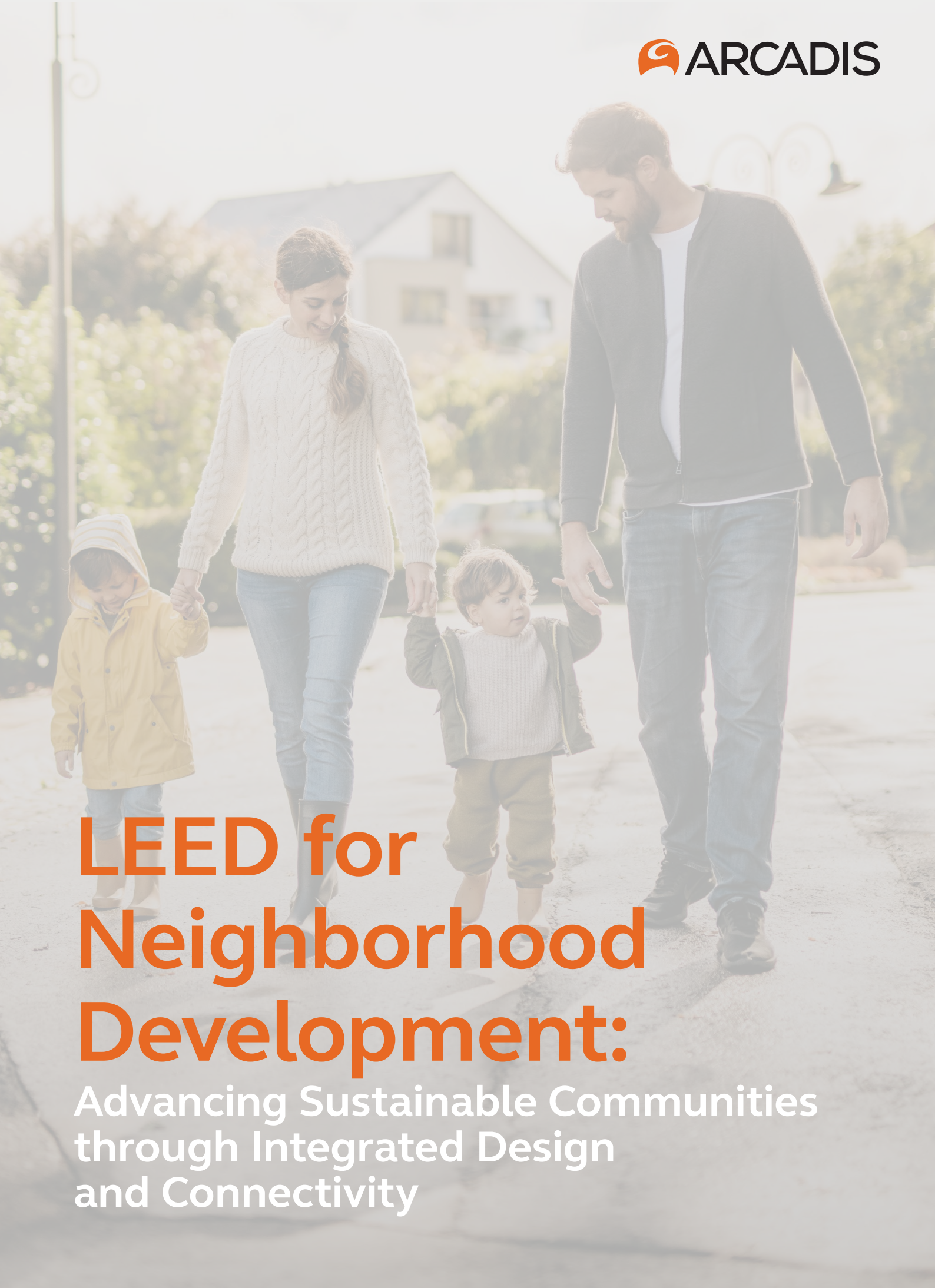


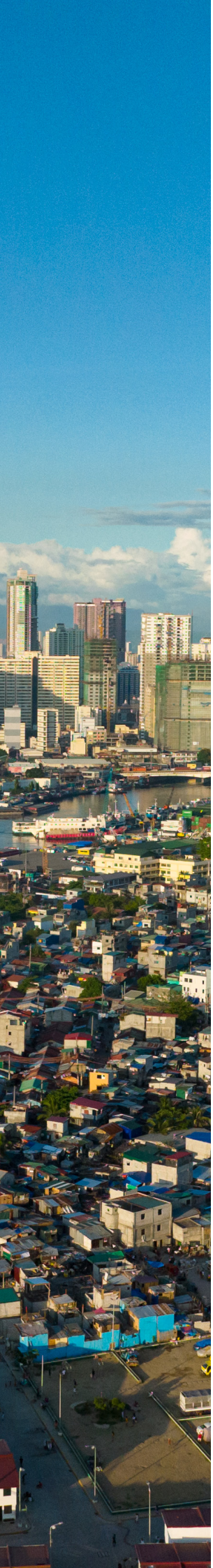
LEED for Neighborhood Development:

Advancing Sustainable Communities through Integrated Design and Connectivity

The Evolving Form of Greater Manila

The rise in Metro Manila's population and urban density is shifting towards the outer edges of its core cities, a trend that is increasingly observed in metropolitan areas worldwide.

In 1950, the majority of urban areas in Metro Manila were concentrated within the City of Manila. However, today, when we consider the population density of the Greater Manila area, which encompasses NCR, Cavite, Laguna, Batangas, Rizal, Bulacan, and Pampanga, the City of Manila comprises only 5%, while 95% is located in the outer suburbs and neighboring provinces. Furthermore, as the distance from the urban core increases, population density sharply declines. Notably, there is a significant presence of single-family housing on small lots throughout Greater Manila, particularly in the outer suburbs.



Urban Sprawl

Urban sprawl is defined as the rapid expansion of housing, commercial development, and roadways over vast stretches of land. It is often characterized by inefficient land-use zoning, low density, and a high dependency on cars. The negative effects of rapid urbanization on the environment are evident, with widespread water, air, and soil pollution. Biodiversity also suffers when large-scale land developments indiscriminately encroach upon productive agricultural land, forests, and wilderness areas. The rapid density and urban growth of Metro Manila can be observed through satellite images captured over the past few decades. Urban sprawl can have a range of detrimental effects on the health of individuals and communities, including increased exposure to pollution, reduced physical activity, heightened stress, and limited access to green spaces. Addressing these health impacts often requires comprehensive urban planning that promotes sustainable and compact development, public transportation, and community-oriented design.

IMAGE 1: GREATER MANILA AREA, 1985. URBANIZATION CAN BE SEEN IN METRO MANILA.

IMAGE 2: GREATER MANILA AREA, 2022. URBANIZATION HAS SPREAD BOTH TO THE NORTH AND SOUTH OF METRO MANILA.

The Sustainable Neighborhood

According to UN-Habitat, a sustainable neighborhood is characterized by three key features: compactness, integration, and connectivity. Consequently, effective neighborhood design should address crucial aspects such as mobility, density, land-use, and community.

One of the frameworks for identifying, implementing, and measuring green building and neighborhood design, construction, operations, and maintenance is LEED for Neighborhood Development (ND). It relies on quantifiable indicators of sustainable design, including energy consumption, water use, and the content of recycled materials. Additionally, LEED ND takes into account factors such as location, connectivity, walkability, and density. Designed for larger-scale developments, LEED ND presents an ideal framework for addressing sustainability at the master site level.

The impetus behind the development of the Leadership in Energy and Environmental Design (LEED) rating systems was the recognition of the problems posed by urban sprawl, combined with the awareness that the design and construction industry already possesses the expertise, tools, and technology to transform buildings and neighborhoods and contribute significantly towards a sustainable planet. Considering the patterns and trends of urban growth, neighborhoods emerge as the fundamental units of urban change and innovation.

ARCADIS PROJECT FEATURE

Sevina Park, Laguna

The 8-hectare mixed-use development by Arthaland Corporation is the first community in the Philippines to receive Platinum certification under the LEED ND rating system.

Primarily focused on residential components, Sevina Park includes one hundred and eight (108) townhouses and an existing dormitory to accommodate a nearby university. The master development also features a residential block consisting of apartment buildings, as well as a commercial block comprising of retail and mixed-use buildings.

Walkability

A distinguishing feature of Sevina Park is its walkable street design. Pedestrian and cyclist-friendly streetscapes play a pivotal role in improving public health and safety. On average, residents of walkable neighborhoods weigh 6-10 pounds less compared to those living in sprawling neighborhoods. Walking or cycling serves as an eco-friendly transportation option with zero CO2 emissions. Additionally, walkable cities tend to exhibit higher levels of arts organizations, creativity, and civic engagement. LEED ND outlines several requirements that projects must meet, including street and sidewalk widths, accessibility, user comfort, proximity to building entrances, and the incorporation of tree-lined streetscapes.

Energy Efficiency

Sevina Park has set a target of 20% energy use reduction from a baseline for all new multi-storey residential buildings, 30% energy reduction due to efficient lighting infrastructure, and 20% of electricity to be offset by renewable sources.

Water Efficiency

Both indoor and outdoor water were designed to be efficient through having native and adaptive plants as landscape and indicating low flow and low flush fixtures. Apart from that, they also provided a rainwater management system which would help the community reduce its runoff volume, reducing the risk of flooding.

Rapid urbanization, has led cities to be recognized as both the cause and catalyst for a shift towards a more sustainable future. Although LEED-ND was not initially designed as a one-size-fits-all policy, it has emerged as an effective framework for addressing urban sustainability and public health concerns, while assisting planners in assessing the viability of implementing sustainable practices at the neighborhood level. Unlike other LEED rating systems that primarily focus on green building practices, LEED-ND is groundbreaking in evaluating not only individual buildings but also the collective neighborhood of buildings, with special emphasis on site selection and design. By encompassing buildings, infrastructure, and the surrounding environment and landscape, LEED-ND offers a comprehensive evaluation criteria for neighborhoods.

According to Rick Fedrizzi, CEO of the USGBC (Congress for the New Urbanism, 2007), the future of sustainability and sustainable design involves thinking beyond individual buildings and addressing critical aspects such as density, infrastructure, and promoting a healthy lifestyle within neighborhoods. In this context, LEED-ND becomes a valuable tool that planners should consider when evaluating development applications. It allows for a holistic approach to sustainable development, taking into account not only the individual buildings but also their inte gration within the larger neighborhood context.

https://arthaland.com/properties/sevina-park

Bibliography

http://earthengine.google.com/timelapse

https://www.walkscore.com/walkable-neighborhoods.shtml

UN (United Nations) Habitat, A New Strategy of Sustainable Neighborhood Planning

https://unhabitat.org/sites/default/files/2019/10/64._5_principles_of_neighbourhood_design.pdf

U.S. Green Building Council, LEED Reference Guide for Neighborhood Development v4

About Arcadis

Arcadis is the leading global Design & Consultancy firm for natural and built assets. Applying our deep market sector insights and collective design, consultancy, engineering, project and management services we work in partnership with our clients to deliver exceptional and sustainable outcomes throughout the lifecycle of their natural and built assets. We are 36,000 people, active in over 70 countries that generate €4 billion in revenues. We support UN-Habitat with knowledge and expertise to improve the quality of life in rapidly growing cities around the world.

www.arcadis.com

Contact us

Darneil V. Perez

Country Director

E darneil.perez@arcadis.com

Katherine Ann Resurreccion

Service Line Director,
Environmental Sustainability

E katherineann.resurreccion@arcadis.com

Corinne Malolos

Principal Consultant,
Sustainable Buildings and Communities

E corinne.malolos@arcadis.com

Arcadis. Improving quality of life