



SUSTAINABLE MIXED-USE DEVELOPMENT: A CASE STUDY OF LIFE HUB; DANING NEIGHBORHOOD, ZHABEI DISTRICT, SHANGHAI, CHINA.

¹Mbata, Raymond I. ²Mr. Anthony, Enwin D.

Author Details

Author: Mbata, Raymond is an academic staff of the Rivers state University and also pursuing a Post-Graduate course in Architecture at Rivers State University, Department of Architecture. Port-Harcourt. Nigeria. PH:+234-7063663115. E-mail: raymbata@gmail.com
Co-Author: Mr. Anthony, Enwin D. is a lecturer at the Rivers state university, Port-Harcourt, Rivers state. Nigeria. PH:+2348022234813
E-mail: dnblimited@yahoo.com

Keywords

Mixed-use development, mixed-use facility, sustainable development, Life Hub, Daning Neighbourhood, TOD.

Abstract

Urbanization is the new trend in human migration and population growth. In the quest for good jobs and economic growth, sustainable cities and communities and ongoing implementation of the sustainable development goals (SDG) 2030, building professionals, government, key decision-makers and stakeholders are sensibly adapting to the rapid growth in urbanization. Urban growth expansion also comes with its challenges which could result in over-concentration, overconsumption and unhealthy competitions etc. New policies, frameworks and strategies are needed for mitigation and total prevention. This research paper presents a new model for the approach of mixed-used development. It reveals how a mixed-used development strategy can be used to reshape a city and attain sustainable urbanization. The Authors did a study of Daning neighbourhood, china which could serve as case study for modern day mixed-used development. This paper further entails the history and importance of mixed-use facility and development for a successful urban migration, revitalization and redevelopment.

1.0 Introduction

Rapid population increase, pollution and poverty are the major problems associated with urbanization today globally which requires low-cost affordable solutions. There is a rapid migration of people to cities seeking better opportunities for various reasons. Urbanization provides a tremendous opportunity and is one of the most important tools to guide the sustainable development agenda forward; however, if unplanned and poorly managed, urbanization also has the potential to exacerbate many of the problems that it claims to solve. Poorly planned or unplanned urbanization has resulted in economic disorder, civil unrest, congestion and environmental degradation, as well as increases in slums and sprawl (UN-Habitat 2016).

Disinfection of central areas within the cities causes extreme traffic congestion, air pollution and climate change consideration. The solution for such issues should begin with a 'holistic community development approach' which addresses the way of living (lifestyle) of the people, the nature of work and businesses(occupation) and creating an experience that is not exodus to nature (against nature).

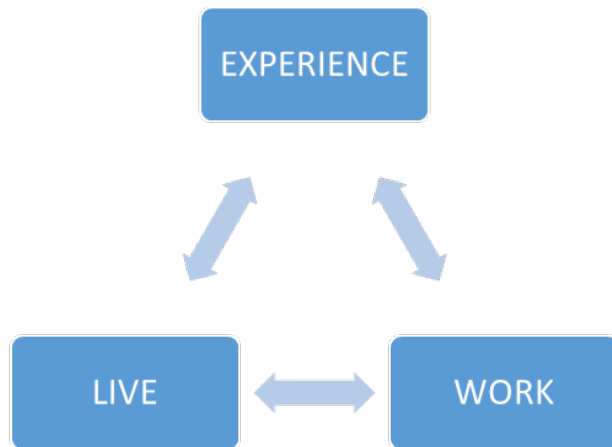


Figure 1.1 The new mixed-use development concept.

The new mixed-use concept is both theoretically and practically in line with the new urban development agenda as explained in sub-section 1.1 below. In the sense of mixed-use planning, it is a type of urban development or zoning that harmonizes residential, commercial, cultural, institutional, or entertainment uses into one space which could vary based on the scope and size of a given project; where those functions are to some degree physically and functionally integrated and provides pedestrian connections.

Mixed land use helps in promoting active transport between different activities by locating origins and destinations closer to each other. This reduces travel distances and enables 'Linked-trips' where one trip can be used to undertake many activities by various persons at a time; using the same amount of energy needed for transit. The range of activities in each mixed-use development also encourages social interaction as people fulfil more of their needs in their locality.

A mixed-use neighbourhood/community should incorporate a diverse mix of land uses such as dwellings type of different income levels, home businesses, healthcare facilities, educational facilities, public open areas that promote walking or cycling within the neighbourhood and overall, an environment where users can have a reflection of their history and undiluted experience with nature.

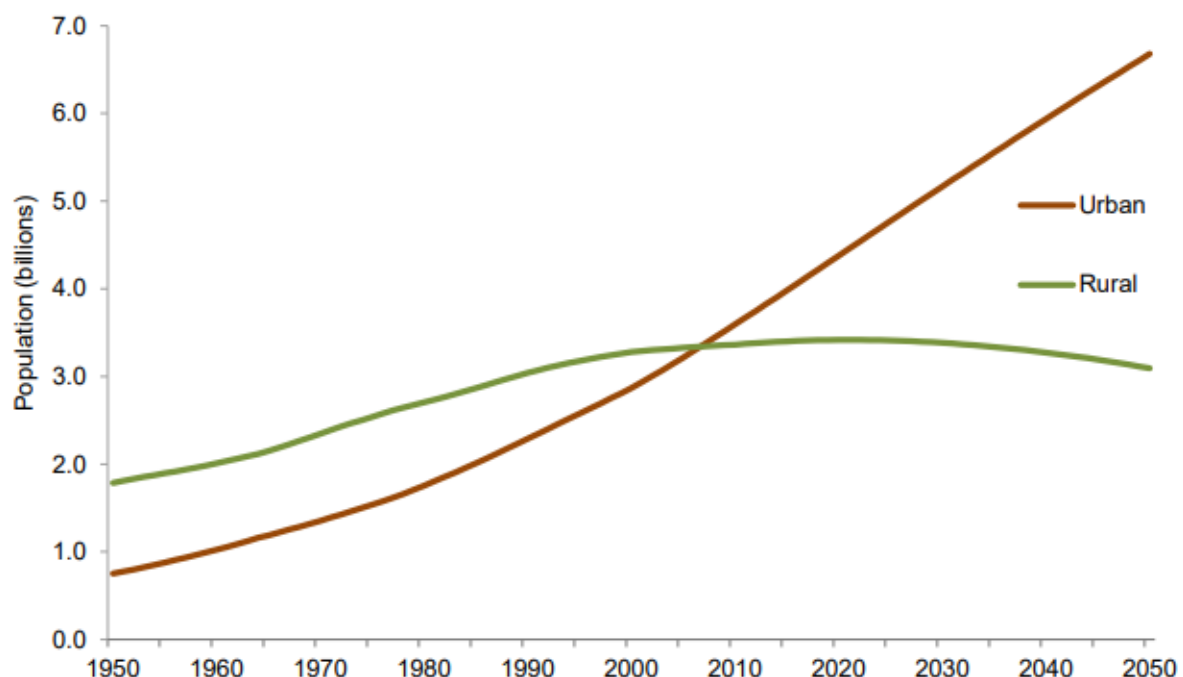


Figure 1.2 Urban and rural populations of the world, 1950-2050 source: (United Nations, Department of Economic and Social Affairs, Population Division, 2019)

The world's population has gone through a process of rapid urbanization since 1950. In 1950, more than two thirds (70 per cent) of people worldwide lived in rural settlements. In 2007, for the first time in history, the global urban population exceeded the global rural population, and since then the number of the world's city

dwellers has continued to grow faster than the rural population (figure 1.2). Towards the end of the Agenda for Sustainable Development in 2030, the share of the world's population living in urban areas is expected to reach 60 per cent. It is projected that by 2050, the world will be more than two thirds urban (68 per cent), roughly the reverse of the global rural-urban population distribution of the mid-twentieth century.

'Sustainable Mixed-use development begins and progresses with good urban planning system and policies.'
(University of Delaware, 2019)

1.1 The new Urban Agenda

New data (UN-Habitat 2020) reveals there are nearly 2,000 metropolitan areas globally where a third of the world's population now live. UNHabitat predicts that by 2035, the majority of the world's population will live in metropolitan areas. UN-Habitat data shows there are currently 1,934 metropolitan areas, also known as metropolises, with more than 300,000 inhabitants. These are home to around 60 percent of the world's urban population and a third of the global population. The majority (1,038) are in the Asia Pacific region with 444 in China and 191 in India compared to 55 in Nigeria, 61 in Brazil, 144 in the USA and 67 in Russia. The New Urban Agenda was adopted at Habitat III in Quito, Ecuador, on 20 October 2016. It follows the previous Habitat Agenda, which was adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat II) in 1996 and defined "lines of action on various levels regarding the range of housing and human settlements issues". The New Urban Agenda was endorsed by the United Nations General Assembly at its sixty-eighth plenary meeting of the seventy-first session on 23 December 2016 and therefore represents a shared vision for a better and more sustainable future. The New Urban Agenda works as an accelerator of the Sustainable Development Goals (SDGs), particularly SDG 11– Make cities and human settlements inclusive, safe, resilient and sustainable – to provide a comprehensive framework to guide and track urbanization around the globe.

The New Urban Agenda, therefore, comes at a very critical and opportune juncture in global history. While the challenges that cities, towns and villages face in different countries are varied, the New Urban Agenda is designed to be universally applicable. It presents a long-term vision and sets out priorities and actions, in addition to providing tools that can be applied at the regional, national, subnational and local levels, allowing governments and other relevant stakeholders to meet context-specific urban needs and challenges. While the whole world is urbanizing, the nature and characteristics of urbanization in each region are different.



Figure 1.3 The four core dimensions/guild of the new urban agenda Adapted from (UN-Habitat, 2016)

The new urban agenda is universal in scope. They form a sustainable lens through which the whole agenda of urban development and its sections will be viewed and accessed. Figure 1.2 shows four key dimensions of sustainability across sector scales involved in urban development. This dimensions collectively ensure the sustainability of future urban planning and development which are social sustainability, economic sustainability, environmental sustainability and spacial sustainability respectively. Figure 1.4 further indicates the means through which these four key dimensions can be effectively implanted.



Figure 1.4 means of implementation of the new urban agenda. Adapted from: (UN-Habitat, 2016)

Understanding the linkages between these different means of implementation allows governments and relevant civil society stakeholders to implement targeted actions to achieve sustainable urbanization. The New Urban Agenda is intended as a resource for different actors in different levels of government, ranging from central to local, and for civil society organizations, the private sector and all who reside in urban spaces of the world. (UN-Habitat, 2016).

The goals of sustainable urbanization require that:

- Greenhouse gas emissions are reduced and serious climate change mitigation and adaptation actions are implemented;
- Urban sprawl is minimized and more compact towns and cities served by public transport are developed;
- Non-renewable resources are sensibly used and conserved;
- Renewable resources are not depleted;
- The energy used and the waste produced per unit of output or consumption is reduced;
- The waste produced is recycled or disposed of in ways that do not damage the wider environment; and
- The ecological footprint of towns and cities is reduced.

‘Only by dealing with urbanization within regional, national and even international planning and policy frameworks can these requirements be met’.

1.2 Aim

This research paper aims to evaluate the concept of mixed-use development as a strategy for sustainable urbanization.

1.3 Objectives

The following are the objectives for this research paper.

- To study mixed-use development as a concept
- To introduce a new approach for a sustainable mixed-use development project.
- To study the state of the art of how architecture contributes to mixed-use development.

1.4 Research Questions

Given the objectives of this study, the following pertinent questions are asked as follows:

- How can we adopt mixed-use development concept to create a productive environment through public spaces that enhance physical interaction, visual interaction and reduce isolation?
- What and why transit-oriented development (TOD)?
- How can one reverse the effect of climate change through mixed land use development policy?

2.0 Literature review

A mixed-use was the norm before the development of modern zoning and land-use practices such as mixed-use commercial and residential areas thrived into the twentieth century, often at intersections and transit stops. Mixed-use development needs a minimum of three revenue-producing uses. Table 2.0 shows the primary users in mixed-use developments project and their synergy.

Table 2.1 primary use cases of mixed-use developments.

PRIMARY USE	Office	Residential	Hotel	Retail	Recreation/cultural
Office		**	*****	****	***
Residential	**		***	****	*****
Hotel	*****	*****		****	****
Retail	*****	*****	*****		****
Recreation/cultural	****	*****	*****	*****	

Legend

*-Very weak or no synergy, **-weak synergy, ***-moderate synergy, ****-strong synergy, *****-very strong synergy.

Mixed-use development as the name suggests, it is a combination of multiple, distinct yet symbolic functions i.e. residential, commercial, cultural, institutional, industrial, etc. that are placed in physical proximity to each other. The idea stems out of the concept that doing this would reduce the load transport puts on land, infrastructure and resources. Mixed-use is one of the ten principles of Smart Growth, a planning strategy that seeks to foster community design and development that serves the economy, community, public health, and the environment. Projects can be mixed horizontally or vertically. Horizontal mixing includes older downtowns where all kinds of land use occur within close proximity. The Urban Land Institute's Mixed-Use Development Handbook characterizes mixed-use development as one that

- provides three or more significant revenue-producing uses (such as retail/entertainment, office, residential, hotel, and/or civic/cultural/recreation),
- fosters integration, density, and compatibility of land uses, and
- Creates a walkable community with uninterrupted pedestrian connections.

A Mixed-use is three-dimensional, pedestrian-oriented places that layer compatible land uses, public amenities, and utilities together at various scales and intensities. This variety of uses allows for people to live, work, experience and shop in one place, which then becomes a destination for people from other neighbourhoods. As defined by The Lexicon of the New Urbanism, mixed-use is multiple functions within the same building or the same general area through superimposition or within the same area through adjacency; from which many of the benefits are pedestrian activity and traffic capture.

2.1 Mixed-use development Records

The table below (Table 2.2), shows the historical records of mixed-use development from the early 1910's to the 1960s and from the late 1970s to present. It further reveals how mixed-use development has evolved over time and how they have been influenced by new policies, framework and human ever-growing needs.

Table 2.2 Mixed-use development records

TIMELINE	ACHIEVEMENT RECORDS
The 1910s-1950s	<ul style="list-style-type: none"> • Modern zoning practice assigned land uses according to function. Retail, work, living schools etc., were segregated from each other • From the 1910s, through the 1950s, integrated land uses were rare in new developments
1960's - 1970	<ul style="list-style-type: none"> • Mixed-use re-emerged as a tool for urban revitalization, often as part of large scale public/private partnerships.
The late 1970s-1980s	<ul style="list-style-type: none"> • Mixed-use developments began to be built on smaller scales than their predecessors. • They were more integrated into urban contexts, often relating to historic structures or districts
1990's and	<ul style="list-style-type: none"> • Mixed-use developments emerged as a manifestation of sustainable design, walkable

2000's	<p>urbanism and smart growth initiatives. Residential emerged as a primary use.</p> <ul style="list-style-type: none"> • They became integral components of 'transit-oriented development's (TOD's), 'traditional neighbourhood development's (TND's) and were considered an essential ingredient to the creation of 'liveable communities'
--------	--

Some of the principles of mixed-use developments are as follows:

- Allows for a more balanced mix of uses that includes offices, retail, commercial services, housing and civic uses to create economic and social vitality
- Encourages the linking of trips as well as shortening trip distances
- Promotes the development of affordable housing
- Includes amenities and attractions that cannot be included in single-purpose projects
- Energy conservation by design.

2.2 Transit-oriented development (TOD)

Transit-oriented development is a mixed-use urban development that is designed to maximize the amount of residential, business and leisure space within walking distance of public transport. These developments use a compact, village-like land use pattern that mixes residential and local-scale retail and commercial land uses at densities that are typically higher than found in conventional suburban development. TODs are similar in some respects to traditional neighbourhood developments. Higher intensity land uses are located near the transit facility, with decreasing densities as the distance from the facility increases. The proper siting of development pattern in proximity to transit systems is crucial for successful TOD projects. Commuter rail lines, bus routes, and the County's major arterial highways are good candidates for considering this design.

Transit-Oriented Development offers the following benefits:

- Reduces energy use and conserves future energy use by reducing the reliance on individual automobiles;
- Provides transportation choices for residents;
- Recognizes the direct relationship between land use and transit;
- Provides a greater ridership potential for transit;
- Assists transportation providers in targeting future services and stops;
- Reduces dependence on the automobile, particularly for the non-driving population;
- Reduces the amount of required new infrastructure, such as sewer, water and road facilities;
- Reflects early 20th Century town patterns, characteristic of Chester County's heritage and provides an alternative to conventional "sprawl" development;
- Could be paired with Transferable Development Rights programs to direct growth out of rural areas and into areas better served by infrastructure;
- Promotes opportunities for public transit services through compact development; and
- Encourages a sense of community.

Limitations

The following limitations may be associated with Transit-Oriented Development:

- The municipality must be currently served by or commit public transit services;
- TODs may require significant revisions to most municipal land use ordinances;
- Acceptance of a compact, mixed land use pattern may be difficult to achieve;
- TODs may require public infrastructures such as sewer and water;
- TODs are best implemented with a single, master, coordinated plan; and TODs
- May require inter-municipal cooperation.

3.0 The study of Life Hub; Daning neighbourhood, Zhabei District, Shanghai, China.

Life Hub @ Daning is a large-scale, retail-anchored mixed-use project in the Daning neighbourhood of Zhabei District, Shanghai, China. The construction started in October 2004. The retail and office portions were completed in June 2006, and the hotel in October 2006. The retail and office buildings opened for business in October 2006, and the hotel opened in April 2007. With total gross floor area (GFA) of about 250,000 square meters (2.7 million sq ft), of which 200,000 square meters are above ground and 50,000 square meters are below ground, the project is arguably the most successful retail-anchored mixed-use development in the northern part of Shanghai. It has transformed Daning and its surrounding areas in Zhabei District, long considered a low-income and underdeveloped neighbourhood with limited retail and entertainment amenities, into a vibrant community. With full occupancy for its retail component and consistently high occupancy for its office and hotel components, the project is highly successful both operationally and financially. The project won the

prestigious National Award for Model Community and the Cityscape Asia Real Estate Award for Best Developer in 2008.

The project consists of 15 buildings, 11 outdoor piazzas, and two kilometres (1.2 mi) of pedestrian promenades for three primary uses: retail (including food, beverage, and entertainment), four office towers with a total GFA of about 38,000 square meters (409,000 sq ft), and hotel. The project has developed into one of the most popular retail and entertainment venues in the city, attracting more than 60,000 visitors per day on weekdays and more than 100,000 per day on weekends. The project exemplifies how a well-planned and executed urban infill project can transform an entire neighbourhood.

Life Hub @ Daning is located at the junction of Daning Road and Gonghexin Road in the Zhabei District, one of the central districts in Shanghai's Puxi (west of Huangpu River). Over Gonghexin Road is the south-north elevated freeway that serves as the central axis of the city. The site is located between two stations of the city's Metro Line No. 1. Also, numerous bus lines come directly to or close to the project. Near the site are the Shanghai University, the No. 10 Municipal Hospital, and the popular Shanghai Circus World.

Before the completion of Life Hub @ Daning, the Daning area was largely a low-middle-income residential neighbourhood. But in recent years, the area has evolved into a middle-income neighbourhood with a growing number of office buildings and retail facilities. Logistics and manufacturing are the main industries of Zhabei District. Life Hub at Daning is a retail-anchored mixed-use project that includes office, hotel, cultural, and entertainment uses.



Figure 3.1 An aerial rendering of the project from the northeast. (ULI (Urban land institute), 2014)

3.1 Findings

Land uses: Retail, restaurants, entertainment, education, office, hotel, open space, parking

Site size: 55,000 square meters (592,000 sq ft)

Project address: No. 1868-2008 Gonghexin Road Zhabei District Shanghai, China 200072

Developer: Shanghai Forrester (Zhabei) Development Ltd. (a subsidiary of Chongbang Group)

Project manager: Chongbang (Shanghai) Management Consultancy Ltd. (a subsidiary of Chongbang Group) Shanghai, China.

Architect: RTKL Architectural Design Consulting (Shanghai) Co. Ltd.

Local design institute: Shanghai Institute of Architectural Design & Research Co. Ltd.

Main contractor: Shanghai No. 4 Construction Co. Ltd.

Supervisory consultant: Shanghai Jiaohao Engineering Consultation Co. Ltd.

Quantity surveyors: Shanghai First Surveying Ltd.



Figure 3.2 The site plan. The project consists of 15 buildings for office, hotel, and retail uses and 11 outdoor piazzas. (ULI (Urban land institute), 2014)

Table 3.0 Important project information. Source: (ULI (Urban land institute), 2014)

PROJECT INFORMATION

Development timeline

Site purchased	September 2003
Site possession	January 2004
Construction started	October 2004
Sales/leasing started	February 2005
Retail and office component completed	June 2006
Hotel completed	October 2006

Land use plan

	Site area (ha)	Percentage of site
Buildings	3.0	55%
Streets/surface parking	1.4	25%
Landscaping/open space	1.1	20%
Total	5.5	100%
Number of buildings	15	
Number of outdoor piazzas	11	

Gross building area

Use	Building area (sq m)	Percentage of site
Office	38,000	15.2%
Retail/commercial	105,000	44.0%
Hotel	35,000	12.0%
Above-ground parking	22,000	8.8%
Basement/underground parking	50,000	20.0%
Total GFA	250,000	100.0%

Parking information

Underground basement	900 spaces
Nine-story structure	300 spaces
Total	1,200 spaces

Hotel information

Number of guest rooms	326
Standard room size	28 sq m
Luxury room size	75 sq m
Range of room sizes	28–75 sq m
Number of floors	21
Occupancy rate (2012)	72.7%
Average daily room rate (2012)	RMB 667 per night

Office information

Gross building area	38,000 sq m
Number of buildings	4
Range of floors per building	11–16
Sold in 2006	
Currently owned by an affiliate of a leading Chinese financial institution	

Retail/commercial information

Gross building area	105,000 sq m
Number of stores	148
Occupancy rate	100%
Visitors per weekday	60,000
Visitors per weekend day	100,000
Current gross yield on cost	About 15%

Major retail tenants

RT-Mart	20,000 sq m
Sport 100	5,300 sq m
CGV Cinemas	4,000 sq m
SPA0 Fashions	3,500 sq m
Cartoony Children Center	3,000 sq m
Love KTV	2,500 sq m
C&A	2,400 sq m
Uniqlo	1,250 sq m
American Eagle Outfitters	700 sq m

4.0 Discussions

The Zhabei District Government wanted the project to help transform the Daning area and improve the overall image of the district, much as Gubei and Hongqiao Commercial Areas did for Changning District. The developer set an ambitious goal to develop the project to become an important milestone in Shanghai's urban regeneration. In terms of contents, the developer set out to create a "*symphony of city living*"—a place that offers a wide variety of modern urban living amenities for residents, workers, and visitors. And to articulate the design concept, the project's shopping and leisure environment was set in the human scale and spatial

arrangement of a traditional Shanghaiese township, with contemporary architecture and building services. The project is built on a Greenfield site. When the project was conceived in late 2003, population growth in the area was imminent, but increased market demand was not apparent. The developer decided to integrate live, work, shop, leisure, and hospitality in a single project and to build it in a single phase, thus enabling the project to capture a broad market base and create a strong market presence from its inception.

- **Master planning and building design.** The project was planned and designed to make the central piazza and the surrounding commercial facilities the focal point of the project. The tall buildings on the perimeter all have facades facing the central area. The small office/home office building has balconies that overlook the open piazza. The project adopts an open-plan concept with outdoor piazzas and pedestrian promenades—a leisurely environment intended to offer customers a welcome alternative to the hustle and bustle of downtown shopping and entertainment. The modern architectural style supplemented by the central piazza and other open spaces for events and activities.
- **Comfort and image:** Buildings around open space are set at a human scale to create a comfortable and well-proportioned environment, enhanced by trees, sculptures, parasols, and glass canopies.



Figure 4.1 The project creates a community vibrancy that did not exist before. Source: (ULI (Urban land institute), 2014)

- **Sustainability:** The developer has installed green roofs on the low-rise buildings, which helped improve the energy efficiency of these buildings as well as their aesthetics from the neighbouring high-rise hotels and offices. “Green walls” adorn many building facades, providing insulation and enhancing the project’s ecological appeal. Energy-efficient outdoor lighting is used throughout the project.
- **Microclimate:** Trees and green facades help lower ambient temperatures in the summer through shading, evaporation, and reduced heat island effect. The massing of buildings at Daning takes advantage of the prevailing south-easterly wind to create a wind tunnel effect through the main piazza, thus reducing heat and humidity in the summer.
- **Walkability:** Another notable design feature is 2 kilometres (1.24 mi) of pedestrian promenades. The developer placed a strong emphasis on making the project conducive to walking by providing (a) ample and safe sidewalks along the roads surrounding the site with minimal grade change; (b) shops with a high degree of transparency around piazzas and along streets; (c) open dining areas; (d) traffic-calming

measures along the inner street, including speed bumps, multiple curves, planted barriers, and level pedestrian crossings; and (e) well-designed night lighting. Besides, a key premise of walkability is interesting street fronts. At Daning, building facades and streetscapes engage the visitor in a visual dialogue.

- **Placemaking and community building:** Placemaking helps communities enhance their unique sense of place, promote healthy lifestyles, improve contact among diverse populations, encourage civic engagement, and boost civic pride. In short, placemaking is a powerful tool in community building. Life Hub at Daning exemplifies all of these.
- **Sociability:** Sidewalk cafés and alfresco dining provide numerous venues for socializing and people watching, supplemented by the central piazza and other open spaces for events and activities.
- **Business model:** The business model for the project emphasized a visionary development strategy, mixed-use synergy, and ample equity financing.
- **Development strategy:** With a clear vision of the project's broader role in the economic revitalization of the district and an understanding of underlying demographic trends, the developer pursued a strategy that combined lifestyle design, savvy merchandising emphasizing popular culture, branding, high-tech, placemaking, community building, and commercial success.
- **Planning and design:** The creation of an attractive public realm, together with improvements to roads and adequate parking, was critical to the success of the project.
- **Mixed-use synergy:** The mixed-use nature of the project significantly contributed to the success of its different parts. For example, the retail and food and beverage tenants benefited from some 2,000 white-collar workers in the office towers and their guests, especially during the relatively slow morning and lunch hours on weekdays. In turn, the office buildings benefited from the convenience of having high-quality retail, food and beverage, and entertainment amenities, as well as a relatively high-end hotel with ample conference and banquet facilities.
- **A village-like setting with a large public space:** Rather than opting for a more typical boxlike mall structure with office and hotel towers on top, the developer chose a design that contained a combination of 15 low-rise and high-rise buildings with ample outdoor space for piazzas and streets in between. The large open piazza and pedestrian-friendly nature of the project have enabled the project to host public events and become an important community centre.
- **Open piazza and focus on the inner area of the project:** The developer decided to make the inner core of the project the main focus, instead of focusing along the perimeter streets. This decision led to various design decisions, including the incorporation of an open piazza in the middle of the project that would serve as the main outdoor event area, use of low-rise buildings, and inward orientation of the tall buildings along the perimeter. The design and active property management have enabled the project to become a major public space in the northern area of Shanghai.



Figure 4.2 The central piazza at night. The central piazza serves as the main event area, and the smaller piazzas provide space for open dining and smaller events. (ULI (Urban land institute), 2014)

5.0 Recommendations and Conclusion

Sustainability is a process that continues to adjust to changing realities. The new Urban Agenda as shown in figure 1.3 and the means of implementations as shown in figure 1.4, presents a universal scope that forms a sustainable lens through which the whole agenda of urban development and its sections will be viewed and accessed. As cities begin to grow, there is the need to make human settlements inclusive, safe, resilient and sustainable to provide a comprehensive framework to guild and track urbanization around the globe as presented to us by SDG-11. Mixed-use development as in the case of Daning neighbourhood as exhaustively discussed in this research work as a case study, has proven to be a model of urban growth sustainable strategy. A ‘holistic community development approach’ which addresses the way of living (lifestyle) of the people, the nature of work and businesses(occupation) and creating an experience that is not exodus to nature. To better achieve this, table 2.1 indicates the primary use cases of mixed-use development and the extent of synergy.

References

ULI (Urban land institute). (2014, August). *Life Hub @ Daning*. Retrieved from ULI Case studies:

http://casestudies.uli.org/wp-content/uploads/2016/01/LifeHub@Daning_CaseStudy_EN.pdf

UN-Habitat. (2016). *The New Urban Agenda*. Quito, Ecuador: United Nations Human Settlements Programme (UN-Habitat) 2020.

United Nations, Department of Economic and Social Affairs, Population Division. (2019). *World Urbanization Prospects 2018: Highlights (ST/ESA/SER.A/421)*. New York, USA: United Nations.

University of Delaware. (2019, January). *What is Mixed-Use Development?* Retrieved from University of Delaware web site: <https://www.completecommunitiesde.org/planning/landuse/what-is-mixed-use-development/>