



Placing sustainability at the core of affordable housing





Affordable housing

Affordable housing is housing designed for very low to moderate income households to rent or purchase and maintain a home without undergoing financial stress.

If we consider affordable housing through a mid-to-long term lens, it becomes necessary that affordable housing is produced to be sustainable.

Sustainable housing

Sustainable housing is designed and built to minimize utility costs and is resilient in the face of natural disasters and extreme weather events. Affordable and sustainable housing is associated with long-term savings due to energy and maintenance efficiency gains, better housing quality, long-term livability, and environmental sustainability.

Currently, more than 60% of the population in Phnom Penh cannot buy an affordable home¹. Stakeholders in the housing sector have yet to tackle the dual challenge of cheaper housing types that include sustainable design features, ensuring that housing stock is resilient to shocks and stresses, whilst reducing water, energy and waste and pollution generated by construction and through usage.

TAKE AWAY POINTS

Current housing policies need to articulate the benefits of sustainability for affordable housing and explain how improving sustainability can benefit a broader environmental, social and economic agenda. Further exploration is required to examine how policy can encourage more sustainable housing that is affordable.

Sustainability and affordability can be achieved via innovations across the housing value chain, particularly with improvements in building, finance and costs. Sustainable housing can reduce maintenance costs, help optimize space and energy use, reduce insurance costs, secure asset values, and generate improved loan conditions such as discounted rates.

Building sustainable, affordable housing is possible, and will reduce costs to occupants over the medium to long term. The net result is reduced energy and water consumption, less demand on urban services providers, and increased sustainability outcomes for city managers, including lower emissions at neighbourhood and city scale. To support this approach, there must be tax incentives/credits / grants/exemptions for developers and buyers .

Housing the most vulnerable populations in affordable and sustainable ways will require the combined efforts of stakeholders from Government, civil society and the private sector, and starts with a blend of innovative housing design, concessionary land and financial services that meets people's needs and meet circumstances. In addition to improvements in housing design, it is essential that finance is addressed. This will require strong guidance from the national financial regulators, particularly preferential treatment of lenders who develop and offer products, such as green loans.



¹ 2020, Planete Enfants et Développement, People In Need, Global Green Growth Institute, Affordable housing in Phnom Penh - Ensuring decent housing opportunities for all.



Land Management

AFFORDABLE HOUSING A VALUE CHAIN APPROACH

A value chain approach includes all costs involved in delivering housing. By taking this approach, efficiencies and savings can be found by identifying opportunities to innovate, whilst building more sustainable approaches at each step of the value chain. Ultimately, the goal is to deliver the best value and quality to homeowners, and to the city itself, at the lowest possible cost.



CHALLENGES

Land prices in and around Phnom Penh have increased exponentially in the past 15 years. A Land Use Master Plan was formally adopted for Phnom Penh in 2015 by the Government but has been difficult to implement for financial, administrative, and political reasons. The planning system lacks a comprehensive approach to land allocation for affordable housing. The 2017 Affordable Housing Policy requires housing projects to be maximum 20 km away from the city center of Phnom Penh - but there are no provisions to address land access. Current land prices, and the lengthy process to negotiate its purchase, make it very difficult to meet the criteria in the 2017 policy, only further deterring developers from investing in the market.



OPPORTUNITIES

A strategy is required that makes the acquisition of land for development in the right location at a reasonable price easier². National and local authorities could develop and implement Land Use Plans with land reserves allocated for affordable housing and mixed-use development. This would mean Government intervention in the land market, either by regulating sale prices for the defined zones reserved for affordable housing, or by the Government subsidizing the purchase of the land.

Several examples of land allocation have emerged in Phnom Penh, some ad-hoc and some thanks to existing frameworks such as Circular 3³ or the Social Land Concession policy⁴. They provide options for easier and less expensive access to land for developing affordable housing, especially for the most vulnerable.



²World Economic Forum, 4 ways to make housing more affordable. 2014. <https://www.weforum.org/agenda/2014/11/4-ways-to-make-housing-more-affordable/>

³2010 Circular 03 on Resolution of Temporary Settlement on Land Which Has Been Illegally Occupied in the Capital, Municipal, and Urban Areas

⁴2003 Sub-decree 19 on Social land concessions

THE ARAKAWA PROJECT

Land allocation to develop a mix-income housing project

The Arakawa project sits on 1.4 hectare of land along the Russian Federation boulevard, in Teuk Thla Commune, approximately 7 km from the city center. The land was handed over by the Government to the developer as a temporary relocation site for the residents of the since-destroyed White building. Instead, the company is developing a mixed-income condo development: 2,960 units in 8 buildings of 20 floors are sold for prices from 30,500 USD to 74,000 USD.

THE BOREI KEILA ONSITE UPGRADE PROJECT

Land allocation to set up cross-subsidy onsite redevelopment in the city center

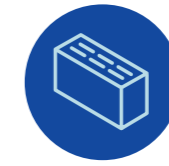
The Borei Keila Urban Poor Settlement (UPS) occupied nearly 5 hectares in the city center. The Government, after discussion with the residents, appointed a developer to redevelop the land: while 2.5 ha would remain available for commercial development, 2 ha would be used for building housing for UPS households. A total of eight buildings totaling 1,344 apartments were built and allocated to UPS families.

THE STUNG MEANCHEY ONSITE UPGRADE PROJECT

Land allocation thanks to infrastructure development

In 2018, Phnom Penh Capital Administration initiated renovation works of the Stung Meanchey canal, as part of the City's Drainage improvement plans. An Urban Poor Settlement (UPS) consisting of 570 households had developed on stilt housing above the canal. The embankment of the canal created newly available land along the canal: land plots (4 by 6 meters) were allocated to each UPS household upon completion of the canal's renovation. Plots were allocated by a lucky draw, equipped with water and electricity by relevant authorities and handed over to households with corresponding land titles.

2.



Building Materials



CHALLENGES

Construction materials are largely imported from nearby countries. Cambodia has the capacity to locally produce cheaper building construction material but the local industry is not growing fast enough to meet demand, and thus does not seem to attract any serious interest from investors.



OPPORTUNITIES

Improvements in building and construction techniques could reduce the costs of housing and reduce its environmental footprint thanks to reduced transportation, lower housing life cycle impacts and less waste.

WORLD BRIDGE HOMES REDUCING COSTS THANKS TO COMPRESSED BRICK ON-SITE PRODUCTION

World Bridges Homes is a mixed-use development on 41 ha along national road 21, in Takmao commune. The project includes 2500 houses on 46 ha priced between USD 18,000 and USD 42,000, commercial space, a school and an SME cluster.

Usually housing is built in Phnom Penh with cement or bricks. World Bridge chose to build with compressed bricks. A Singaporean company was hired to make the bricks and beams on-site, lowering transportation costs and associated carbon emissions. The compressed bricks were chosen because of their good thermal insulation, maintaining indoor temperatures an average 10 degrees less than outside temperatures.



World bridge homes,
Takmao, Cambodia

© The Urban
Platform Studio
(left)

© Dolores Bertais
(right)



Design & Construction

3.

CHALLENGES

Innovative design that makes housing more affordable, more sustainable and resilient to natural hazards, is not usually prioritized in the real estate sector. Housing is rather designed to cater to specific representations of status and comfort. In the case of lower income groups, either when occupying or owning land, housing uses very basic designs from the contractor and no architects support the designing. This can lead to issues of long-term affordability of housing.

OPPORTUNITIES

There is an opportunity for exploring socially and environmentally sustainable housing in Phnom Penh. For instance, the introduction of industrial production processes in incremental housing projects⁵ could make resilient and well-designed housing solutions available, to be gradually completed on a middle-to-long term by homeowners. Including green features also contributes to keep housing affordable in the long term: these cost savings increase the owner's capacity to meet their mortgage payments, improving the lending risk profile of a green dwelling. However, since green features usually mean more investment from the developer's side, a new financial model should be developed – through an incentive system for instance – to ensure green features are effectively included.

Finally, green building standards and certification schemes can push the real estate construction sector in a sustainable direction.

Integrating basic green features into housing has a direct and measurable impact on life cycle energy costs and strong potential to impact finance terms for owners.

⁵Incremental housing is a progressive system, where construction is incomplete but habitable. The houses are designed in such a way that the users finish them according to their own needs and tastes."Van Noorloos F, Cirolia LR, Friendly A, et al. Incremental housing as a node for intersecting flows of city-making: rethinking the housing shortage in the global South. *Environment and Urbanization*. 2020;32(1):37-54. doi:10.1177/0956247819887679



POLICY & GUIDELINES TO INCREASE SUSTAINABILITY ENGAGEMENT FROM THE PUBLIC & PRIVATE SECTORS IN CAMBODIA

Many efforts are underway to improve the sustainability of the construction sector in Cambodia. The Ministry of Land Management is currently finalizing a building code and a Nationally Determined Contributions to the Paris Agreement roadmap for Low-Carbon, Climate-Resilient Buildings and Construction; the Ministry of Mines and Energy is working on developing an energy efficiency building code; the Ministry of Environment and the National Council for Sustainable Development are creating green building guidelines and ratings scheme. The construction sector, under the Cambodia Green Building Council, has also issued a green building ratings scheme. Hopefully these initiatives will set the emerging affordable housing market on the right course to integrate sustainability in all designs.



A housing base costs approx. USD 5,600. The option comprises the structure, roofing, kitchen, and waste water systems

© The Room Studio

BOENG TUMPUN COMMUNITY UPGRADE PROJECT

Incremental housing is based on a simple idea: households buy a "half-unit", which a household can finish when they can afford to.

The Boeng Tumpum Community upgrade plan, developed by Room Studio under the Human Rights based spatial planning project, implemented by NGO People in Need, planned to build 397 houses with various levels of finishing. The cheapest housing option consisted of an unfinished house structure priced at \$5,600 USD, with the walls to be built by the house owners. A completed one-story house is estimated to cost around \$8,200 USD.



Real Granada, Tecamac, Mexico

© Vinte

VINTE HOUSING MEXICO

Vinte is a vertically-integrated developer operating in six provinces in Mexico, using green design. In their project in Real Granada, Tecamac, this translates into smaller windows to minimize heat gain, energy-efficient refrigerators, and a rainwater harvesting system for the irrigation of green areas and the washing of clothes and dishes. Such improvements can reduce utility costs by up to 20%.

In addition, Vinte has achieved an EDGE (Excellence in Design for Greater Efficiencies) certification for its development.



4.

Infrastructure & Urban Services

CHALLENGES

Basic services and infrastructure represent a large investment for cities and governments, especially in cities such as Phnom Penh that have grown exponentially over the past decade. Currently, most of the city-scale infrastructure, such as drainage, clean water distribution, wastewater treatment or solid waste collection are either subsidized or supported by internationally-backed loans through bilateral or international financial mechanisms. The development of infrastructure at neighborhood scale largely relies on developers, who are granted development rights in exchange of making necessary investments in neighborhood infrastructure. This can include community space, such as green spaces, commercial spaces, educational and health services, in addition to basic urban networks such as clean water, drainage, and electricity. This is usually negotiated on a case-to-case basis. This can cause two major issues: 1. increase the cost of housing units, because they absorb the cost of the infrastructure, and 2. lead to low quality networks or spaces developed in order to reduce construction costs, with negative long-term consequences on quality of life and home value.

OPPORTUNITIES

Many existing policies are not currently operational: their implementation would offer an opportunity to effectively deconcentrate and decentralize planning responsibilities to the Department of Urban Planning as well as the Urbanization Division of Phnom Penh Capital Administration. This could be accompanied by capacity building programs when required. Commune authorities should be involved in planning efforts to ensure coherence of development at local scale as well as to gradually take over the responsibility of investing and maintaining urban infrastructure, as communal resources grow⁶. This should in turn alleviate costs for developers who will, thanks to reduced costs, be able to reduce housing costs. Finally, green building standards and certification schemes can push the real estate construction sector in a sustainable direction.



5.

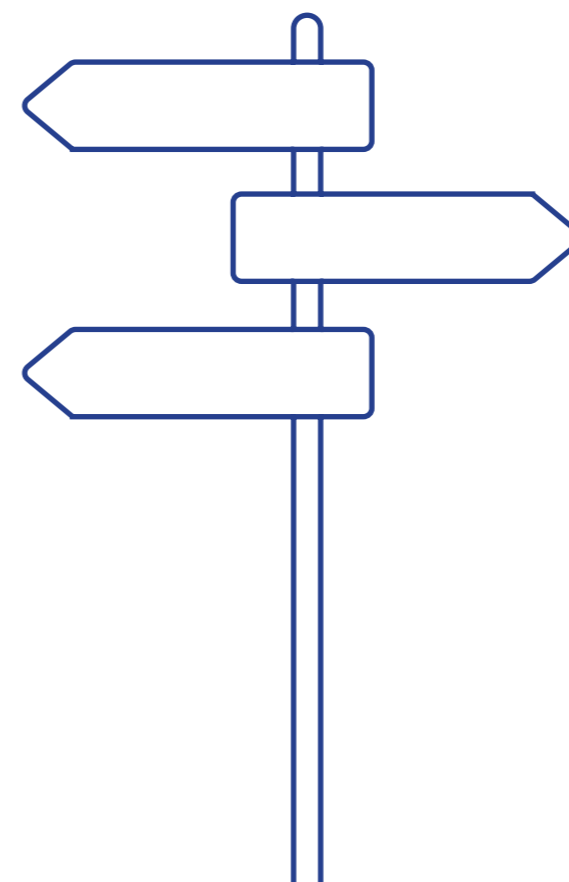
Distribution & access

CHALLENGES

A set of criteria identifying target groups eligible for affordable housing is defined in the 2017 housing policy; however, it is not currently being implemented. Developers currently selling housing units at lower prices than the average are selling to anyone who is willing to buy.

OPPORTUNITIES

A state-led entity could be set up to filter eligible households. In neighboring countries such as Malaysia or Thailand, public platforms have been created to process applications to purchase affordable housing. Households must meet criteria such as income, number of family members, being first-time homeowners, etc. The entity then connects households with a developer offering a home that meets their needs, acting as a go-between for prospective homeowners, developers and, in some cases, financial services.



⁶<https://phnompenhpost.com/national/commune-development-budget-double-2020>

6.



Financing



CHALLENGES

Housing finance currently serves homeowners in middle to high income groups, with access to financial products based on possession of a land title as collateral. This has led to the development of a secondary finance market where some developers offer loans at higher interest rates, requiring less or zero collateral, and with little to no legal protection for buyers.



OPPORTUNITIES

The lower income segment requires a customized approach, with a stronger emphasis on household credit assessment, financial hardship support and the flexibility to restructure the loan. Lowering the overall costs and risks associated with development and purchasing of homes needs incentives from the government or international cooperation actors, and increased access to finance at lower interest rates from international capital markets for Cambodian financial institutions. This would bring short to medium term gains and help grow the affordable housing market.

Refer to paper 4 on financial inclusion for a more detailed exploration of the topic of financing

7.



Maintenance



CHALLENGES

Maintenance of housing stock is key to retaining the value of homes and ensuring durability over the years, minimizing the need for destruction and reconstruction. Maintenance of affordable housing units relies on the investment of two main stakeholders: homeowners themselves, and the authority in charge of neighborhood upkeep. In Phnom Penh, the latter tends to be either the developer or a company created by the developer to remain behind and maintain the neighborhood. This tendency to leave urban management responsibilities with a private company can cause problems if not directed and controlled by public authorities.



OPPORTUNITIES

Local and capital authorities can take the lead in defining a framework, setting standards and controlling implementation of neighborhood infrastructure. They can also take the lead in information sharing and expertise on housing maintenance to help homeowners keep their property in good condition.

