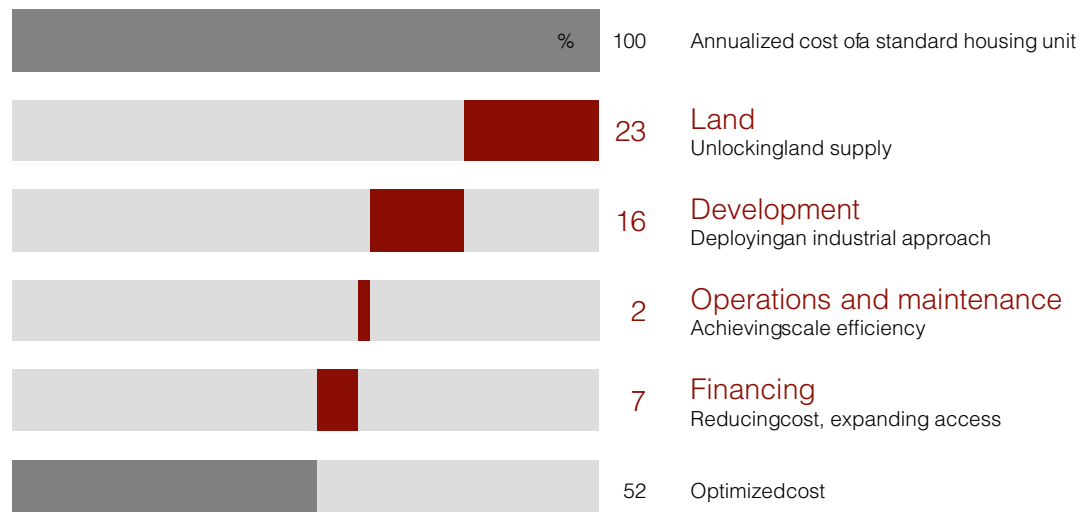
The challenge today ...



... and by 2025



Four levers can address the global affordable housing challenge





Community meeting in
Fond des Blancs Haiti
photo by Michael Sacca.

The 3 D's and Affordable Communities Everywhere

Jack Wilson, Senior Lecturer, Dartmouth College

At Dartmouth College, my home institution, students and faculty in business, engineering, medicine, architecture, anthropology, environmental studies and other disciplines took on the challenge of designing affordable communities in areas deeply affected by poverty. These were the initial questions posed:

- How can organic, self-built slums be turned into livable housing?
- What might a “house for the poor” look like?
- How can world-class engineering and design capabilities be utilized to solve the problem?
- How could the poor afford to buy this house?

Looking at potential solutions to affordable housing in both India and Haiti, students and faculty quickly came to three basic conclusions:

- There is no *one size fits all* solution to the worldwide affordable housing crisis.
- The only way to develop viable solutions is through disciplined work in the field.
- We can help, but the successful solutions will come from the communities themselves.

They issued a challenge to the design community to employ the strategies of innovation and disruptive thinking to attack this persistent problem.

Members of the Dartmouth community have had longstanding relationships with the country of Haiti and following the devastating earthquake of January 2010 we established strong ties with a number of successful NGO's there. Numerous Haitian and Haitian/American Dartmouth students have become involved in the initiative, and the team concentrated on design solutions addressing the critical need for permanent and durable housing in Haiti.

The college launched a series of interdisciplinary research trips to gather information and establish close relationships with communities in Haiti. At the same time, we organized and facilitated a housing design workshop including students, faculty, Haitian experts and design professionals. The workshop had four tracks:

- Rural House Design Prototype
- Urban Housing Design Prototype
- Community Development, Infrastructure, Education, Healthcare Delivery
- The Development of a Business Plan

Specific sites in urban and rural Haiti were utilized for the prototype designs, and partner organizations from these communities participated in the process. The resulting reports and designs were impressive, but the work was just beginning.

The next step was to take these ideas back to the communities for feedback on design and implementation concepts. Fundraising for the projects progressed, and some new strategies were developed to move forward in Port Au Prince.

At present, we have focused the urban house prototype construction on the area of Martissant where a large-scale comprehensive urban planning initiative is being directed by the Foundation for Knowledge and Leadership (FOKAL). The incorporation of our urban housing concept into this larger framework offers significant promise in a collaboration between FOKAL and Dartmouth.

Participants in the Affordable Communities Everywhere Summit of 2016, ranging from politicians to developers to academics, posed the question as to how an international, interdisciplinary initiative could help to deliver affordable communities everywhere. ACE2016 made significant progress, yet there is much more work to be done. The theme for the Summit was the doctrine of the three D's, developed by Jack Wilson and Vijay Govindarajan, in association with the Dartmouth/Haiti initiative:

- **Dignity** - After extensive field work in Haiti, we have come to believe that differentiating the poor by building their homes out of waste or materials that the middle class and wealthy would never consider for their own homes is not a viable option. Similarly segregating the poor into new communities that have no variation in socio-economic status and that are separated from their home communities and from economic opportunity is also counterproductive. Any solution to housing for the poor must maintain the dignity of the members of the community.
- **Durability** - We will never break the cycle of poverty by creating housing for the poor that falls apart in five to ten years and then becomes so expensive to maintain that the owners cannot improve their general condition. This is a large part of the innovation challenge and where lessons learned from the local community can be so important.
- **Delight** - Life holds challenges for all people; none of us are immune to tragedy and grief. Likewise, we all thrive on moments of delight: the smile on a child's face or perhaps the knowledge that our family is safe and has enough nutritious food to eat. Walking through a remote village in southern Haiti where children walk four kilometers each way to fetch water, one sees beautiful ornamental plants at every doorstep. It's a reminder that at the end of the day even the poorest of the poor delight in the beauty of life.

Economic opportunity, clean water, sanitation, electricity, healthy food, security, education and health care: all of these elements are bound together in addressing this wicked problem. We cannot successfully build homes without building community.

Dartmouth graduate and ACE2016 participant Julia McElhinney sums up her experience in the initiative with these thoughts:

I feel very fortunate to be involved in such a creative, collaborative and conscientious initiative as an undergraduate student and now as a young professional. It is an incredible feeling to be even a small part of such proactive and positive change in our world. Largely because of my experiences on this project, I have decided to dedicate my studies to sustainable urban design and, in particular, public placemaking for community building.

Can the project deliver on the three D's? Stay tuned or better yet join the initiative.



The Affordable Housing Crisis: Perspectives from a Global City

Rt Hon David Lammy MP, Member of Parliament for Tottenham

What is going on in London, in terms of the affordable housing crisis, is a proxy for what is happening in all of our major megacities: New York, Berlin, Paris, and many other large cities around the globe. As the situation in London demonstrates, the affordable housing crisis is a complex problem made up of several issues – a problem that requires deep contemplation and a robust solution.

“What is going on in London is a proxy for what is going on in all of our major megacities.”

Unaffordable Rent

By the mid-1960s and early 1970s, London arrived at a place where a third of people could buy their own home. They could go to the bank, get a mortgage, and buy their own home for somewhere between 6,000 and 10,000 pounds.

Another third could go to the local government agency and rent a home at subsidized levels. Like other nations, at this time London was building big subsidized housing estates and building up to provide more housing units in a condensed space.

The final third of residents had their housing needs met by renting privately.

Since that time, two things have happened that have redistributed how people obtain housing:

- Governments no longer want to invest in subsidized housing, which cuts off access to more affordable rent.
- Housing values have skyrocketed. For example, my parents bought a house in 1969 for 6,000 pounds. In 2008, I sold it for 400,000 pounds.

As a result, people in London have limited access to subsidized housing and they also can't afford to buy their own

home. Today about 70 percent of people moving into housing rent privately. Housing conditions are very poor, overcrowded, and rent is unaffordable. The average rent for a year is 46,000 pounds, but average earnings are only 36,000 pounds.

One solution that has got to return to the conversation is rent control. The vast majority of people are renting at rates higher than their incomes, and they're going to be renting for a long time. Rent control could help make private renting more affordable for the vast majority of Londoners.

"We are building approximately 25,000 units a year, and we have been for a very, very long time. That is not enough when every day in London nine people move in, and London is moving to be a ten million city."

Lack of Government Interest in Subsidies

As mentioned in the above example, another issue that plagues London and other cities around the world is waning interest in public subsidies. Whereas subsidy programs were popular in the 1960s and 1970s, investments in subsidized housing have since vanished.

There is a policy tension in subsidized housing where we struggle with the decision of how to spend public subsidies and taxpayer money. The UK government wants more owner-occupiers, and subsidizing rent does not help to reach that goal. The question becomes, "How can we use subsidies to create more owner-occupiers?"

One possible solution is to come up with a product that is about starter homes instead of rental units. Instead of using subsidies to help people with lower rent, the public subsidies could be used to help younger people purchase first-time homes.

This solution is not without its own issues, though. For one, would such programs result in giving taxpayer dollars to those in the middle class to purchase a house while ignoring the needs of those in poverty? Also, once a person buys a subsidized house from the state, it's gone. We need to constantly replace housing to meet growing demand, as nine more people move to London every day who also need access to affordable housing.

Dealing with Foreign Investors


A third issue in the affordable housing crisis is how to deal with foreign investors who are scooping up housing assets to use as financial investments.

For example, the city's tallest building just went up in the center of London, containing over 100 housing units. It was recently disclosed that all of the units had been bought by foreign overseas investors, and no one lives in any of them. This has created anger among local people, who see cranes going up in London and the bustle of construction, but they know that the buildings are not really for them.

Is it okay for foreign investors to buy up all the housing assets? Different answers to that question lead to different solutions and, at the moment in Britain, we're really not settled on the answer. If foreign investment to this level is not acceptable, restrictions could be placed on investing to reclaim housing for the local people. If foreign investment is embraced, we could find ways to balance taxes on foreign investors and use that money to build additional housing to meet the needs of locals.

Land Usage and Density

Finally, the price of land is also skyrocketing, adding to the costs of building affordable housing in mega-cities. However, we could do more with public land. London has a lot of public land, particularly around transport nodes, and this land could be used to keep building costs down.

A photograph of Rt Hon David Lammy MP, a Black man with a beard, wearing a dark suit, white shirt, and light blue tie. He is speaking and gesturing with both hands. The background is a blurred indoor setting, likely a parliamentary chamber.

“How do you create sustained affordable housing? But also, how do you create an escalator where people can get onto that public housing but also perhaps get off that escalator so that someone else can get on?”

Rt Hon David Lammy MP
Member of Parliament for Tottenham

That said, there will always be debates about the best way to use public land. London has strict rules about building around our green areas because people want to protect these green spaces and preserve heritage. If green fields are protected, the only other option is to build up.

Building up comes with its own risks too. You may end up building penthouses for the super-rich, or just another uninhabited investment vehicle for foreign investors. You also risk creating the potential ghettos of the future. In general, the old model of building up doesn't work anymore because most people want a front door and a garden for their children to play in.

“There’s a real concern about affordability but the solution to get to what is affordable will be a challenge, a real, real challenge.”

A Complex Problem

By looking at London as an example of what is happening in cities around the globe, we see that the affordable housing crisis is a complex problem. In addition to the points mentioned above, mega cities also deal with growing populations from immigration and refugees who also require affordable housing, and the question of how do we also help people build themselves without direct help from the government.

To help local residents, cities need to create sustained, affordable housing as well as an escalator that can provide access to that housing – where people can get on and then later get off the escalator so someone else can take their place.

Do we want rent control to take some heat out of the marketplace where most people are renting privately? What is our commitment to subsidy and where is the money going to come from? How do we wrestle with the globalized context of housing where the super-rich are investing and building for their own profit? It comes down to people who have assets and those who do not, so how do we help people get up the ladder so they can obtain their own housing assets? These are just a few of the many questions that city leaders have to ask if we want to find creative solutions to the global housing crisis.

Learning Points

- There are several challenges to addressing the affordable housing in large city centers.
- Government interest in subsidized housing has waned since the 1960s and 1970s, and housing values have skyrocketed. This has caused more city residents to rent privately at rates higher than they can afford.
- Government subsidized housing is at odds with the government’s desire for people to become owner-occupiers instead of renters. Subsidies could be used to help people purchase starter homes instead, but there are challenges there as well.
- Many new buildings built in cities are then taken over by foreign investors. Is the solution to place restrictions on these investors, or to balance taxes on investors and use the money for local housing?
- There is also disagreement about how to use public land. People want to preserve green spaces in the city but the alternative – building up – comes with risks too.
- The complex problem of affordable housing happening in cities all around the world requires a delicate yet well-rounded solution.



Past, Present & Future of Construction

Cesar Martinell, Cesar Martinell & Assoc. Architects

Cesar Martinell & Associates is one of the oldest planning and architectural firms, established in Barcelona in 1916. During each era, architects at the firm have perfected the current construction methods and also pushed technology to the next level. Today the company is pioneering new methods that can make affordable housing a reality for cities across the globe.

The Past

With such a long history, Cesar Martinell & Associates has been able to cumulatively build its collective knowledge of construction. That starts with one of the oldest construction methods – pure compression.

Pure compression uses stones as the building blocks and involves laying stones on top of other stones. The elements below create a supportive structure to hold the horizontal elements above. This method was used to create many structures that are still standing today, including the pyramids in Egypt and the Parthenon in Greece. When Cesar Martinell Sr. founded the company, this is the type of construction that they practiced because it was almost the only technology available.

Next came architecture based on tension, where steel was introduced to construction. Steel makes buildings more stable than pure compression. Cesar Martinell & Associates learned this new technology and took it to the next level, by finding ways to use the least possible quantity of steel while maintaining the building's stability.

"If we want to industrialize and we want to reduce the price and we want to be really affordable, we have to change everything."

The Present

Moving to more recent times, Cesar Martinell & Associates has had the honor of working on very prestigious buildings, including The Guggenheim Museum (Bilbao), City of Arts and Sciences (Valencia) and The Olympic Village (Barcelona). The firm focused on what is known as "ego architecture." People who wanted to build the

best buildings, the tallest structures, and the most impressive architecture would seek out Cesar Martinell architects to solve their problems and make the designs a reality.

In the process, our company began to reevaluate its priorities and values. Although impressive, these ego architecture buildings are economic disasters. For example, the World Trade Center Transportation Hub cost \$4 billion to build, the equivalent of \$53,800 per square meter. This sort of building is unsustainable. At Cesar Martinell & Associates, we believe that construction and architecture have to change to become more green, ecological, and economical.

The company has since shifted focus to a definition of architecture as the intersection of geometry, technology, and economy. By fine-tuning each of these elements, we are able to create buildings faster and more affordably, plus they are safer for workers and have lower environmental impact. Some of the techniques we use include:

- Instead of working with individual bricks or panels (which are the equivalent of 160 bricks), we work with large integrated panels that are the size of 1600 bricks.
- Sections such as panels, staircases and balconies are constructed offsite then trucked to the location.
- We use 50-75 percent recycled materials (especially steel) with a zero waste design that includes zero water and zero concrete, which reduces emissions by 80 percent.
- Ground screw technology allows us to create a foundation in six hours instead of 28 days.
- We've begun to use composite materials.
- Roofs are built on the floor and then lifted up in 15 minutes, which improves time and also safety.

"That's the first thing you have to understand. If you don't disrupt everything you are doing, you are not going to be able to build with efficiency and speed."

Using these methods, we have been able to create a four-story multifamily building in Chili that is Class A in energy and carbon efficiency. It was made from 79 containers and is resistant to disasters like earthquakes, hurricanes, and floods. The final cost of this building was \$650 per square meter, proving that you can have affordable AND high-quality housing if you are willing to rethink your methods and disrupt the industry.

The Future

The current project gives us hope for fine-tuning our methods even more; our goal is to bring the cost down to \$380 per square meter in the future.

In the future, we also must move away from ego architecture and start building sustainably with a focus on construction that meets the needs of city residents. The World Trade Center Transportation Hub was not only costly at \$53,800 per square meter; it also takes up 250 blocks. A standard block can contain 16 buildings and 256 apartment units. That means that 4,000 buildings and 64,000 apartment units could have been built in its place.

To meet the needs of residents and cut down on emissions, cities should also use density to their benefit. Barcelona, Spain has 1.60 million people, a density of 15,700 people per square kilometer. On the other hand, Boston, Massachusetts has a density of only 2,800 people per square kilometer. Planning and better use of space have dramatic consequences for emissions. Even though Boston's density is a fraction of Barcelona's, it has five times the emissions (2.5 tons CO2 per person in Boston, compared to 0.5 in Barcelona).

In the future, construction and architectural firms will have to forget about pure compression, forget about steel, and think of what is to come instead. From our point of view, the future is composite and biomaterials, paired with efficient methods that bring housing costs and emissions down while not sacrificing quality.



Housing at the Centre Approach: Catalyzing a Paradigm Shift in Thinking and Practice to Achieve Dignified Housing for All

R. Aisa Kacyira, Deputy Executive Director and Assistant Secretary-General for UN-HABITAT

Twenty years ago, in 1996, the UN General Assembly convened in Istanbul to discuss the issue of housing and urban development. They decided that it was important for every human being to be dignified and to have access to decent, affordable housing. The initiative is known as the “Habitat Agenda” and as a result, UN-Habitat was created.

UN-Habitat is a program meant to carry out the work outlined in the Habitat Agenda. Its mission is to promote the development of socially and environmentally sustainable human settlements and to achieve adequate shelter for all.

Lessons from UN-Habitat’s Initial Work

As UN-Habitat got started, the main question was how to get people out of poverty and give them the basics of life – water, sanitation, and housing? At that time, about 700 million people around the globe were trapped in poverty, and the initial reaction was that we needed to upgrade the conditions in slums. UN-Habitat members worked very hard to achieve the mission of adequate shelter for all, and some progress was made. Unfortunately, however, the work didn’t go far enough to address the problem of poverty and inadequate housing.

“People define their need as housing but, in reality, they are looking for livelihood, and housing is only a part of it.”

There are several reasons why the initial efforts of UN-Habitat were not as successful as they could have been. For one, the solution was reactive and not proactive. By 2015, we had gotten 200 million people out of slums and slum-like conditions, but we were not addressing the problem head on. Despite all our work, there are now currently 900 million people living in slums. Responding and reacting can only go so far when the problem is still running rampant.

Another thing that has stalled the success of UN-Habitat's mission is the growing gap between the "haves" and the "have-nots." Growing inequality is a problem in itself, and we need the right leadership to address this problem. What policies do we have in place? How are we implementing them? Urbanization and housing goals require socio-economic transformation, not simply upgrading slums.

The Housing at the Center Approach

At UN-Habitat, we realize that the biggest mistake we made was to pull housing out of the fabric of urbanization. Although people need adequate housing, what they are really looking for is the chance to have a better livelihood. Housing is only a part of this. This realization helped us change our direction to a "Housing at the Center" approach.

A Housing at the Center approach recognizes that housing is part of the ecosystem of urbanization. With the right planning and governance, we can lead the way in urbanization thereby creating the socio-economic transformation process that we are looking for. This can help us achieve the goal of safe, inclusive, sustainable and resilient human settlements and cities.

Our experience has also taught us that achieving these goals requires a great deal of coordination, where everyone must work together on the mission. National urban and housing policies must be coordinated and supported by local governments. Local governments must work together to create coordination on a regional level. Coordination must be improved in the UN too. As it is structured, the UN is segmented into branches that don't talk to one another sufficiently. If these branches can work together, we can better solve problems and reach goals.

Moving Forward

Today, we are faced with a humanitarian crisis that is much bigger and much more intense than 20 years ago when UN-Habitat got its start. Natural disasters, manmade disasters, political conflicts, and other issues cause upheaval around the globe. Even in the midst of crisis, people want decent, accessible and affordable housing. This has changed the scope of UN-Habitat because, although we were created as a development agency, we now spend 60-70 percent of our work in humanitarian efforts.

"Talking about what we are looking for in affordable housing, one of the key things that is missing, and is within our reach, is coordination."

Our efforts in the slum upgrading program have expanded from a narrow focus on housing to a complete view of the person within the context of urbanization. One new focus is on employment creation because when we open up employment opportunities, then it is possible for people to upgrade their homes and transform their lives. We also focus on skills training, land ownership, and giving people access to the mayor so they can have a voice in planning slum improvements.

Slum upgrading is still a promising method of reaching the goal of adequate housing for many communities around the world, but it's not the end of our work. The Housing at the Center approach recognizes that housing is only one part of urbanization. People also deserve good education, public spaces, and jobs. By focusing on urbanization and the specific needs of people, we can reach the goal of decent, affordable housing for all.



Business and Investment Innovation to Achieve Housing for All

Lenora Suki, Founder of DevelopingSmartCities.org

DevelopingSmartCities.org, a leadership and knowledge platform, was started several years ago in response to the critical challenge of delivering housing to a rapidly urbanizing and developing world. One big block is inadequate business and investment innovation. In emerging and developing international markets, where over 1 billion people are in need of housing, desperately needed innovation in processes, materials, partnerships, financial innovation and sustainability is all but absent.

The business and investment opportunity is enormous. According to the McKinsey Global Institute:

To replace today's inadequate housing and build the additional units needed by 2025 would require \$9 trillion to \$11 trillion in construction spending alone. With land, the total cost could be \$16 trillion. Of this, we estimate that \$1 trillion to \$3 trillion may have to come from public funding. (Tackling the World's Affordable Housing Challenge, 2014)

Yet, the capital going to affordable housing is paltry compared to the need in places like India, Nigeria, South Africa, Brazil and other rapidly growing markets. As just one indicator of the dramatic capital shortfall, publicly listed housing developers, homebuilders, and real estate investment trusts (REITS) in emerging markets with exposure to affordable housing earned approximately \$200 billion in revenues last year (Source: Bloomberg). Although many capital providers are not included in these estimates, it's clear that capital markets provide a tiny fraction of the capital needed for affordable housing.

Housing practitioners point to the complexity and fragmentation of whole housing value chain as the cause for this disconnect between capital and opportunity. The same McKinsey Global Institute report referenced above suggests that unlocking land, development, maintenance, and finance would break open the jam in global affordable housing.

Yet, unlocking markets may not spur housing innovation. Residential real estate, especially in low cost and affordable segments, is inherently conservative. Real estate overall has by far the lowest levels of R&D of any industrial or infrastructure sector. So making markets work may only yield more of the same.

This won't suit in a fundamentally changed and challenging world. Housing construction and development now must minimize carbon, energy, water and waste while producing a durable, climate resilient generational asset for lower income buyers. Homeowners and renters want vibrant mixed use and income communities in proximity to mass transit, jobs, services and social infrastructure, like health care, schools and places of worship, with open green space. Sustainable community building goes beyond infrastructure.

"Hacking" the housing value chain (as Uber has hacked taxis) is tough. The chain is a non-linear ecosystem of multiple value chains, most of which don't connect well in developing economies. A tangle of policy, capital, permits, codes, production, outsourcing, infrastructure, logistics and often corruption means critical links are often missing. Execution risk is greater than mainstream capital providers' appetite to underwrite it.

It may sound bleak, but glimmers of business and investment innovation in the global affordable housing suggest some incipient product innovation. The table below highlights areas where innovators are emerging. These new efforts often involve multidisciplinary approaches, social business models, and high-impact investments. They go beyond infrastructure and aim at more resilient, vibrant and connected communities. Despite early successes, this opportunity set has a long way to go.

Where are real estate developers, the critical actors in formal housing? Beyond a few publicly listed giants already in lower and moderate income housing, the vast majority of real estate development is built by small and mid-sized developers, a thinly capitalized and often inefficiently managed segment, generally not investable by institutions and below what is bankable. Leaving these actors out drags on the potential for new formal, sustainable, affordable housing.



So how can we unlock strategic housing innovation among those organizations developing the majority of housing in places with the most urgent and complex needs?

- Leadership platforms highlight enterprises that are beacons to peers, investors, customers, suppliers and their broader communities. Elevating leaders helps to build coherent industry identity and to develop shared values and aspirations for industry.
- Networks help professionals connect with “kindred spirits” in housing. Given fragmented housing markets, purpose-driven housing professionals and investors want networks to learn, collaborate and find opportunities.
- Learning opportunities can help shift risk- and innovation-averse behavior. Housing developers and investors want to observe others and gain insights from knowledge made accessible.
- Mission-driven capital has to be structured for investor access and outcomes. New investable funds and PPP platforms would help mobilize the high quantum of capital needed for land, capital investments and the development process, as would low cost or philanthropic capital to underwrite initial investments in delivering public goods, like energy and water efficiency, as part of a housing product.
- Strategic partnerships are needed to fill gaps and address new challenges. The organizations that will build most of the affordable housing in the developing world, whether we like it or not, need to build capacity to develop the new competencies the world requires of them, whether that means collaborating with housing microfinance institutions or integrating sustainability.

To be sure, governments have a critical role to play, one not addressed here. However, by nurturing more housing innovation, we should see more dynamic institutional ecosystems, including non-profit housing developers or non-profit partnerships with for-profit housing developers, more efficiency, lower cost and sustainable inputs and supply chains, increasing engagement among banks and investors and, one hopes, more sustainable, livable communities.

Learning Points

- One block to affordable housing is inadequate business and investment innovation. We need more innovation in processes, materials, partnerships, finance, and sustainability.
- “Hacking” the housing change is difficult because of the tangled, non-linear ecosystem, which includes capital, policy, permits, codes, production, outsourcing, infrastructure, and logistics.
- We are now seeing innovators emerging who are developing multidisciplinary approaches to affordable housing. Innovation is taking place in new housing development; design, product & business; land & ownership, and financial services.
- To unlock further innovation, we can grow leadership platforms, professional networks, learning opportunities, and strategic partnerships.

Case in Point:

Upgrading a Housing Project in Cochabamba, Bolivia



Maria Eugenia

Torrice, Director of Red de Accion Comunitaria

In this model, women and community residents have access to loans from \$150 to \$300 to gradually grow and expand their homes.

Like much of the developing world, Bolivia is home to a number of informal settlements characterized by a lack of quality housing, limited water, and sanitation resources, and inadequate infrastructure. Unfortunately, governmental policies do not currently recognize many such informal settlements or their inhabitants, which makes it even more difficult for them to access the support they need to grow and thrive. One thing these settlements do not lack, however, is a strong sense of community.

Slum Dwellers International, in partnership with NGO Red de Acción Comunitaria, is working to address the need for quality housing within the informal settlements of Cochabamba, Bolivia by leveraging this strong sense of community to increase access to both social and financial capital via a revolving fund that responds to each need on a “case by case and house by house basis.” In this model, women and community residents have access to loans from \$150 to \$300 to gradually grow and expand their homes.

This solution fits well financially, socially and culturally within the community. Many families in need of higher-quality housing earn just one dollar a day, and home construction is considered a labor of love in which it can take up to 30 years to finish building. The program offers women the opportunity to learn pre-construction, construction, and post-construction processes as they work towards completing their home. This integrated approach recognizes that housing is not an individual issue, but one that must be addressed on a personal and practical level.

Only 5 years old, this innovative financial and social model has helped over 300 women, and more than 500 loans have been granted. It has also created opportunities for meaningful partnerships, like the collaboration with Harvard University on the Refresh Bolivia Project. Though initially designed to address water issues, this initiative expanded to address numerous health and housing issues. As a result, it provides those in need with the technical and financial support necessary to build toilets and improve housing overall.

In such ways, Slum Dwellers International and its partner organizations are improving the quality of homes and lives in Bolivia, case by case and house by house.

Case in Point:

Innovative Partnership Model for Low-Income Housing in Post-Socialist Cities



Sasha Tsenkova

The new social housing provides housing to some of society's most disadvantaged individuals, such as victims of violence, persons with disabilities and those of low or modest income.

Albania, like most post-socialist countries, has experienced rapid privatization of previously state-owned housing, hyperinflation, and growing affordable housing shortages in its cities over the last two decades. Informal settlements have formed in many urban areas as a result of these changes, and more than 500,000 urban migrants currently live in these settlements.

To address the need for social housing at the city scale, a new pilot project was launched in 2009 to create a partnership between central and local governments. The project involves the construction of 1,200 rental apartments for more than 5,000 people in seven cities in Albania. The Government of Albania is financing half of the development costs through a State loan of 15 million Euros from the Council of Europe Development Bank (CEB), and participating municipalities contribute the land and infrastructure and are responsible for repaying the loan.

Led by Dr. Tsenkova, numerous international and local consultants worked together to design the legal, financial and institutional framework that enabled this pilot project, including working to establish a system for effective housing partnership between central and local governments, and developing comprehensive manuals for project management and investment to ensure that housing meets quality and affordability standards.

The new social housing provides housing to some of society's most disadvantaged individuals, such as victims of violence, persons with disabilities and those of low or modest income. Rents are set at 4 percent of development costs per year and tenants are not expected to spend more than 30 percent of their income on housing costs. The developments also catalyze neighborhood engagement by encouraging a mix of community, retail and business spaces in addition to housing.

This innovative approach to social housing provides a powerful precedent for future development in Albania, as well as other post-socialist countries facing similar challenges. In Tirana alone, this project has helped build 400 apartments for some 1,400 residents. The thought and creativity invested in this project will ensure that social housing developments, and the communities they inspire, will withstand the test of time.

Case in Point:

A New and Sustainable Approach to Affordable Communities in Europe



André Mueller

Senior Advisor, Federal Office for Building & Regional Planning (BBR)

The CLLD takes a bottom-up approach whereby local community actors can apply, receive and manage funds by themselves. This system instills great social trust in the community and it is a new approach for authorities.

There is an ever-heightening need for affordable housing in Europe. For example, Germany will require an additional 300,000 to 400,000 units a year to address the housing needs of residents, migrants, and refugees. Despite the need for affordable housing across the EU, it was previously difficult to secure funding for affordable housing projects through a single source. Instead, communities in need were required to traverse complex bureaucratic systems and apply non-simultaneously for different public funds at the EU level.

Two new financial instruments have been instituted at the EU level to streamline processes when applying for public funding for sustainable and affordable housing. The CLLD (Community-Led Local Development) and ITI (Integrated Territorial Investment) allow municipalities and regions to seamlessly combine various funds of the European Structural and Investments Funds (ESI Funds). This allows a single applicant community to simultaneously receive funding from a variety of sources.

The CLLD takes a bottom-up approach whereby local community actors can apply, receive and manage funds by themselves. This system instills great social trust in the community and it is a new approach for authorities. The ITI combines this bottom-up approach with a more traditional top-down approach. The ITI acknowledges that the success of an affordable and sustainable development strategy in one community relies on the support and cooperation of its surrounding communities. This system, therefore, encourages regional communication, cooperation and task sharing.

CLLD and ITI take a long-term approach to creating sustainable and affordable communities. Every community applying for funds must submit an integrated urban development concept plan to ensure the success and sustainability of the project over time. Both instruments aim to create and maintain ownership.

This integrated approach has provided “one-stop shopping” for municipalities and regions seeking EU level funds to support and sustain affordable community development initiatives. These new funding mechanisms take a successful place-based approach to providing affordable and sustainable communities, which ensures that these new communities are locally developed, validated and accepted.

Case in Point:

Rehabilitation of Ludlow Mills into Affordable Housing

Marla Curtis and Larry Curtis



Larry Curtis

Access to affordable housing is very limited in the United States, particularly affordable housing for senior citizens that is also sustainable, accessible and connected to support services and amenities. The rehabilitation, reuse and repositioning of existing historic buildings offers a strong and compelling solution to sustainable, affordable housing needs.

The revitalization of historic structures into affordable housing benefits not just residents but also communities. Such projects can convert underutilized industrial sites into valuable community assets that bring life back into forgotten or declining urban or town centers, and connect community members to their shared history. The historic reuse of such significant structures also provides economic and environmental benefits, including cost savings and higher revenue.

However, due to the complex nature of completing such historic reuse projects as affordable housing projects, it is often necessary for developers to seek state and federal financial support. The programs and funds available to support such efforts are complicated, vary from state to state, and require time, resources and expertise to apply for. If successful, however, they can be extremely beneficial.

With more than 80 joint projects, The Architectural Team and Winn Development Company have established a tried-and-true approach. Their current work on Ludlow Mills #10 in Ludlow, MA is an excellent example of how state and federal subsidies can be used to provide affordable housing through such projects. The team is converting the 125,000 square foot historic mill into a mixed-income residential development with 75 units. Of these, 66 units will be affordable. The project addresses the specific need for affordable housing for seniors by requiring that residents are 55 years or older of age.

The project has received support from state and federal programs, including low-income housing tax credits, historic tax credits, and \$2 million in grants from the EPA and the Massachusetts Executive Office of Energy and Environmental Affairs. Ludlow Mills #10 will break ground this year, providing housing for dozens of seniors in need, connecting them to the surrounding town and Chicopee Riverwalk, and setting a promising new precedent for sustainable and affordable historic rehabilitation projects.

Such projects can convert underutilized industrial sites into valuable community assets that bring life back into forgotten or declining urban or town centers, and connect community members to their shared history.

Case in Point:

Beijing: Affordable or Unaffordable?



Stephen Siu Yu Lau,
National University of
Singapore

Professor Lau of the National University of Singapore and his research team suggest indemnificatory apartment (subsidized housing) programs with mixed-income options focused on transit-oriented developments.

Beijing is attracting significant economic investment, and with that investment, many migrants. Compounded with other social, political and economic pressures, this has resulted in rapidly increasing housing costs.

Beijing is home to approximately 21.7 million people and is China's most expensive city for residents. According to a recent survey of 15 global cities, it is also the world's least affordable rental market.

Soaring sales prices and policies that restrict non-residents from buying homes until they have paid taxes in Beijing for five years make renting the only option for many of the city's young adults and migrants. Approximately 30 to 40 percent of the population is, therefore, ineligible to buy or even rent an affordable unit. As a result, there are an estimated 8 million people unable to access the housing options.

Much of the public or affordable housing is scattered and far away from the city center. In 2010, 70 percent of affordable housing units in Beijing were located more than 7.4 miles from the city center. These communities often lack access to transportation, resulting in a spatial mismatch of housing and employment opportunities for many low-wage workers.

There are several answers to the housing and planning problems in Beijing. Along with improved long-term urban planning, Professor Lau of the National University of Singapore and his research team suggest indemnificatory apartment (subsidized housing) programs with mixed-income options focused on transit-oriented developments.

While additional housing development, policy making, and planning is still needed, 15 billion Yuan has been invested in a housing provident fund for indemnificatory apartments in Beijing in the last five years. Notably, 50,000 indemnificatory apartments will be completed in 2016, including 44,000 renovated units in shantytowns.

Case in Point:

Solving the Need for Affordable Housing While Addressing the Energy Crisis



Eduardo Aguilar
Innovations Director at
Welink Energy

Barcelona Housing Systems has developed a system for creating additional, energy-efficient homes to address both the housing and energy crises in the UK. Based on modular construction, this housing system uses recycled materials, creates almost no waste, and uses no cement or water in the construction process.

There is currently a severe need for additional housing in the UK, a housing crisis that has been decades in the making. In the 1970s, the UK was building 100,000 to 150,000 new units of social housing a year, but since Parliament passed the “Housing Act 1980,” very little social housing has been built. The UK government has now identified the need for the creation of 400,000 additional low-cost housing units by 2020 or approximately 100,000 units per year. The problem is magnified by shortcomings of current housing policies, the inability of the current construction industry to meet market demands, and increasing land value.

Further complicating the situation, the UK is also facing a major energy crisis as many aging power stations falter and fail to be replaced by cleaner and more efficient stations in a timely manner. Energy costs are increasing rapidly, and these high costs are further exacerbated by poorly constructed and insulated homes, which makes structures difficult to heat effectively.

Barcelona Housing Systems has developed a system for creating additional, energy-efficient homes to address both the housing and energy crises in the UK. Based on modular construction, this housing system uses recycled materials, creates almost no waste, and uses no cement or water in the construction process. Composed of a light frame and layers of light steel frame panels assembled on site, the system provides both thermal and acoustical insulation, as well as fire protection. The system also orients buildings on their sites to maximize energy and cost savings for residents.

The team has proposed a partnership with the UK Government that allows the government to retain ownership of land while leasing it (or possibly selling it) to the team for the construction of affordable, modular housing.

Barcelona Housing System’s industrialized housing fabrication system provides precisely engineered, low carbon homes that are readily assembled into multi-family developments on site. Scalable and sustainable, these homes generate up to 75% of their energy demands and area able to store excess energy for later use. Smart building and energy systems, public-private partnerships and a rapid speed to market will allow such innovative housing solutions to effectively address both the housing and energy crises in the UK.

Case in Point:

Emergency Architecture and Long-Term Rehabilitation after Earthquake in Ecuador



Jose Paul Aguilar
CEO of Abaco Arquitectos

In addition to being earthquake-resistant and environmentally sustainable, the team's low-cost modular house design offers community members the opportunity and flexibility to expand and improve their homes over time.

On April 16, 2016, Ecuador was struck by a severe earthquake with a 7.8 magnitude that killed hundreds and left thousands injured and homeless. The negative effects of the earthquake were amplified by the pervasive lack of sound construction throughout the region. In particular, many families built their own homes without the oversight or analysis of a structural engineer. As a result of this lack of quality control and the use of unsafe materials, many homes crumbled during the earthquake. Worst of all, a similarly serious earthquake struck this same region 18 years prior, and no action had been taken to improve conditions or construction to avoid the loss lives. It is critical that proper planning and construction is implemented to prevent such tragedies from reoccurring in the future.

A local architect, Jose Paul Aguilar worked with his team to devise a two-step solution to address both the pressing need for shelter in the immediate aftermath of the disaster as well as the need for semi-permanent or intermediary housing while the region's redevelopment was planned and implemented.

Acting quickly, Aguilar and his team gathered the materials they had on hand – water pipes, geomembranes, pallets, etc. – and began assembling simple but secure shelters for those affected by the earthquake. Tent-like structures could be constructed in 30 minutes, allowing the team to complete approximately 20 shelters in a single weekend.

Working with the community and using additional local and affordable materials like bamboo, the team refined their shelter design in the days following the earthquake. They used water pipes to form the roofs and pallets to create perforated walls that allowed for ventilation in a very hot climate.

The team also sought to address the need for intermediary housing while the region was rebuilt through modular design. In addition to being earthquake-resistant and environmentally sustainable, the team's low-cost modular house design offers community members the opportunity and flexibility to expand and improve their homes over time. Easy mounting also allows families to construct these safe and structurally sound homes themselves.

The design consists of wooden wall and floor panels, and even wooden joints. By building as much of the structure as possible out of the same material, the team can ensure that the structure's many different components will respond similarly to any changes in environmental conditions.

The design is extremely flexible: the basic home design consists of eight modules and provides 250 square feet of living space. This design takes four hours to assemble and costs \$2,500 to produce. If families wish, they may also add additional elements such as porches or balconies or paint the house a color that reflects their culture or desired character.

The emergency shelters that the team developed immediately following the earthquake were able to provide safe, secure living spaces for families for up to three months. The semi-permanent modular houses the team has developed are designed to be used for up to three years.

“People were happy that we wanted to help, that we came. But they were also happy that they could help themselves. They wanted to help themselves. They wanted to feel useful.”

Both solutions offer community members an opportunity to participate in the creation of a safe and structurally sound home. They also allow the government and community leaders the necessary time to plan and implement the region's redevelopment.

While this planning process is being carried out and realized in the coming weeks and months, Aguilar and his team have collaborated with Barcelona Housing Systems to prototype and install modular homes throughout the region. The semi-permanent houses will be sold, rather than donated, to create a sense of ownership and pride among community members. However, the aim is to subsidize the cost of these homes to make them even more attainable for those in need.

The team is working with generalcity.com to fund such semi-permanent houses throughout the region. They are also investigating opportunities to work with teachers in the local community to propagate redevelopment. This may include a “Teachers Helping Teachers” program that would offer teachers in the developed world the opportunity to sponsor housing for teachers and their communities in need in Ecuador.

Furthermore, the rapid assembly and installation potential of the team's modular housing solution may also be leveraged to expedite the permanent rebuilding of the region once the community and government have established firm urban and social plans for restoration and redevelopment.



Colloquy: Design and Construction

A Summit on Affordable Communities Everywhere could not be complete without addressing the actual process of constructing housing units. In this panel session, experts shared insights on the current realities and challenges in construction, as well as the future of materials & methods, and how to get individuals to embrace change.

Concrete – Is It Good or Bad?

We started our discussion by exploring the most widely-used construction material – concrete. There was no shortage of opinions on this topic, and panel and audience members were split on whether concrete is good or bad.

Those who view concrete as good point out that it has a wide range of uses and it has been an incredible tool for the construction industry over the years. It is a traditional material that people know how to work with, it is rather inexpensive, and it can be used in all sorts of ways. Many acknowledged that concrete has a role to play in construction for certain types of buildings, certain heights, and certain parts of the world where concrete is widely available.

But should concrete be used for housing, and more specifically, for affordable housing? Many said no, specifically because of the environmental downsides. Cesar Martinell, who had just given a keynote on the Past, Present & Future of Construction, made a convincing case that, “Concrete is a disaster for ecology.” Concrete requires cement, which requires energy at all stages of production, from extracting the rock to burning it, molding it and then mixing it. Then it takes large amounts of water to bind, water which simply evaporates away, wasting one of our most precious resources. Other downsides of concrete include quality control issues, vulnerability in earthquakes, and the fact that it loses strength over years.

“The opportunities that may come along in a few years’ time are huge.”

- Ray Noble
Director of SolarBIPV

Alternative Materials

So if concrete isn't the solution to the affordable housing crisis, what is? Some attendees mentioned using alternative forms of concrete, such as aerated concrete and recycled concrete. There were many other materials suggested to. The most discussed were:

- Wood – A renewable material that is easy to build and can achieve very high quality. Low prices mean that it can work for affordable housing, but there are also durability issues because wood houses can rot.
- Recycled Steel – Steel is one of the most recycled materials and using it is better for the environment. One panelist even pointed out that, in terms of weight, you use less steel in creating a house without concrete than a house with concrete.

Around the globe, attendees from various countries were also experimenting with other construction alternatives, including structural insulated panels, engineered composite boards, recycled & recyclable plywood boards, bamboo, and composites.

Perceptions Slow the Adoption of Alternative Materials

Although alternative materials are available, people in various countries around the world have been wary about embracing them. This demonstrates that although many builders and engineers are interested in finding more sustainable materials, individuals still cling to brick and mortar as the housing standard.

Part of this is aspirational – people associate concrete houses with success, and in their climb to reach a middle-class lifestyle, alternative materials are an unworthy substitute. Part of it is cultural as well. People want to reside in a house that looks like the ones they see in their cities and neighborhoods or in the movies. There are also lower perceptions of quality in alternative materials (that is, if you knock on the wall and it sounds hollow, it must not be sturdy enough). What all of this boils down to is the fact that buying a house is an emotional decision, not a logical decision. People want affordable houses, but if the construction doesn't match up with their pre-conceived ideas of what a house should be, they're not going to be sold.

Exploring Solutions in Design and Construction

The panel highlighted the challenges to design and construction, including costs, materials, availability, accessibility, the environment, perceptions, and more. There is clearly no quick fix, but panelists and attendees did suggest a number of solutions, including:

- Embracing recycled, reused or repurposed materials and other material options that have a lower impact on the environment.
- Using local materials, which can support the local economy and cut down on the impact of shipping.
- Exploring the benefits of pre-fabricated modular design, where houses can be constructed off-site, leading to time and money savings that can make housing more affordable.
- Understanding the local market in order to provide individuals with the type of housing they want, including where houses should be built and how to blend the benefits of modular design with the customization that younger generations are looking for.

There was also a clear enthusiasm and excitement for what the future holds in terms of new materials and construction methods. In the past, we relied on 'tried and true' materials like concrete and steel and so we weren't motivated to find new solutions. All of that is changing. Technology is advancing at a rapid pace, and researchers are now exploring new materials to use in construction. What will unfold in the next 5-10 years is probably something we would never have guessed or dreamed of today.



Colloquy: Community

Housing, construction, and design were main topics at the ACE2016 Summit, but it's important to remember that the official name of the event is "Affordable Communities Everywhere." That represents a goal of not simply building more housing units to meet the needs of individuals, but rather, finding ways to build communities where both individual members and the collective group can thrive.

But what exactly is community? That was the topic of discussion in a special panel session where experts explored the role of community in affordable housing and how community can be achieved.

What Is Community?

In the most general sense, community is the land area where people live and where they are provided with the basic necessities of life – housing, food, and water. However, as our panel members weighed in with their own definitions, we discovered that community goes much deeper than that.

- Community is a defined set of values, principles and priorities – the common identity of the group.
- Community is formed through interaction among members, which builds trust and further carves group identity.
- Community is also a shared landscape – infrastructure that can either enable or prevent the development of identity and trust depending on how it is designed.

"At the end of the day, how happy are we in our habitat? How integrated are we? Can we connect? Do we say hi every day? Do we have the opportunity to say hi? Or do we just get in our car and just go to work?"

- Rudy Alneedia

Assistant Director for Architectural Development,
Central Falls

How Design and Infrastructure Encourage Community

Building a community takes special planning because you need to build spaces where people can interact and solidify their common identity. If you design nothing but houses, workplaces and highway, you can't form a community. Our panelists mentioned aspects such as schools, parks, art centers, theaters, sidewalks, bike trails, churches, cafes, and other places where people can meet and gather.

Design and infrastructure help form community because they help to build an environment that encourages people to share experiences. In the built environment, people can come together to express shared values and develop their common identity.

The Role of Trust in Building a Community

While design and infrastructure play an important role, panelists also stressed that it is people, not places, who create community. You can build infrastructure that is ideal for community, but if people don't use those spaces, no community can form. You can also look at the worst slums and ghettos and find strong, dedicated communities. People create and sustain communities. And for that to happen, you need trust.

Near the end of the session, panelists were asked about how we can build trust into the system so designers, planners, architects, and housing specialists can help to build communities based on common identity. Several ideas were suggested, including:

- Encourage Involvement – To build a community, you have to get input from the people who will live in that community. They must help define what is important to the community, and help to find solutions to problems the community faces.
- Do Your Research – In addition to direct involvement, you must also do your research so you understand the people and the community you are trying to build. How you define and design a community may be different from others, so empathy and understanding are needed.
- Rely on Honesty – You can't build trust in the community if you are not honest with community members. You must be honest about the ideas you are considering, the constraints of the project, and about what is really going on behind the scenes.
- Initiate Community Building – You can also take a proactive role in helping community members develop trust. For example, community organizers can help set up events, activities, and clubs that will help people meet each other. Trust will grow, and together the community will build a shared view of the future.
- Allow Room to Grow – Instead of trying to plan all details with your own vision, you should leave gaps in the plan where the community can create itself. For example, leftover funds will allow the community to decide if they'd like a playground, or a park, or something else.

By the end of the panel, we emerged viewing community as a dynamic collection of values, priorities, experiences, and vision for the future – a common identity that is brought alive by the individual members that create the community. There are certain ways that architects, city planners, and other housing officials can help to build trust and community, like incorporating specific design and infrastructure elements and understanding the needs of individuals. However, in other ways, community building is the responsibility of the members who will make up that community. To be successful, we have to empower these individuals so they can build and sustain their own vibrant communities.

“The greater extent to which people can make decisions about the design of where they live, the more vibrant community we are going to have.”

– Jim Casteros

Senior Fellow with the Institute for International Urban Development



About the Strategic Innovation Summits and Symposia

The Strategic Innovation Summit and Symposia series was convened to enable multi-disciplinary discussions of senior leaders on relevant topics of the year. Unlike conventional, discipline-specific conferences, where topical content is narrow and participants are generally from the same discipline, the Summits bring together people from many sectors. These include government, business, education, non-profit, and the arts and sciences.

The goal is to create and stimulate conversation that would normally not take place elsewhere, between senior leaders on important topics related to innovation and society.

The Summits and Symposia provide three important benefits to participants:

1. Education – As experts in their fields, participants learn from one another through interactive sessions and dedicated talks. These aim to educate, raise important questions, and present the latest data on trends and the current state of the Summit topic.
2. Multi-disciplinary Engagement – The Summits are sized such that even during the main session, a conversation can occur amongst all participants. Questions and answers are not only between the speakers, but also the participants. Facilitators and moderators from HBS, TECH, and other centers are brought in to ensure engagement and to be a catalyst for the conversation.
3. Action – The ultimate goal of the Summits is impact. For this to happen, action is a critical component. The summits dedicate approximately 25 percent of the time to action sessions with the participants. That format drives the discussion and ideas presented into an action set for both the participants and the broader community.

Attendance is by application only, and senior leaders from any discipline that is relevant to the topic are encouraged to apply. Summits are generally convened on the campus of Harvard University; however off-campus Summits do occur when the topic and location enhance the opportunity for conversation and engagement of the participants.

Topics are proposed by participants, senior leaders in industry and government, and the Fellows in TECH. Topics are chosen based upon relevance and potential for impact in a broad sense, to include economic, societal, and environmental benefits.

For more information about the Strategic Innovation Summit series, please contact the Program Chair, Dr. David S. Ricketts (ricketts@seas.harvard.edu).



Acknowledgements and Credits

We would also like to thank the speakers, panelists, and participants in the 2016 Strategic Innovation Summit on Affordable Communities Everywhere. Their participation created the foundation for a robust and successful learning environment.

Isaac Aggrey, West Africa Social Entrepreneurs Network

Eduardo Aguilar, WeLink Energy

Santiago Alban, Municipality of Quito

Hasan Alemdar, DomoGeo

Rui Almeida, City of Central Falls

Gina Angulo Blanquicett, University Jorge Tadeo Lozano

Eduardo Ayala, ECO Foundation Systems Inc.

Mariano Briceno, BRICKET

Anya Brickman, Affordable Housing Institute

Jose Bustamante, WeLink Energy Group/Barcelona Housing Systems

Gonzalo Chiriboga, Central University of Ecuador

Frederick Cooper, Toll Brothers

Eugenio Correa Alliende, Correa3

Larry Curtis, WinnDevelopment

Marla Curtis, Marla Glanzer Curtis, A.I.A.

Gina Dalesandro, MESPOM Erasmus Mundus Master's Program

Stephen Daley, The Richman Group Affordable Housing Corporation

Martine Dornier-Tiefenthaler, Lawyer's Office of Dornier-Tiefenthaler

Debra Erb, Overseas Private Investment Corporation

Juan Carlos Franco, Fundacion Mario Santo Domingo

Vidhee Grag, Affordable Housing Institute

Prof. Johon Gutierrez Jaraba, Al Gore Institute for Sustainable Development

Verne Harnish, Gazelles

Tom Havens, Partner Day Pitney LLP

Christopher Herbert, Harvard Joint Center for Housing Studies

Michael Hickinbotham, Hickinbotham Group

Bernard Husser, The Richman Group Affordable Housing Corporation

Kira Intrator, MIT's Center for Advanced Urbanism

Aisa Kacyira, UN-Habitat

James Kostaras, Institute for International Urban Development

Manikandan KP, Indian Housing Federation

RT Hon David Lammy MP, Member of Parliament for Tottenham

Stephen Lau, National University of Singapore

Paul Leech, Paul Leech GAIA Ecotecture

Even Lehrer, City of Central Falls

Christine Lemaitre, German Sustainable Building Council

Macy Leung, BRIDGE Housing

Julia McElhinney, CBT Architects

Kristin Miller, Ecocity Builders

Jan Mischke, McKinsey Global Institute

Rodrigo Moraes, Diagonal Transformacao de Territorios

Andre Mueller, Federal Institute for Research on Building, Urban Affairs and Spatial Development

Conor Neill, IESE Business School

Ray Noble, SolarBIPV

Barry O'Neill, Barcelona Housing Systems

Anna O'Donnell, World Bank

Carlos Pupiales, Universidad Tecnica del Norte

Ravi Puravankara, Puravankara Projects Limited

Ajmal Rahman, WeLink Energy

Michael Ramires, The Richman Group Affordable Housing Corporation

Cesar Ramirez Martinell, Cesar Martinell & Associates

Judi Schweizer, Schweitzer & Associates Inc.

Gaurav Shorey, 5waraj

Victor Silva, Affordable Housing Institute

Bryan Staples, Staples Can Group

Lenora Suki, Smart Cities Advisors

Roderick Tennyson, TransAfrica Pipeline Inc.

Maria Torrico, Red de Accion Comunitaria

Sasha Tsenkova, University of Calgary

Libis Valdez Cervantes, Foundation Antonio de Arevalo (TECNAR)

Jack Wilson, Dartmouth College

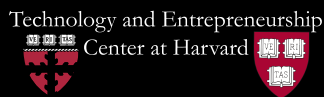
Special Guest Editor:

Julia McElhinney



Passionate about public placemaking, Julia's work explores the many ways in which thoughtful urban planning and design can connect community members more closely to one another and the natural environment. With a strong interest in community-building and sustainability, Julia focuses on fostering community conversation and collaboration through the built environment.

An avid gardener, cook and art enthusiast, she brings extensive personal and professional experience in areas such as sustainable agriculture, local food movements and public art. Julia's studies concentrated on the design and creation of resilient urban communities. She holds a B.A. in Environmental Studies from Dartmouth College. She is currently an urban design strategist at CBT architects.



Hosted By:

The Technology and Entrepreneurship Center at Harvard (TECH) hosts the 2016 Strategic Innovation Summit. TECH, part of the Harvard School of Engineering and Applied Sciences, is both a real and virtual space for students, faculty, alumni, and industry leaders to learn together, collaborate, and innovate. TECH enables this holistic exploration by sponsoring and supporting opportunities for the innovation community to gather and exchange knowledge via courses, study groups, mentorship relationships, innovation programs and special events. Find more information at www.tech.seas.harvard.edu



Sponsored by:

Barcelona Housing Systems is a company revolutionizing the global sector for construction of communities of affordable housing. This is achieved through the introduction of radical large-scale innovation, integrating environmental sustainability, quality, reduced costs, production speed, social development, modularity and scalability. Our mission is to build the future, through the provision of a perfect framework for healthy communities.

Contact Information

<http://theinnovatorsforum.org/2016summits/ace2016>
summit@theinnovatorsforum.org