



Building Transition Homes from Plastic Waste: A Pilot in Pasig City

Turning 2,200 kg of plastic waste into housing:
lessons from the Pasig Bliss III prototype.

Evergreen Labs, headquartered in Singapore with country offices in Vietnam and the Philippines, is a creative business lab focused on social, circular economy venture building in Southeast Asia since 2016. Our purpose organization aims to solve pressing environmental and social challenges through innovative, circular social businesses in emerging Asia and beyond.

To date, we have built and currently operate four social enterprises and use our grassroots expertise to work with development organizations, private sector businesses, and governments on various projects across SEA. Our core expertise lies in solid waste management (primarily plastics), agriculture value chain, water, circular economy models (including reuse systems & closed-loop supply chains), upcycling technology, and responsible, inclusive supply chains.

Evergreen Labs pioneers accessible sustainability through decentralized innovation. We build affordable, ground-up solutions that bring the circular economy to those who need it most, transforming environmental challenges into opportunities for all.



Introduction

In **Pasig City**, the path to permanent housing for informal settler families begins with a practical question: where do those families live while their homes are being built on the land they already occupy?

The city's approach, led by Mayor Vico Sotto, is deliberate. Rather than relocate informal settler communities to distant sites — a common shortcut that severs families from their schools, livelihoods, and social networks — Pasig purchases the land they already live on and constructs permanent housing on the same site. It is a strategy that keeps people connected to the places that anchor their lives. But it creates an operational gap: during construction, families still need somewhere safe and livable to stay.

Pasig's first answer to that gap is now standing in Mt. Kanlaon Building, Pasig Bliss III. It is a four-to-five-person transitional housing unit designed to provide safe and dignified temporary shelter while permanent housing is being completed. And it is built largely from recycled plastic waste.





A SPECIFIC GAP In the Housing Strategy



Ricardo "**Ka Rick**" Reyes, from the Pasig City Urban Settlements Office, frames it plainly:

"The strategy that our mayor has taken is to purchase the lands occupied by the informal settlers so that we can build the housing projects there, so we are hitting two birds with one stone... That is why we are very happy to see a model example to say that within a week, or a few days we can have one. We already have a lot where we can build some of these houses."

The unit completed in Pasig Bliss III is the proof that the model works. It is also the first step in scaling it. More importantly, it demonstrates how a city can address housing and waste management challenges through a single integrated solution.

What was built, and what it is made of

The prototype is a fully functional modular home designed to accommodate four to five occupants. It includes essential utilities, space-efficient features, and finishes that sit well above minimum livability standards. The unit was completed in two months.

At the core of its construction are approximately 2,200 kilograms of flexible plastics — sachets, multilayer pouches, bubble wrap, and other low-value plastic waste that typically ends up in landfills or waterways. These plastics were processed using ReForm Plastic Technology, a social venture of Evergreen Labs, which converts low-value plastic waste into durable construction boards.

Approximately 60 ReForm boards form the primary structural material for walls, panels, and selected framing elements. The design extends circular materials beyond structure: bathroom tiles are produced from a composite of recycled plastic and resin, and the sliding door is made entirely from recycled plastic. Roofing was enhanced with shingles for durability and aesthetic finish.

The ReForm boards used in the unit are HB-rated and self-extinguishing under an adapted UL 94 standard for fire safety.

Livable, not just functional

A common critique of sustainable housing is that it sacrifices quality, comfort, or design. The Pasig prototype was intentionally developed to challenge this perception. The Pasig unit was deliberately built to challenge that assumption. Furniture and fixtures from IKEA, paired with accent pieces from Flying Tiger, give the interior a clean Nordic character — a nod to the project's supporting partners.

Mayor Sotto, on the site visit with the Nordic Ambassadors, made the point directly:

*"It doesn't look like it. It looks like a normal housing unit. But it is actually made from **recycled materials**, it's made out of plastic — a large part of it, the majority of the materials, is."*



Ambassador of Norway Christian Halaas Lyster framed the broader principle the project is built around:

*"**Circularity** is of course about safeguarding the environment, but at the same time means creating impact in every person's life. This is more than just a single unit. It's actually an inspiration that hopefully in the future we will see more of these units, more units that can help people here in Pasig, and really make sure we are aligned with the Nordic Spirit — about sustainability, about resilience, and above all making sure that no one is left behind."*



A partnership across geographies

The project was made possible through a partnership between Evergreen Labs Philippines, the Nordic Council of Ministers, and Pasig City, supported through the Green Economy Program — a collaboration between Nordic countries, the European Union, and the Bloomberg Foundation.

Ambassador of Denmark Franz-Michael Mellbin connected the work to a broader global challenge:

*"For the world, there is a real problem — that is bringing affordable, sustainable housing to people, because cities play a monumental role in the **urbanisation** that's taken place worldwide. It's very important to find innovative, sustainable solutions to how to solve those problems."*



Ambassador of Sweden Anna Ferry pointed to the specific resilience dimension of the work in a Philippine context:

*"This project is extremely important — it can provide **housing for families** in transition. As we know, the Philippines is most prone to natural disasters. So this is extremely important, to make sure that families can live through a period of time in dignity and safety."*



THE ECONOMICS OF REPLICATION

An Overview

As the model transitions from pilot to implementation, construction becomes the primary cost driver, creating opportunities for significantly lower unit costs through standardisation and economies of scale.

The prototype reflects a full demonstration build, including research and development, design validation, project management, construction, and furnishing components. This prototype included significant investments in:

- Research and development
- Design validation
- Project management
- Demonstration-quality finishes

These are largely one-time costs.

As a first-of-its-kind pilot, a significant portion of the investment was allocated to research, design, and project management activities that are not expected to recur at the same scale in future deployments. Future deployments are therefore expected to achieve significantly improved cost efficiency while maintaining the core functional and environmental performance of the model.

THREE PATHWAYS TO SCALE



LGU Led

The first is **LGU-led adoption**. Pasig City could take the design templates and technical guidance from Evergreen Labs and implement future units using conventional materials and local contractors. This approach gives the city flexibility while maintaining the design integrity of the model.



Housing Program Integration

The second pathway focuses on **integrating modular units** into broader housing, community development, and disaster response strategies. In this model, Evergreen Labs can support the planning, coordination, and deployment of additional units as part of larger-scale implementation programmes.



Local ReForm Facility

The third — and most strategically integrated — is the establishment of a **local ReForm Plastic production facility within Pasig**. With an estimated investment of approximately USD 100,000, such a facility would allow the city to directly convert collected plastic waste into construction materials. A standard ReForm Plastic setup can process around two metric tons of plastic per day and produce up to 60 boards daily. This pathway links the city's waste management system directly to its housing development pipeline, closing the loop between two of Pasig's most pressing urban challenges.

A step in a longer programme



The Pasig Modular Housing Project does not exist in isolation. It is part of a larger commitment by the city to circular economy solutions, most visibly through the Innovation for Circular Economy Hub (ICE Hub), inaugurated earlier with Nordic partners.

Mayor Sotto, on the site visit, was direct about what the prototype represents and what it makes possible:

"We want to make sure that this Innovation for Circular Economy Hub doesn't remain a simple thing that we inaugurated. It is something that we want to change the way that we live. We want to change behaviours and outcomes for our city through solutions that are more sustainable... This prototype solves that big problem that we have. We are looking at one unit now as a proof of concept, but we believe this will be the start of the sustainable solutions that we have for our housing programme. This will enable us to fix the housing problem in a lot of informal settler communities in the City of Pasig, moving forward. This will enable us to move faster, in a more sustainable way."



LOOKING AHEAD

The Pasig Modular Housing Pilot is more than a prototype.

- 1 It demonstrates that low-value plastic waste can become a valuable construction resource, that transitional housing can be delivered quickly and with dignity, and that circular economy principles can be integrated into real-world city programs.
- 2 It proves that circular construction can integrate into a city's existing housing strategy without compromising on quality or dignity.
- 3 It proves that housing and waste management — typically treated as separate municipal challenges — can be linked through a single piece of infrastructure: a local production facility that converts the city's waste into the city's housing materials.
- 4 And it proves that the model can move quickly. From design to liveable unit took two months.
- 5 Transitional housing can be deployed rapidly while maintaining safety, dignity, and quality of life for affected families.

For Pasig City, the project offers a pathway to address housing and waste management together. For other cities, it provides a practical example of how environmental challenges can be transformed into social solutions.

The next chapter is not about building one unit—it is about building a system that can be replicated, adapted, and scaled wherever communities face the same challenges.

The site visit on April 20, 2026, with the Nordic Ambassadors marked the formal opening of conversations about what comes next. For the families in informal settlements across Pasig — and for cities elsewhere facing the same overlap of waste, land scarcity, and housing pressure — what comes next is the part that matters.



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Contact our team to explore how:



68 Circular Road #02-01
Singapore 049422



Vietnam +84 236 3912 686
Philippines +63 917 5065 552



info@evergreenlabs.org



www.evergreenlabs.org