

Innovation Awards 2023 Digital Booklet

October 26-27, 2023

Suwon, South Korea





Dear 9th Asia-Pacific Housing Forum attendee,

We are excited to present the Asia-Pacific Housing Forum Innovation Awards 2023 digital booklet, where we unveil the Finalists and Honorable Mentions in the Policy, Program, and Sheltertech Categories. These groundbreaking innovations are poised to elevate the standards of affordable housing within the Asia-Pacific region.

Habitat for Humanity is deeply committed to the cause of housing affordability and is privileged to witness these remarkable solutions being recognized and showcased. The potential of these initiatives is inspiring, and their pursuit of modern solutions to the perennial challenges in affordable housing is commendable.

We hope you will immerse yourselves in the Innovation Awards 2023 to gain invaluable insights, to forge meaningful connections with this year's finalists and honorable mentions, and to explore collaboration opportunities. The Asia-Pacific region, with its diverse and pressing housing needs, will undoubtedly benefit greatly from the contributions of the exciting projects presented today.

With sincere wishes, Habitat For Humanity International

What are the Innovation Awards?

The Innovation Awards, which have been held since 2016, became the signature and highly anticipated event at the at the series of Housing Forums organized by Habitat for Humanity. Its primary objective is to inspire and empower individuals, organizations, and institutions to think creatively and problem-solve in order to address the housing challenges that families and communities face.

The Innovation Awards have a focus on innovation and seek to acknowledge exceptional initiatives, programs, and solutions that are making a meaningful impact on the way communities enhance their living conditions. These innovations can encompass a wide range of areas, from construction and architecture to social and community development.

Over the years, this event has showcased an impressive array of remarkable innovations and projects. The Innovation Awards have provided a platform for individuals and organizations to demonstrate their efforts and accomplishments in improving housing conditions and community well-being.

As the event continues to evolve and grow, Habitat looks forward to presenting new innovations and projects at the 9th Asia-Pacific Housing Forum, with the goal of fostering collaboration and driving progress in the field of housing and community development in the Asia-Pacific region.

About the Innovation Awards 2023

From July 3 to August 21, 2023, the Innovation Awards team received over 3,000 applications originating from 22 countries across the Asia-Pacific region. This massive response reflects the engagement and commitment of individuals, organizations, and institutions to address the pressing housing challenges in the region.

Our Innovation Awards 2023 jury team presented in this booklet and renowned for their wealth of experience in different sectors, evaluated all the applications. Their dedication and knowledge were instrumental in identifying and selecting a distinguished ensemble of the **12 groundbreaking innovations**, presented in our Digital Booklet.

These 12 innovations are taking the center stage at the 9th Asia-Pacific Housing Forum, coming from all over the region. Their recognition at the Forum will undoubtedly serve as an inspiration and a source of shared knowledge for all those invested in advancing housing innovation in the Asia-Pacific region.



Innovation Awards 2023 Categories



Policy: Public Sector Housing Solutions

This award acknowledges
transformative policies within the
public sector that drive
advancements in housing
affordability and sustainability. It
recognizes innovative proposals by
various actors, including government
agencies, non-governmental
organizations, research institutions,
and other stakeholders. It
encourages the development and
sharing of impactful policies that
improve housing conditions and
create sustainable communities.



Program: Civil Society Housing Impact

This award recognizes the impactful contributions of civil society initiatives towards affordable housing solutions. It honors innovative programs and projects led by civil society entities that drive positive change in the affordable housing sector. This category highlights the crucial role of civil society in mobilizing communities, advocating for housing rights, and implementing grassroots initiatives to improve housing conditions and empower vulnerable populations.



Sheltertech: Private Sector Technology

This category focuses on scalable, sustainable and inclusive technologies with potential to significantly impact the housing deficit and improve living conditions for low-income households. It showcases innovative solutions developed by startups, scaleups institutions and corporations.



Category

Policy: Public Sector Housing Solutions



Policy: Public Sector Housing Solutions Category - Jury Members



Puja SawhneyGlobal Director, Climate Change
Habitat For Humanity International



Dao HarrisonSenior Housing Specialist
World Bank



Zinaida Fadeeva
Team Leader of the Sustainable
Consumption and Production Facility
(SCP Facility)
EU Switch Asia



Sanjeevani Dilanthi Singh
Economic Affairs Officer
United Nations Economic Commission for Asia
Pacific (ESCAP)



Subrata Dutta GuptaBoard Member, Joyville Shapoorji Housing Private
Ltd. Nominee Director, Asian Development Bank

Finalist





The Manila Housing Program

City Government of Manila



Problem

The challenging state of public housing in the City of Manila is a result of years of conflicting approaches and short-term fixes. This situation is further exacerbated by a lack of engagement from the local residents. Factors such as a constant influx of migrants through the Manila port, unregulated urban expansion, and rapid gentrification have compounded the issue. Accommodating the growing informal population has become a persistent and substantial challenge that continues to affect the city's present condition.

Policy Description

The Manila Housing Program employs a holistic strategy to address the housing challenge, going beyond the mere provision of dwellings. It also takes into consideration the broader well-being of residents by integrating elements of disaster resilience, climate adaptation, and social integration. The program focuses on serving low-income families, informal settlers residing in critical zones, and the most vulnerable segments of the population. This targeted approach ensures that those who are frequently marginalized and at greater risk are given utmost priority. The overarching goal of the housing policy is to foster the creation of livable and socially responsible residential communities.

Partnership Offer

The city government of Manila is open for cross-border collaboration. One key aspect is the sharing of best practices and learnings from others' successes and setbacks in housing policy initiatives, ultimately leading to more effective solutions. It can establish spaces to facilitate cooperation on housing issues, providing a platform for constructive dialogue and problem-solving.

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Affordable Housing Program for Low Income Households With Non-Fixed Income

Directorate of Housing Finance, Ministry of Public Works and Housing



Problem

In Indonesian urban areas, a severe housing ownership issue exists, especially in vertical housing structures, resulting in a massive backlog of 10 million households. This backlog significantly impacts people's access to affordable and secure housing, especially for those in the informal sector, where the backlog reaches 59.45%, emphasizing the urgency of this problem. Additionally, the housing sector contributes to carbon emissions (3.88% direct and 20.72% indirect), highlighting the need to address environmental concerns and reduce the housing sector carbon footprint.

Policy Description

The Ministry of Public Works and Housing, in collaboration with the World Bank, introduced the National Affordable Housing Program (NAHP) from 2018 to 2022 to enhance access to affordable housing. This initiative targeted lower-income households through three key components. One of these components, known as BP2BT (Mortage Linked Down Payment Assistance), is specifically designed to assist lower-middle-income households, especially those in the informal sector, who struggle to access commercial mortgage financing as first-time homeowners without public assistance.

Partnerships Opportunities

The Indonesia Green Affordable Housing Program offers unique partnership potential in blended finance. It targets affordable housing for the informal sector, encompassing new construction and quality upgrades, expanding the BP2BT scheme for a wider impact. Although not explicitly stated in the policy description, the partnership opportunities aim to unite resources for a greener and more sustainable future. This collaboration can address Indonesia's housing issues, especially for the informal sector, and promote environmentally friendly housing solutions.

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Making Housing Affordable for Low Income and Microfinance Sector

Pakistan Mortgage Refinance Company

Honorable Mention



Problem

Housing shortage is an acute problem in Pakistan. The deficit is primarily concentrated in urban areas due to rapid urbanization and rural-to-urban migration. The housing shortage in Pakistan is estimated at 10 to 12 million units and it is increasing by 350,000 units annually. One of the main challenges in the affordable housing segment is the lack of adequate and accessible housing for low- and middle-income borrowers. The microfinance sector encounters notable constraints in providing housing loans due to funding limitations and capacity challenges.

Policy Description

The Pakistan Mortgage Refinance Company introduced fixed rate mortgages, revolutionizing the industry and benefiting borrowers and lenders. Stability and reduced risk instilled confidence, enabling responsible lending and affordable homeownership opportunities. Additionally, PMRC promotes gender equality by incentivizing better terms for female borrowers, reducing the gender gap in mortgage financing access. PMRC also introduced Environmental and Social standards for mortgage loans, promoting sustainable and socially responsible housing development. Not only does it promote green standards and climate-resilient infrastructure. PMRC also activated the microfinance sector to offer housing loans to customers at bottom of pyramid.

Partnership Offer

Long Term Concessional Funding: For sustainable growth of the housing market in Pakistan, fixed rate long term funding is required to provide confidence to mortgage lenders. Long term concessional funds can be deployed through institutions like PMRC which have organized structure and strategy to promote housing. This calls for the requirement of massive increase in residential/commercial buildings construction in the near future.

Capacity Building and Training: This is one of the critical areas to introduce new products and models for low-cost housing and capacity building of private finance initiatives for its implementation and to improve underwriting skills.

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Honorable Mention



Building Permit Procedure Resource Book

National Society for Earthquake Technology



Problem

According to the 2021 census, 22% of the existing buildings in Nepal are made of reinforced concrete and the remaining 78% are mud-bonded bricks, stones, cement-bonded stones, wooden pillars, and various other building forms. Existing policies and regulations primarily emphasize concrete-based structures, neglecting the inclusion of rural buildings within the building permit process. Additionally, There is no mechanism of ensuring the compliance of the buildings. Consequently, a majority of buildings are constructed without the requisite permits from local authorities. This oversight significantly amplifies the potential risks these structures face in an area highly susceptible to frequent and severe earthquakes.

Policy Description

NSET's solution introduces a novel risk-based construction permit system, tailored to the level of risk. It resulted from extensive collaboration with 50+ municipalities in Nepal, clarifying stakeholder roles and responsibilities. The goal is a uniform, sustainable approach to construction permits, fostering resilient communities and advancing sustainable development. This policy and its associated resource book complement each other, enhancing understanding and promoting safe, sustainable construction practices in Nepal.

Partnership Offer

NSET proposes partnerships for the sustained technical support necessary to ensure the successful implementation of this policy within local governments of Nepal. Among the 753 local governments in Nepal, about 50 municipalities have already effectively embraced this policy, and approximately 700 are in need of technical assistance. NSET's collaboration aims to bolster the capacities of local government authorities, designers, construction workers, and homeowners. Furthermore, the knowledge and experience gained through this partnership can be readily adapted and applied to other South Asian countries, ensuring its relevance and impact throughout the region.

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Category

Program: Civil Society Housing Impact

Program: Civil Society Housing Impact - Jury Members



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The Faculty of Built Environment
University of New South Wales



Florian Beranek
CSR and Responsible Business Conduct Lead for
UNIDO (United Nations Industrial Development
Organisation) and other UN programs



Shruti Narayan
Regional Director South and West Asia
C4 Cities





Priority Zones in Urban Poor Settlements of Phnom Penh

Planète Enfants & Développement



Problem

Planète Enfants & Développement (PE&D), a non-governmental organization, is actively engaged in an initiative focused on improving housing and living conditions in impoverished urban settlements in Phnom Penh. This endeavor is being carried out with the invaluable support of local partner organizations. Within these targeted communities, specific areas have been identified where the most vulnerable families reside, and they are confronted with substantial challenges when it comes to securing suitable housing and accessing adequate sanitation facilities.

Program Description

Along with providing household housing support through the provision of tailored repairing kits, PE&D launched a new approach called "Priority Zones" which aim to identify together with residents and local authorities the most unsafe areas within the communities.

These priority zones will benefit from complete renovation and infrastructure upgrading as a result of a urban planning participatory process including workshops and urban design involving technicians/experts and inhabitants.

Partnership Offer

Planète Enfants & Développement is in pursuit of technical support and partnerships with other organizations actively involved in participatory urban planning initiatives and slum upgrading projects, focusing on both housing and communal infrastructure enhancements. Securing funding or financial backing to advance the improvement project for the vulnerable settlements in question is also of utmost importance.

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Kampung Susun Akuarium (Vertical Kampung)

RUJAK Center For Urban Studies



Problem

In Jakarta, a narrow approach to modernization, coupled with a top-down methodology, has resulted in extensive forced evictions, particularly affecting kampungs, or informal settlements. These evictions have significantly disrupted the lives of kampung residents, displacing them from their homes and fracturing their social bonds. To address this issue effectively, a more comprehensive, community-oriented approach must be adopted, prioritizing community involvement and collaboration to create sustainable solutions that protect residents' rights and their social connections.

Program Description

This community-centered housing rights project helped evicted residents advocate for significant legal and political changes that allowed them to rebuild their houses in improved condition. Rujak offered a design solution called Kampung Susun, or vertical kampung, as a social production of vertical mixed-use buildings consisting of residential units, supporting the unique ecosystem of economic and social activities of kampung inhabitants. The project was co-designed, implemented and managed equally by legal entities formed by the community.

The community design phase started in 2017 and continued in 2019. The construction started in August 2020 and is funded by the infrastructure levy. The first two blocks for 104 families were finished in August 2021, while another two blocks were finalized in June 2023.

Partnership Offer

Residents of Rujak and Kampung Akuarium have the potential to contribute valuable insights through action research in the realm of housing. This could involve the development of capacity-building initiatives and co-design workshops aimed at empowering community leaders and fostering collaboration with city officials. By engaging in such activities, the residents can play a pivotal role in addressing housing-related challenges and strengthening the community's voice in urban development.

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Sustainable Enterprise Project (SEP): Promotion of environment friendly construction materials and technologies in coastal region of Bangladesh Community Development Centre

Honorable Mention



Bangladesh

Problem

Coastal Bangladesh is highly vulnerable to cyclones and other natural disasters. Families in this region often lose their homes during cyclones because traditional housing can't withstand the winds and salinity. Some use bricks, but these have issues like quality variations, low salinity resistance, and high maintenance costs. Cement blocks are a more cost-effective and resilient solution, but people are unfamiliar with them. The Sustainable Enterprise Project aims to introduce cement blocks to empower coastal communities to face climate change.

Program Description

The Sustainable Enterprise Project generates revenue through a Climate Smart Centre. It enhances brick quality and resilience against cyclones while empowering Micro-entrepreneurs. The initiative promotes sustainability using eco-friendly materials in public infrastructures and housing. It encourages innovation and environmental compliance through testing facilities and workshops. Cement blocks play a vital role in this project by offering a more sustainable and cost-effective alternative to traditional brick construction, addressing the core housing challenge in coastal Bangladesh.

Partnership Offer

CODEC invites potential partners to collaborate on its pioneering initiative, designed to address the pressing challenges of environmental sustainability and climate resilience in Bangladesh's vulnerable coastal regions. The organization seeks partners who can contribute to critical research and funding in two key areas: climate-adaptive livelihood development and further innovation cement block technology.

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Honorable Mention



Building Houses Using Cost effective Technologies for the Poor

DHAN Housing and Habitat Development of Poor for Empowerment Confederation



Problem

Low-income people in India face limited access to entitlements, finance, and cost-effective technologies. Their participation in the informal job market restricts their ability to access financial products available to other homeowners. Cash flow management, overcrowding, vulnerability to disasters, and legal rights concerns compound the housing crisis, while operational issues with land title documents and bureaucratic delays hinder the scaling of housing projects, indicating a multifaceted challenge in providing affordable and suitable housing for marginalized communities.

Program Description

DHAN's housing program promotes community banking and the adoption of cost-effective technologies to build sustainable habitats. Through technical services and capacity building, the organization empower communities to build their own homes. Their mission is to provide accessible, affordable, and appealing housing solutions, ensuring that everyone has a place to call home with the scale advantage through social capital while fostering self-sufficiency and community development.

Partnership Offer

DHAN seeks partnerships to empower homeless, landless, renters, and leasers, fostering social capital. The goal is to establish a mutual housing federation to support the housing needs of the underpriviledged. The organization plans to scale the startup to showcase sustainable building technologies and cost-effective construction methods in a resource center, bolstering stakeholder capacity, as well as a revolving fund to manage the cash flow of low-income families.

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Category

Sheltertech: Private Sector Technology

Sheltertech: Private Sector Technology Category - Jury Members



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Joseph Pais COO Graitec



Priya ThachadiCo - Founder and Chairman
Villgro Philippines



Maricen Jalandoni
President, Base Bahay Foundation
Asia Liaison for the Hilti Foundation



Lavanya JayaramRegional Director for South Asia
Asian Venture Philanthropy Network



Anoop Nambiar
Country Lead - India Lab
Habitat for Humanity International





Bandhu

Bandhu

Problem

Every year, 300 million low-income migrants/refugees within India migrate from rural to urban areas in a bid to escape poverty, conflict and climate change-induced livelihood uncertainty. They need both a job and housing – otherwise they remain stuck between the rural and urban. Housing is the more formidable challenge, with many workers pursuing informal arrangements while uncertain if they can remain in the city long term. Yet informal housing often carries with it many hidden and long-term costs—keeping migrants from saving, building credit, or improving their socioeconomic status.

Technology Description

Bandhu is an artificial intelligence-led technology platform that connects migrants to bundled jobs and affordable rental housing. We help workers build their first credit score via digital transactions—unlocking affordable borrowing rates that help them put this money toward rent, deposits, purchasing a home, or completing home improvements that increase climate change resilience. The platform empowers local migrant women as digital micro-entrepreneurs—tripling women's incomes and changing patriarchal norms—and leveraging conversational AI to drive engagement and build trust in technology.

Finalist



Partnership Offer

Bandhu looks to partner with various players in the migration ecosystem. It hopes to collaborate with multilateral organizations and governments looking to solve for affordable rental housing in rapidly urbanizing cities; migration-focused NGOs which can help establish trust on-ground and scale in cities throughout the developing world; and private-sector organizations looking to house their workers.

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Finalist





WeavAir WeavInsight

Problem

Heating, ventilation and air conditioning systems make up more than 50% of energy use and a lot of this energy consumption is a result of not having accurate real-time measurements. Building systems can accelerate the spread of air pollutants, bacteria and virus. Additional challenges remain in making housing more climate resilient. Increased frequency of heat waves is leading to increased risks for housing especially for low-income communities. Urgent action is needed to improve wellness and safety of people & climate resilience in housing development & operations, but limited data is available.

Technology Description

By combining networks of internet-of-things sensors, satellite imagery and drone data, as well as Al-powered software, WeaveAir supports at least a 10-fold time and cost savings in housing development and management. The solution helps reduce costs, while tracking the impacts of energy transition. It also can be used to identify, reduce and prioritize climate risks, leading to improved resilience and reduced investment and insurance risks. The solution has been piloted in across five countries and is easily scalable.

Partnership Offer

WeavAir is looking for partners, such as developers, building owner and managers, system integrators, telco and network companies, sustainability consultants, architects, maintenance contractors, ESCOs, auditors and surveyors, and investors with strategic interest and experience in real estate, mobility and transport. It is interested in meeting housing investment, insurance companies and government officials.

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Honorable Mention



India

ECOSTP® sewage to gold™

ECOSTP Technologies

Problem

More than 80% of world sewage water is let into lakes and rivers without being treated. This is causing a huge problem to our environment. More than 400,000 children under the age of five are killed due to water borne diseases. Current conventional sewage treatment plants, which require huge amounts of power, chemical and operators to run, is not the right solution given that it is centralised and require huge Capex and Operational expenditure.

ECOSTP

Technology Description

Rediscovering nature's genius in treating sewage - the cow's stomach our unique patented technology treats sewage in a decentralised, selfsustainable way in underground chambers without power, chemicals or human intervention. Using biomimicry, or regenerative innovation inspired by nature, ECOSTP utilises functional principles and strategies of microorganisms and ecosystem found in a cow's stomach.

ECOSTP addresses six United Nations Sustainable Development Goals and has been selected as a Best Practice case study for ESCAP SDG Sustainability Asia-Pacific report.

Partnership Offer

ECOSTP is looking for partners globally who can help implement its nature-based sustainable solution across different countries. It can provide the technology and implement pilot projects across different housing societies where there is an urgent need to treat domestic sewage without use of any chemicals and energy. It is a Net Zero sustainable solution provider.

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Problem

In the realm of construction and infrastructure development in India, a series of pressing challenges loom large, demanding innovative solutions and collective efforts. These challenges span a spectrum, each with its own unique impact and urgency:

- Non-availability of earthquake-friendly lightweight bricks.
- High labor cost along with non-availability of bricks all the season.
- Low strength and high-water absorption of bricks.
- Highly unorganized market.
- 30,000 tons of waste plastic are generated per day in India.
- · Microplastics are observed in humans' blood.
- 270 million tonnes of fly ash are generated in India annually.

Technology Description

Zerund offers innovative, eco-friendly construction solutions, including cost-effective, lightweight bricks with exceptional earthquake and fire resistance. These bricks are made from recycled materials, reducing environmental impact and CO2 emissions.

It is developing Zerund Premix, a pioneering polymer technology, to revolutionize lightweight brick manufacturing. It reduces raw material usage, minimizes water consumption, and enhances the final product's compressive strength while reducing water absorption.

Honorable Mention



Partnership Offer

- 1. Exploring Opportunities for Business Expansion in South Korea
- 2.Cultivating Collaborative Partnerships with Companies to Foster Innovative Solutions
- 3.Forming an Alliance with Habitat for Humanity to Integrate our Products into their Future Projects
- 4. Striving for Certification to Enhance Credibility and Relevance

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Connect with our Innovation Award finalists

We invite you to engage with our innovators and their projects, explore potential partnership opportunities or provide valuable feedback.

Scan the QR code or click <u>here</u> to access the form.





