Towards People-Centered Street Designing: Design Proposal for Piliyandala Town Center

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Abstract

People (user)-centered street design and walkability are essential requirements for creating thriving, inclusive cities that prioritize local vibrance and comfort of users. Drawing inspiration from global best practices and urban design principles, the project aims to enhance walkability, promote social interaction, support the local economy, and revitalize land uses. This article presents a comprehensive design proposal for transforming the Piliyandala town center into a vibrant pedestrian street, addressing pressing issues such as a lack of sense of place and limited pedestrian space. Further, the discussion of the participatory was adapted in formulating the project proposal. The paper could be a useful resource to inspire local-level planners, particularly in small towns, on how to enhance the quality and integrate walkability with other modes of mobility.

Keywords: Pedestrian-friendly Urban Design, Piliyandala Town Center, Pedestrian Street, Community Engagement, Sustainable Urban Development

1. Importance of Pedestrianizing Streets

Current street planning and design practices, particularly focusing on pedestrian needs, have seen significant advancements and growing attention worldwide. The shift towards creating pedestrian-friendly environments reflects an understanding of the importance of walkability in urban areas. Initiatives such as “Complete Streets” in the United States (National Complete Streets Coalition, n.d.) and the “20-Minute City” concept in Europe (Habitat III, 2016) exemplify the commitment to prioritizing pedestrian well-being. A study by Ewing and Handy (2009) underscores the positive impact of pedestrian-oriented streets on public health and urban vitality, citing reduced obesity rates and increased social interaction.

Nevertheless, several challenges persist in the planning and design of pedestrian-friendly streets. One of the central issues is integrating pedestrian infrastructure into existing urban landscapes, often constrained by limited space and competing demands. This results in streets that may lack proper sidewalks, crosswalks, or amenities for pedestrians, making walking less appealing and sometimes unsafe. A case in point is the struggle many major cities face in accommodating the surge in pedestrian traffic without adequate infrastructure and safety measures.

Furthermore, accessibility and inclusivity for pedestrians with disabilities are critical concerns. The World Health Organization (WHO) estimates that over a billion people worldwide live with some form of disability, making it imperative to ensure streets are universally accessible (World Health Organization, 2011). Insufficient ramps, tactile paving, and signage can pose significant barriers to mobility, hindering

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the full participation of disabled individuals in urban life.

However, several issues persist in street planning and designing for pedestrians in Sri Lanka. Insufficient investment in pedestrian infrastructure, especially in smaller towns and rural areas, often results in inadequate sidewalks, pedestrian crossings, and lighting (Silva et al., 2020). Traffic congestion and erratic driving behaviors pose a significant risk to pedestrians in many urban areas, making road safety a critical concern (Perera et al., 2019). There's also a lack of universally accessible facilities for people with disabilities, limiting their mobility in urban settings (Silva et al., 2020).

While there is a growing commitment to creating pedestrian-friendly streets, challenges such as limited space, safety concerns, and inclusivity issues persist. Achieving truly pedestrian-centric street planning and design requires innovative solutions and a continued emphasis on the importance of walkability in creating healthier, more sustainable, and socially inclusive cities.

2. Application of pedestrianization across the globe

Designing people-centered streets is critical to creating vibrant and livable urban environments. Let's review five case studies that highlight best practices in street design, drawing inspiration from urban design principles outlined in “Great Streets” by Allan Jacobs and “Life Between Buildings” by Jan Gehl. These case studies were chosen based on their exemplification of people-centric street design and their potential to inspire similar projects worldwide. The following case studies showcase innovative approaches to urban design that prioritize pedestrian needs and contribute to creating vibrant, livable cities. Each example represents a distinct strategy for repurposing urban spaces, promoting active lifestyles, and fostering community engagement. From the transformation of disused infrastructure like the High Line in New York City to the weekly street closure initiative of Ciclovia in Bogotá, these cases demonstrate the diverse ways in which cities around the world are reimagining their urban landscapes to prioritize people over cars. These case studies offer valuable insights into the principles and practices that underpin successful pedestrian-friendly urban design.

The High Line, New York City, USA: The High Line is a remarkable example of repurposing urban infrastructure for the benefit of the public. This elevated linear park was once a disused railway track and has been transformed into a lush green space with pedestrian pathways, seating areas, and cultural attractions. By preserving historical elements and creating a unique, people-friendly environment, the High Line demonstrates how urban design can reconnect people with their city's history while enhancing their quality of life.

Figure 1. The High Line, New York City, USA
Source. www.thehighline.org

Ciclovia, Bogotá, Colombia: Inspired by Jan Gehl's principles of prioritizing people over cars, Ciclovia in Bogotá is a weekly event where major streets are closed to vehicles, allowing residents to enjoy the streets for walking, cycling, and socializing. This initiative promotes physical activity, community interaction, and healthier living while reducing air pollution and congestion.

Figure 2. Ciclovia, Bogotá, Colombia
Source. www.atlasobscura.com
Seoul’s Cheonggyecheon Stream, South Korea: The restoration of Cheonggyecheon Stream transformed a neglected and polluted waterway into a beautiful urban oasis. By focusing on creating a pleasant environment for pedestrians and cyclists, this project improved air quality, reduced traffic congestion, and reconnected neighborhoods, aligning with Alan Jacobs’ idea of “great streets” that prioritize people’s well-being.

Váci Street, Budapest, Hungary: Váci Street exemplifies how a well-designed pedestrian zone can revitalize a city center. By restricting vehicular traffic and enhancing the pedestrian experience with comfortable seating, attractive storefronts, and public art, the street has become a bustling hub for both residents and tourists. This case showcases the economic and social benefits of creating inviting, people-centric streets.

Janpath, Delhi, India: Janpath in Delhi transformed to prioritize pedestrians and cyclists by expanding sidewalks, adding shaded areas, and implementing traffic calming measures. This case study aligns with Gehl’s principles of providing comfortable spaces for people to linger, socialize, and enjoy public life. The redesign not only made the street more pleasant but also led to increased retail and recreational activity.

In all these case studies, there are common elements that contribute to their success:

Public Engagement: Gehl (2010) emphasizes the significance of involving the community in the planning process to ensure that streets reflect the needs and desires of residents and businesses. Similarly, Jacobs (1961) highlights the role of public participation in creating vibrant urban spaces where people feel a sense of ownership and belonging.

Multi-Functionality: Gehl (2011) argues that successful streets should serve as more than just thoroughfares for transportation; they should also provide spaces for leisure, commerce, and cultural activities. This sentiment is echoed by Jacobs (1992), who emphasizes the importance of streets as social and economic hubs that accommodate a variety of functions.

Safety: Prioritizing safety for pedestrians and cyclists is a recurring theme in urban planning literature. Ewing and Handy (2009) stress the importance of implementing traffic calming measures and well-marked crosswalks to enhance pedestrian safety. Similarly, Jacobs (1961) advocates for thoughtful urban planning that prioritizes the safety and well-being of all street users.

Comfort and Aesthetics: Gehl (2010) emphasizes the importance of providing amenities such as seating, shade, and greenery to create inviting and comfortable urban spaces. This idea is supported by Jacobs (1992), who argues that attractive streetscapes and public art can enhance the
overall appeal of a street, encouraging people to spend time there.

Designing people-centered streets involves more than just accommodating vehicles; it's about creating spaces that prioritize the well-being and experiences of people. The selected case studies illustrate how these principles have been successfully applied in different contexts, and they can serve as inspiration for urban planners and designers seeking to make their cities more livable and vibrant.

3. Introduction to the Piliyandala Town Center

3.1. Study Area

Piliyandala, a prominent Colombo suburb in the Western Province of Sri Lanka, has experienced significant urban development and demographic changes, making it a noteworthy subject for comprehensive analysis. With its strategic location just 18 kilometers from Colombo and its proximity to towns like Moratuwa, Maharagama, Kottawa, Kesbewa, and Horana, Piliyandala has evolved into a thriving community with a population exceeding 10,000 residents. According to Lanka Business Online (2018), it ranks second in residential demand within the Colombo district, reflecting its growing importance as a residential hub.

Piliyandala prides itself on its high walkability score, as indicated by the walkability map (See Figure 8). This suggests that a significant portion of daily activities can be conveniently accomplished on foot. The town's accessible and pedestrian-friendly structure offers a quality of life that is conducive to both residents and visitors.

Over the years, Piliyandala has undergone significant changes in its land use,
particularly in its town center. In 2014, the construction of the bypass road was initiated to address traffic congestion issues along the Colombo-Horana Road. This marked a significant development in the town's transportation infrastructure. Subsequently, in 2018, the UDA relocated the bus stand closer to the bypass road, further reshaping the dynamics of the area. The town center of Piliyandala now accommodates a major public transportation terminal and serves as a hub for commercial activities, making it one of the busiest areas within the Kesbewa DS Division.

Piliyandala transportation network is well-established, connecting it to Colombo and Horana through the 120-bus line and the recently introduced “Piliyandala Bypass Road”. These transportation enhancements have not only improved mobility but have also reshaped the town centre. The construction of the bypass road alleviated traffic congestion, and the relocation of the bus stand near the bypass road transformed the area into a bustling transportation terminal and a commercial hub.

Temporal analysis reveals distinct patterns of human activity in the Piliyandala town center, emphasizing the significance of recognizing these patterns for effective urban planning. The presence of educational institutions, metro-bound commuters, street vendors, and market activities at various times of the day creates a dynamic character within the town center.

However, these transformative changes have given rise to pressing issues that demand immediate attention.
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3.2. Addressing the Spatial Constraints for Pedestrians in Piliyandala Town Center

1. Lack of sense of place:

Piliyandala town center suffers from a lack of sense of place and identity due to the coexistence of modern developments with incompatible styles, poorly maintained buildings, and underutilized spaces. Safety and security concerns, limited pedestrian pathways, and a lack of greenery and visual and sensory enhancements further contribute to its unattractiveness. Diversifying the range of activities along thoroughfares and creating accessible public spaces can significantly enhance the area's character and appeal.

2. Limited Space for Pedestrians:

Despite high pedestrian flow during peak hours (see Figure 9), the town center lacks sufficient space for pedestrians. Pedestrians are often forced to walk on the road, leading to safety risks. Addressing issues related to pedestrian pathways, shading, visibility of trees, and sensory experiences is crucial to improving the overall quality of pedestrian spaces. Expanding the public realm of the city center to accommodate the flow of pedestrians between key facilities is imperative.

Piliyandala presents an intriguing urban landscape with accessibility, walkability, land use, and temporal activity patterns worthy of in-depth examination for future growth and enhancement. Urgent reorganization of public transport facilities and commercial activities is necessary to address the challenges of character and limited pedestrian space. By revitalizing the town's aesthetics, diversifying activities, and expanding pedestrian-friendly areas, Piliyandala can realize its full potential as a vibrant and dynamic urban center that meets the needs of its residents and visitors.

Figure 14. Requirements of a Great Street

3.3. Transformative Future Development Scenarios for Piliyandala

As per the proposed development plan by the Urban Development Authority (UDA), there are plans to relocate the market to a new location adjacent to the bus stand in Piliyandala. Additionally, there will be a mixed-use development project near the bus stand area. Consequently, the Piliyandala Bus Stand area is poised to transform into a highly urbanized 15-minute urban core, while the other sub-centers within the town will remain largely unchanged.

Figure 15. Proposed developments by UDA in Piliyandala
4. Reimagining Streets as Places: From Transit Routes to Community Streets

4.1. Design Proposal People-Centered Street Design

In line with the future scenarios in the UDA development plan, the Piliyandala Bus Stand area is set to evolve into a highly urbanized 15-minute urban core, prioritizing pedestrian-friendly walkable streets. The central focus of this development plan is the enhancement of the public realm within the city center. This involves creating generous space for uninterrupted pedestrian flow, facilitating easy access between key urban amenities such as the Bus stand, Market, Hospital, and schools, and ensuring inclusive accessibility for various user groups.

The target groups for this project encompass residents in Piliyandala, neighboring residents, school children, teaching staff, parents, daily commuters, hospital visitors and staff, the business community, and street vendors. Recognizing the universal importance of pedestrian spaces, the design objective revolves around providing safe and unobstructed pathways to promote social interaction and enhance the street character in Piliyandala, emphasizing the importance of pedestrian activity in shaping vibrant and inclusive communities (Whyte, 1980).

Incorporating principles from urban visionaries like Jane Jacobs and Jan Gehl, the project acknowledges that streets are the lifeblood of a city, with walking as a fundamental component of urban social life. The focus on improved walkability and pedestrian infrastructure aims to boost mobility, enhance shopping experiences, reduce accidents, and minimize pollution. The project includes redesigning Piliyandala-Maharagama Road to prevent disruptions to the proposed pedestrian street and transforming Rev. Saranapala Mawatha into a pedestrian-friendly space (See Figure16). Through community engagement and the concentration of urban activities, the endeavor seeks to foster a vibrant community with a thriving economy, promoting a stronger sense of place and belonging among Piliyandala's residents.

The proposed pedestrian street is approximately 500 meters in length and serves as a direct connection between Colombo-Horana Road and Wewa Kumbura Road. It offers convenient access to the bus station, the proposed market, the hospital, and the junior school.

Figure 16. Proposed Piliyandala- Maharagama Road extension
Source. By Author

The proposed pedestrian street is approximately 500 meters in length and serves as a direct connection between Colombo-Horana Road and Wewa Kumbura Road. It offers convenient access to the bus station, the proposed market, the hospital, and the junior school.

Figure 17. Rev. Saranapala Mawatha proposed as a pedestrian street
Several key design considerations have been integrated into this pedestrian street project.

1. Facilitating Social Interaction:

This pedestrian street is designed as a public space that accommodates a wide range of activities while ensuring visibility for all users. People can gather alongside building facades, under porticoes, in niches, and next to columns, promoting interaction and social engagement.

2. Supporting Local Businesses:

The addition of parklets on either side of the street creates opportunities for businesses to extend into the street, enhancing the vibrancy of the area and contributing to the local economy. Restaurants, for instance, can utilize sidewalk chalk, sandwich boards, or street games to attract potential customers. This public street promotes and encourages visitors to explore and patronize local businesses that might go unnoticed while driving by.

3. Event Space:

The street is conceived as an event space suitable for public gatherings, including theatre and entertainment activities. Thoughtful arrangements of buildings and visual effects contribute to the aesthetic appeal and create a distinct sense of place, encouraging people to gather and participate in events.

4. Green Spaces for Shade and Comfort:

A network of green walkways, alternate streets, and small squares provides shaded and visually appealing areas, reducing the perceived walking distance. Greenery along the streetscape is essential in Piliyandala for pedestrians. It is associated with improved physical, mental, and social well-being. It also offers shade, reduces heat, mitigates air pollution, and protects against harmful UV radiation.

5. Revitalization of Land Uses:

The pedestrian street project aims to revitalize land uses within the designated zone. Initiatives such as public art installations, benches, building street seats, parklets, special events, concerts, and creative lighting displays will infuse diversity and vibrancy into the street, making it a dynamic and engaging space. The pedestrian street project represents a revival of public spaces, in line with the global sidewalk café culture trend, aiming to create a versatile hub that encourages social interaction, supports local businesses, and fosters community engagement. This initiative incorporates green elements, efficient lighting, educational features, and diverse activities to establish an inviting and lively environment.
4.2. **Community-Led Urban Revitalization: A Collaborative Approach to Tactical Urbanism.**

To bring this vision to life, the Urban Development Authority (UDA) will spearhead this tactical urbanism project, collaborating with a broad spectrum of stakeholders including shop owners, local communities, volunteer groups, businesses, NGOs, and community organizations in Piliyandala and its surroundings. The UDA plans to establish a “Pedestrian Street Development Fund” to raise necessary funds, with contributions from stakeholders through crowdfunding.

Various stakeholders, such as shop owners, business communities, residents, and community organizations, will participate in crowdfunding efforts. Expect to develop this pedestrian street as a tactical urbanism project.

The project will involve participatory planning workshops to engage various groups like business communities, residents, commuters, schoolchildren, and community organizations in the design process. Shop owners can play a role by installing street furniture and parklets, while schoolchildren and volunteers can enhance the aesthetics with public art and tree-planting campaigns. Fundraising programs will be implemented in collaboration with all stakeholders.

For the data collection process in the initial stage of the urban design studio,
developing a plan for Piliyandala as a group, we conducted a Community Action Plan (CAP) workshop to gather ideas from residents, daily commuters, and visitors in Piliyandala. The objective was to collaboratively develop a plan to create a place that meets the needs and desires of the community. Through facilitated discussions and interactive exercises, participants shared their insights, suggestions, and aspirations for enhancing the Piliyandala area. The workshop aimed to foster community engagement, promote inclusivity, and empower stakeholders to contribute to the shaping of their neighborhood.

To cover project costs, revenue is expected to be generated from street food stalls, food trucks, street vendors, and entertainment activities like musical shows, outdoor dramas, exhibitions, food festivals, and carnivals within the street. The maintenance of the area will be primarily funded through a "common area fee" paid by businesses located along the street.

5. Revitalizing Piliyandala: People-Centered Street Design for Enhanced Walkability and Street Character

Before the relocation of the bus stand, Piliyandala epitomized the concept of an ideal 15-minute city. It was a bustling suburb situated just 18 kilometers from Colombo, strategically positioned to offer easy access to essential services within a 400-meter radius. This convenient concentration of amenities ensured that residents could meet their daily needs without the requirement for long journeys, contributing to a high quality of life. However, with the initiation of development projects such as the construction of the bypass road in 2014 and the subsequent relocation of the bus stand closer to the bypass road in 2018, significant changes occurred in the Piliyandala town center. While these initiatives aimed to address traffic congestion and improve transportation infrastructure, they also altered the dynamics of the area, particularly in terms of walkability and street character. The relocation of the bus stand to a new location adjacent to the bypass road transformed the town center into a bustling transportation terminal and commercial hub. While this relocation may have improved accessibility to public transportation, it also introduced challenges to the walkability of the area. The concentration of transportation activities in the heart of the town may have led to increased pedestrian traffic, potentially impacting the pedestrian experience and overall attractiveness of the streetscape making it essential to ensure that pedestrian pathways are spacious, well-designed, and safe for users.
Our proposal for people-centered street design in Piliyandala addresses the challenges posed by the relocation of the bus stand and aims to enhance walkability and street character in the town center. By prioritizing the needs of pedestrians and promoting social interaction, our design focuses on creating a vibrant and inclusive environment ensuring that Piliyandala remains an inviting and pedestrian-friendly environment for residents and visitors. The proposed pedestrian street serves as a direct connection between key urban amenities, facilitating easy access between the bus stand, market, hospital, and schools. Through thoughtful urban design interventions, such as spacious sidewalks, well-marked crosswalks, and green spaces, we aim to ensure that pedestrians can move safely and comfortably through the town center. Additionally, by incorporating elements that support local businesses, encourage community gatherings, and enhance the aesthetics of the streetscape, our design seeks to preserve and enhance the unique character of the Piliyandala town center, fostering a sense of place and belonging among its inhabitants.

Overall, this proposal serves as a valuable resource for local planners and stakeholders, offering insights and strategies for enhancing walkability, promoting social interaction, and revitalizing urban spaces in small towns. By implementing the principles outlined in this proposal, Piliyandala has the opportunity to emerge as a model for sustainable and inclusive urban development, showcasing the power of people-centered design in creating thriving and livable communities.

6. Acknowledgment and Author Contribution

This research-based planning proposal is developed as a part of Site Planning & Design Studio (Individually Supervised Detail Project Proposal) as a course fulfillment of the Honors Degree of Bachelor of Science in Town and Country Planning, Department of Town and Country Planning, University of Moratuwa. The paper is drafted based on this research-based study to contribute to planning knowledge and practice in Sri Lanka.

Githmi Amanda Abeygunawardana, the student and the first author conceptualized and designed the study, developed this research-based proposal, performed data collection and analysis, used software and tools of DepthMap, ArcGIS, Google Earth, AutoCAD and Photoshop, and drafted the manuscript, contributing 80% to the overall intellectual effort of the paper.

Chathura Kovida De Silva was the mentor during the studio project and contributed by guiding the study and commenting on the design proposal. In producing the paper, he provided revisions and additions to the manuscript, contributing 20% to the overall intellectual effort of the paper.
7. References


