

Transforming Derelict Spaces in Tenali into Green Urban Landscapes: A Strategy for Sustainable Urban Regeneration

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ABSTRACT

This thesis explores the transformation of derelict spaces in Tenali into green urban landscapes as a strategy for sustainable urban regeneration. With rapid urbanization and the decline of industrial and unused spaces, Tenali has several derelict areas that contribute to urban decay, environmental degradation, and a lack of community engagement. This study aims to identify these underutilized areas and propose their redevelopment into Green Urban landscapes, such as parks, community gardens, and recreational zones, to enhance the city's ecological footprint, social cohesion, and urban aesthetics. The research will involve a comprehensive analysis of existing derelict sites, green space design principles, community involvement strategies, and sustainable urban design approaches, ultimately providing a framework for transforming these spaces into vibrant, multi-functional urban landscapes.

INTRODUCTION

The rapid urbanization witnessed in Indian cities over recent decades has often led to haphazard development, which in turn has resulted in the neglect and underutilization of specific urban spaces. Many cities now have pockets of abandoned or derelict land that were once intended for various uses but have since been

left to deteriorate. This trend poses a significant issue in Tenali, a growing city where underutilized spaces detract from the overall urban experience, causing challenges related to environmental quality, aesthetics, and livability. Addressing these issues by transforming these derelict spaces into green urban landscapes could be an effective solution for enhancing the city's sustainability, aesthetic appeal, and quality of life.



The Significance of Green Urban landscapes in Urban Regeneration

Urban Green Urban landscapes, such as parks, gardens, green rooftops, and community gardens, play a crucial role in creating sustainable and livable cities. They provide a range of environmental, social, and economic benefits, which can be particularly impactful in cities like Tenali, where Green Urban landscapes are limited. The transformation of abandoned spaces into green areas is not only an approach to urban beautification but also a key strategy for sustainable urban regeneration.

SCOPE OF STUDY

The scope of this study encompasses a comprehensive examination of the various dimensions of Green Urban landscapes in Tenali and their impact on urban livability. It aims to provide a multi-faceted understanding of how these spaces contribute to the city's environmental, social, economic, and cultural dynamics. The following outlines the specific areas covered in the study:

- **Geographical Focus:** The study will be limited to the city of Tenali, focusing on its derelict and underutilized spaces.
- **Sustainability Principles:** Emphasis on sustainable design approaches, ecological balance, and environmentally friendly technologies.
- **Community Engagement:** Involvement of local communities and stakeholders in the planning and design process to ensure that the transformed spaces meet their needs and expectations.
- **Urban Design and Landscape Architecture:** Exploration of design principles that integrate green infrastructure with the urban environment.

AREA OF THE STUDY

The study of Transforming Derelict Spaces in Tenali into Green Urban Landscapes: A Strategy for Sustainable Urban Regeneration encompasses several interconnected areas, reflecting the multifaceted impact of these spaces on the city's environment, society, and economy. Below are the key areas of focus:

- **Urban Analysis:** Identification of derelict spaces across Tenali and assessment of their current state, environmental impact, and potential for transformation.
- **Landscape and Urban Design:** Application of sustainable design principles to develop proposals for Green Urban landscapes.
- **Social and Cultural Aspects:** Understanding community needs, historical context, and cultural significance of these spaces in Tenali.
- **Environmental Impact Assessment:** Analysis of the ecological benefits and challenges of converting derelict areas into green landscapes.

The area of study is comprehensive, reflecting the various dimensions through which Green Urban landscapes impact urban livability in Tenali. By examining these interconnected areas, the research aims to provide valuable insights that can inform urban planning, policy-making, and community engagement efforts to enhance the livability and sustainability of Tenali as a thriving urban environment.

2.4 LITERATURE REVIEW

1. **Dempsey and Burton (2012)** - In their study on urban regeneration, Dempsey and Burton explore how transforming neglected urban areas into Green Urban landscapes enhances environmental quality and social

1. METHODOLOGY

well-being. Their work underscores the importance of Green Urban landscapes in mitigating urban challenges like pollution and urban heat islands.

2. **Carmona et al. (2003)** - The authors examine public space management and its implications for urban regeneration, emphasizing that reclaimed derelict spaces contribute to improved urban aesthetics, reduced crime, and enhanced property values. They argue for an integrated approach to design and maintenance of Green Urban landscapes.
3. **Chiesura (2004)** - Chiesura's research focuses on the social and psychological benefits of urban Green Urban landscapes, noting how Green Urban landscapes play a significant role in enhancing community well-being, mental health, and providing residents with a sense of peace within the urban landscape.
4. **Kabisch and Haase (2014)** - This study investigates urban green space development in European cities, linking it to climate resilience and sustainable urban planning. The authors advocate for the transformation of derelict spaces into green areas as a strategy to counter climate change and enhance urban resilience.
5. **Barton and Pretty (2010)** - Through their research, Barton and Pretty highlight the physical and mental health benefits of Green Urban landscapes, asserting that proximity to greenery promotes physical activity and reduces stress. They suggest that cities incorporating green landscapes experience better health outcomes among their residents.
6. **Harnik (2010)** - Harnik's work on "Urban Green: Innovative Parks for Resurgent Cities" discusses how converting underutilized spaces into parks and green landscapes can stimulate local economies, attract businesses, and improve the overall livability of urban areas.
7. **Kabisch, Qureshi, and Haase (2015)** - This study examines Green Urban landscapes as "cool spots" in cities, mitigating the effects of urban heat islands. They argue that transforming vacant or derelict areas into green zones helps reduce temperatures in dense urban regions, promoting environmental sustainability.
8. **Wolch, Byrne, and Newell (2014)** - In exploring the social dimensions of green space access, the authors emphasize that equitable distribution of green areas, especially in lower-income neighborhoods, is critical for social equity. They discuss green regeneration as a means to promote inclusivity and environmental justice.
9. **Bowler et al. (2010)** - Bowler et al. conduct a meta-analysis of studies on the environmental benefits of urban Green Urban landscapes, showing how they improve air quality, reduce noise, and create habitats for wildlife. They argue for integrating more green landscapes into urban planning as part of sustainable city strategies.
10. **Jim and Chen (2006)** - Their study examines how Green Urban landscapes contribute to property value increases and community pride in urban areas. They advocate for transforming derelict spaces into green zones to enhance urban aesthetics, thereby benefiting the social and economic fabric of the city.

Stage	Description	Methods	Expected Outcome
Research Design	Conceptualizing the study and outlining both qualitative and quantitative approaches.	- Mixed-method approach - Qualitative (interviews, case studies) - Quantitative (surveys)	A comprehensive framework to examine Green Urban landscapes and urban livability from multiple perspectives.
Data Collection	Gathering secondary data to understand the role of Green Urban landscapes in urban areas.	Secondary Data: Literature review, case studies, reports	Detailed insights into the benefits and challenges of Green Urban landscapes in different urban contexts.

Stage	Description	Methods	Expected Outcome
Data Analysis	Processing and analyzing the collected data to draw meaningful insights.	- Thematic analysis (qualitative data) - Comparative analysis (case studies)	Identifying key patterns, correlations, and contrasts regarding the impact of Green Urban landscapes.
Findings & Recommendations	Synthesizing results to offer actionable recommendations for urban planning and green space management.	- Analysis of environmental, social, and health impacts - Policy suggestions - Best practices for equitable access	Strategies for enhancing Green Urban landscapes and promoting sustainable, livable cities.

Green Infrastructure as a Systemic Approach

Green urban landscapes are often part of a broader concept known as green infrastructure, which views Green Urban landscapes as interconnected systems that function similarly to traditional infrastructure. Green infrastructure prioritizes ecological sustainability and resilience, integrating Green Urban landscapes throughout urban planning processes:

- **Connecting Green Urban landscapes through Green Corridors:** Establishing interconnected green corridors links various parks, urban forests, and natural areas, allowing for the movement of wildlife and creating an ecological network across the city.
- **Mixed-Use Planning:** Integrating green landscapes into mixed-use developments allows residential, commercial, and recreational areas to benefit from

nearby Green Urban landscapes, creating multifunctional urban zones.

- **Multifunctionality:** Green infrastructure enables cities to design spaces that provide multiple services, such as recreational areas that also manage stormwater or parks that enhance biodiversity. This maximizes land use efficiency, which is critical in densely populated urban areas.

Green urban landscapes represent a fundamental shift towards sustainable and resilient urban development. By introducing greenery into cities, they contribute to environmental health, social well-being, and economic vitality, enhancing the quality of life for urban residents. They are essential for cities aiming to improve livability, promote biodiversity, and build resilience against climate change. As urban populations continue to grow, green urban landscapes will play an increasingly important role in shaping sustainable, adaptable, and vibrant cities.

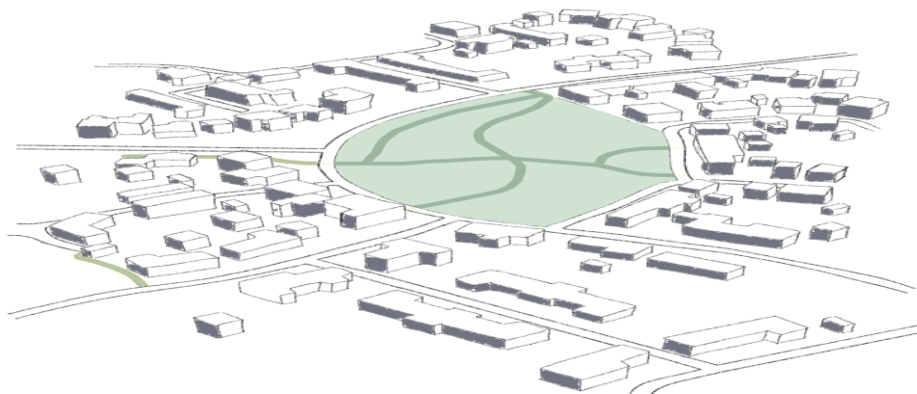
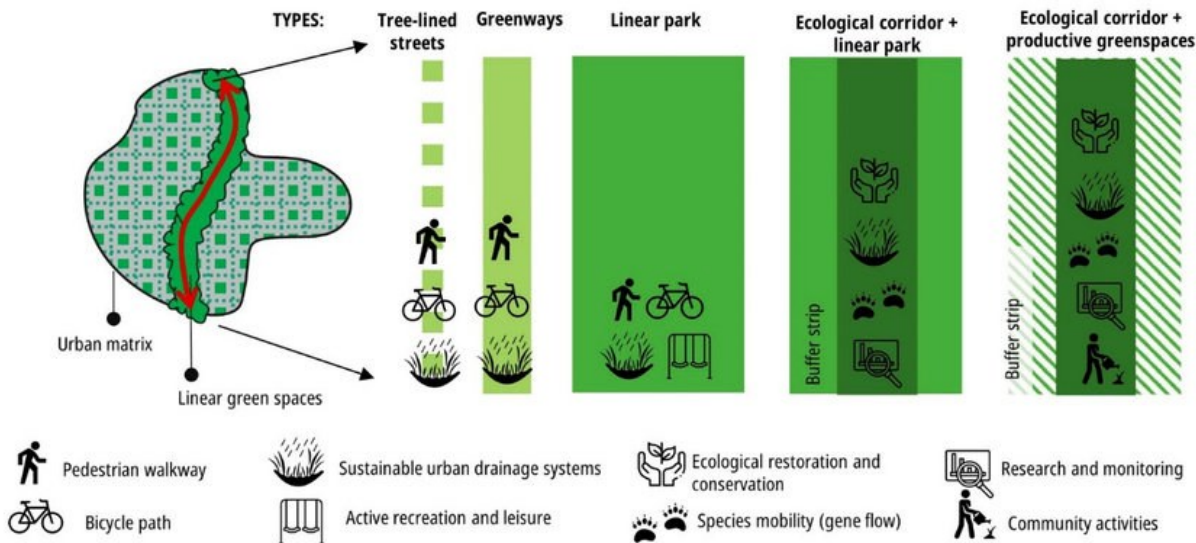


Fig 2



3.1 WHY TENALI

Transforming derelict spaces into green urban landscapes is particularly valuable for Tenali due to its unique geographic, economic, and social context. As a mid-sized but rapidly growing city in Andhra Pradesh, Tenali faces specific urban challenges that make it an ideal candidate for sustainable regeneration through green space transformation. Here are several reasons why Tenali is a prime city for such a strategic intervention:

1. Rapid Urbanization and Urban Pressure

Tenali, like many growing Indian cities, is undergoing rapid urbanization. As the population grows, the city experiences greater demands on infrastructure, housing, and public amenities, leading to strain on existing resources. Urban sprawl and increased development have contributed to the presence of derelict or underutilized areas that can disrupt the urban landscape. Converting these neglected spaces into green urban landscapes can help Tenali manage urban pressures by creating sustainable, multifunctional spaces that meet the needs of a growing population.

2. Environmental Challenges and Climate Adaptation

Tenali is located in an area that experiences hot and humid weather, as well as seasonal flooding risks. The city's climate and environmental challenges make Green Urban landscapes especially valuable for moderating temperatures, improving air quality, and managing stormwater. Green Urban landscapes can help reduce the urban heat island effect by providing shade and vegetation that cools the air through evapotranspiration. Additionally, green landscapes with permeable soil can help absorb rainwater, reducing the risk of flooding and supporting groundwater recharge, which is essential in a region with variable monsoon patterns.

3. Limited Existing Green Urban landscapes

Currently, Tenali has limited public parks, gardens, and recreational Green Urban landscapes compared to its population size and urban density. The lack of accessible green areas restricts residents' opportunities for recreation, relaxation, and social gathering, particularly in densely populated areas. Transforming derelict spaces into green urban landscapes can address this deficit, providing much-needed access to nature for all residents, including children, the elderly, and other vulnerable groups who benefit significantly from proximity to greenery.

4. Improving Urban Livability and Quality of Life

For Tenali's residents, the creation of Green Urban landscapes can significantly improve livability. Green areas foster mental and physical health by providing natural settings for exercise, relaxation, and social interaction. Research indicates that access to Green Urban landscapes can reduce stress, increase happiness, and lower rates of depression, which are all benefits that could enhance the quality of life for Tenali's population. These spaces also provide residents with a natural escape from the noise and pace of city life, contributing to an overall healthier urban environment.

5. Revitalizing Underutilized and Derelict Spaces

Like many cities, Tenali has derelict areas, vacant lots, and abandoned plots that have fallen into disuse, often becoming eyesores or attracting unwanted activities. Transforming these neglected spaces into green urban landscapes would not only improve the city's aesthetics but also discourage vandalism, illegal dumping, and other undesirable activities. Well-maintained green areas can create safe, clean, and attractive environments, fostering civic pride and reducing crime.

6. Supporting Economic Growth and Community Revitalization

Green Urban landscapes can also be powerful economic catalysts, boosting property values, attracting tourists, and supporting local businesses. For example, areas around parks and gardens typically experience increased property values and attract commercial activity, which can benefit local economies. In Tenali, where economic development is ongoing, investing in green space transformation could stimulate economic growth by attracting visitors, encouraging new businesses, and enhancing the city's appeal as a vibrant, eco-friendly destination.

7. Promoting Social Cohesion and Community Engagement

Transforming derelict spaces into community-oriented Green Urban landscapes encourages social interaction, inclusivity, and community cohesion. Parks, gardens, and community green areas serve as gathering spaces that bring together diverse groups of people, fostering social connections and community pride. This is particularly important for Tenali, where community bonds are a vital part of social life. Additionally, green space projects often provide opportunities for community involvement in design, maintenance, and events, strengthening residents' connection to their neighborhood.

8. Alignment with National and Global Sustainability Goals

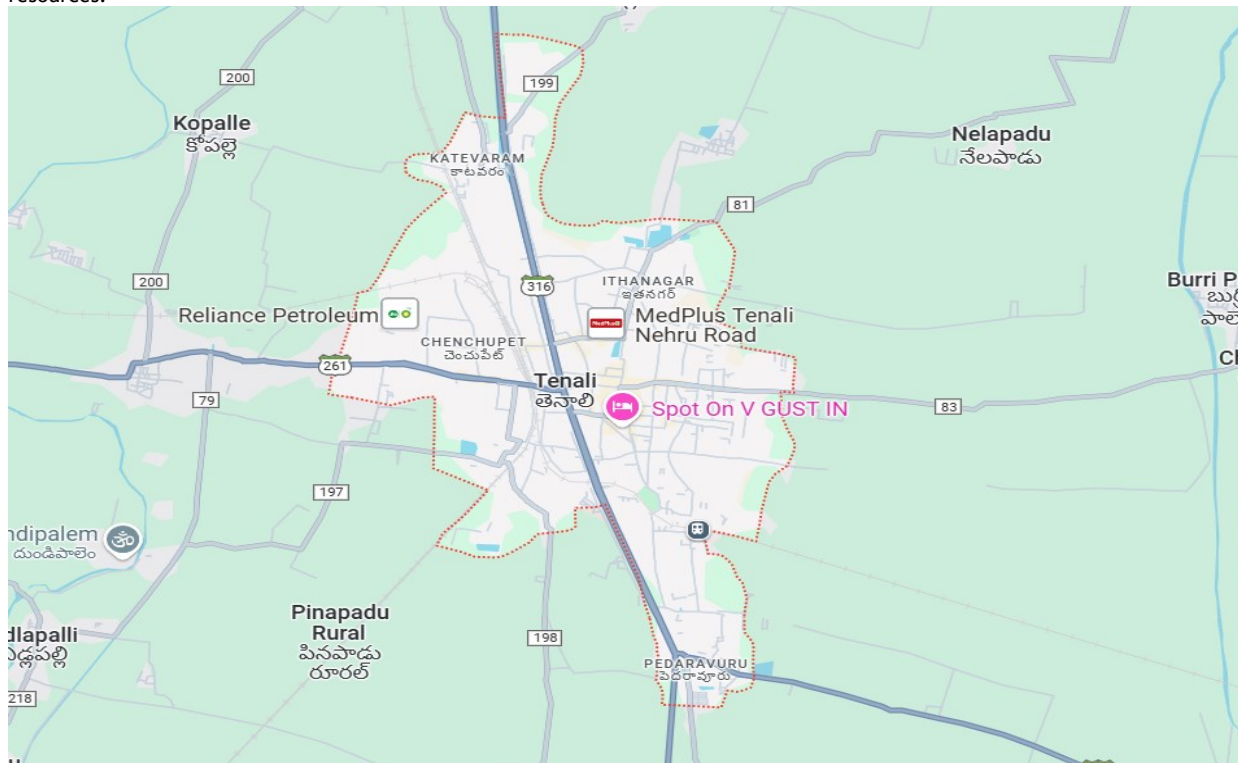
India's government has committed to a range of environmental and sustainability goals, including those outlined in the Sustainable Development Goals (SDGs) and the Smart Cities Mission. Transforming derelict spaces into green urban landscapes aligns with these goals, contributing to urban sustainability, resilience, and livability. By adopting green regeneration, Tenali can set an example for other cities aiming to prioritize sustainable urban growth. This commitment to green development can also attract funding, grants, and support from both national and international organizations focused on urban resilience and sustainability.

9. Creating a Model for Other Indian Cities

Tenali's successful transformation of derelict spaces into green landscapes could serve as a replicable model for other Indian cities facing similar challenges. As a smaller city compared to major urban centers, Tenali provides a scalable and adaptable case study for green urban regeneration that other cities can learn from and implement within their contexts. This model could inspire regional and national green space initiatives that contribute to healthier, more sustainable urban environments across India.

10. Enhancing Resilience to Climate Change and Environmental Risks

With the increased frequency of extreme weather events and climate-related risks, enhancing resilience is critical for Tenali. Green Urban landscapes contribute to resilience by reducing temperature extremes, managing stormwater, and creating green buffers that can mitigate environmental risks. This makes the city more adaptable to the impacts of climate change, providing environmental benefits that protect Tenali's infrastructure and resources.



3.6 TYPES OF GREEN URBAN LANDSCAPES IN TENALI

Transforming Tenali's urban areas with green landscapes involves implementing various types of green spaces tailored to the city's unique needs, geography, and community requirements. By creating a diverse array of green urban landscapes, Tenali can address local challenges such as pollution, limited recreational space, and environmental degradation, while enhancing urban resilience and sustainability. Here is a detailed look at the types of green urban landscapes that could be beneficial for Tenali:

1. Public Parks and Gardens

- **Community Parks:** Tenali could establish community parks in central and accessible locations to provide open spaces for recreation, social gatherings, and community events. Community parks with playgrounds, walking trails, and seating areas would offer residents places for relaxation and leisure, making them essential for enhancing quality of life and fostering social cohesion.
- **Botanical Gardens:** A botanical garden could serve both as a recreational area and an educational resource in Tenali. By showcasing native plants, medicinal herbs, and diverse flora, a botanical garden would promote biodiversity, attract tourists, and offer educational opportunities for schools and environmental enthusiasts.
- **Pocket Parks:** Since Tenali has limited space in some areas, small pocket parks could transform underutilized or vacant land into green spaces. These small parks require minimal land but have a big impact by offering greenery and seating for local residents in dense neighborhoods. Pocket parks can be designed with shrubs, small trees, and seating areas for rest and relaxation.

2. Green Roofs and Vertical Gardens

Transforming derelict spaces into green urban landscapes offers a strategic approach for sustainable urban regeneration in Tenali. By addressing environmental challenges, improving urban aesthetics, supporting economic growth, and promoting community well-being, green space initiatives can profoundly enhance the city's livability and resilience. With a commitment to sustainable development, Tenali can revitalize its urban fabric, creating a model city that aligns with national and global goals for a greener, healthier, and more inclusive urban future.

- **Green Roofs on Public and Commercial Buildings:** Tenali could encourage the use of green roofs on public buildings, hospitals, schools, and commercial structures. Green roofs help reduce indoor temperatures, lower energy consumption, and absorb rainwater, making them ideal for urban areas with limited ground space for vegetation.
- **Vertical Gardens on Walls and Facades:** Vertical gardens, or green walls, could be integrated into building facades to enhance the city's aesthetic appeal and improve air quality. They are particularly suitable for commercial areas or densely built neighborhoods where open green space may be limited. Vertical gardens add greenery without taking up ground space, creating visually pleasing structures while contributing to air purification.

3. Urban Forests and Tree Canopies

- **Urban Forests in Larger Open Spaces:** Tenali could designate areas for urban forests by planting native trees in vacant lands, degraded areas, or existing parks to create small, dense forests. These urban forests would help cool the city, improve air quality, and provide habitats for wildlife. Creating such forests would also support Tenali's efforts to enhance biodiversity and promote environmental awareness.
- **Tree-lined Avenues and Streets:** Increasing tree cover along Tenali's streets and avenues could improve air quality and provide shade, making walking and cycling more comfortable. Trees planted along roads would contribute to a green canopy, enhancing urban aesthetics and creating a natural cooling effect in the city's public spaces.

4. Community and Allotment Gardens

- **Neighborhood Gardens for Food Production:** Community gardens offer residents, especially those without private yards, an opportunity to grow fruits, vegetables, and herbs. These gardens not only promote food security but also encourage sustainable practices and community bonding. Tenali could designate plots for community gardening, allowing residents to participate in urban agriculture and promoting local food production.
- **Allotment Gardens for Rent:** Tenali could establish allotment gardens where individuals or families rent small plots for personal gardening use. These gardens would allow people to grow their own produce, encourage self-sufficiency, and foster an appreciation for sustainable agriculture practices.

5. Green Corridors and Eco-paths

- **Green Walkways and Bicycle Paths:** By creating green walkways and cycle paths, Tenali could connect different parts of the city while promoting eco-friendly transportation options. These corridors would not only improve accessibility but also provide shaded paths for pedestrians and cyclists, encouraging healthier, active lifestyles. Green corridors would connect residential areas, parks, schools, and commercial centers, creating an integrated network of green spaces.
- **Biodiversity Corridors for Wildlife Movement:** Tenali could establish biodiversity corridors to connect green spaces, parks, and urban forests. These corridors would facilitate the movement of wildlife, promoting ecological connectivity and enhancing urban biodiversity. By linking green areas, biodiversity corridors support various species and create a balanced ecosystem within the city.

6. Rain Gardens and Bioswales

- **Rain Gardens in Public Spaces:** Rain gardens are shallow, planted depressions that absorb rainwater, reducing runoff and filtering pollutants. Installing rain gardens in public spaces, near sidewalks, or along roadways would help Tenali manage stormwater, prevent flooding, and improve water quality. Rain gardens could also enhance the city's landscape by introducing native plants and flowers.
- **Bioswales Along Streets and Parking Areas:** Bioswales are linear ditches planted with vegetation that direct stormwater away from roads and parking lots. Tenali could use bioswales to manage water runoff along its main roads and parking areas, minimizing the risk of flooding and soil erosion while enhancing the visual appeal of these spaces. Bioswales also improve soil health by allowing water to infiltrate and nourish the soil, supporting plant growth.

7. Playgrounds and Recreational Green Spaces

- **Family-friendly Playgrounds:** In Tenali's residential areas, family-friendly playgrounds would provide safe, green spaces for children to play, promoting physical activity and socialization. These playgrounds could be equipped with natural elements like tree stumps, logs, and sandpits, creating environmentally friendly play areas that blend with the landscape.
- **Sports Fields and Open Recreational Areas:** Green recreational areas, such as sports fields and open spaces, are vital for encouraging outdoor physical activities like soccer, cricket, and yoga. These spaces would promote health and well-being, support community sports, and provide flexible areas for recreational events and cultural gatherings.

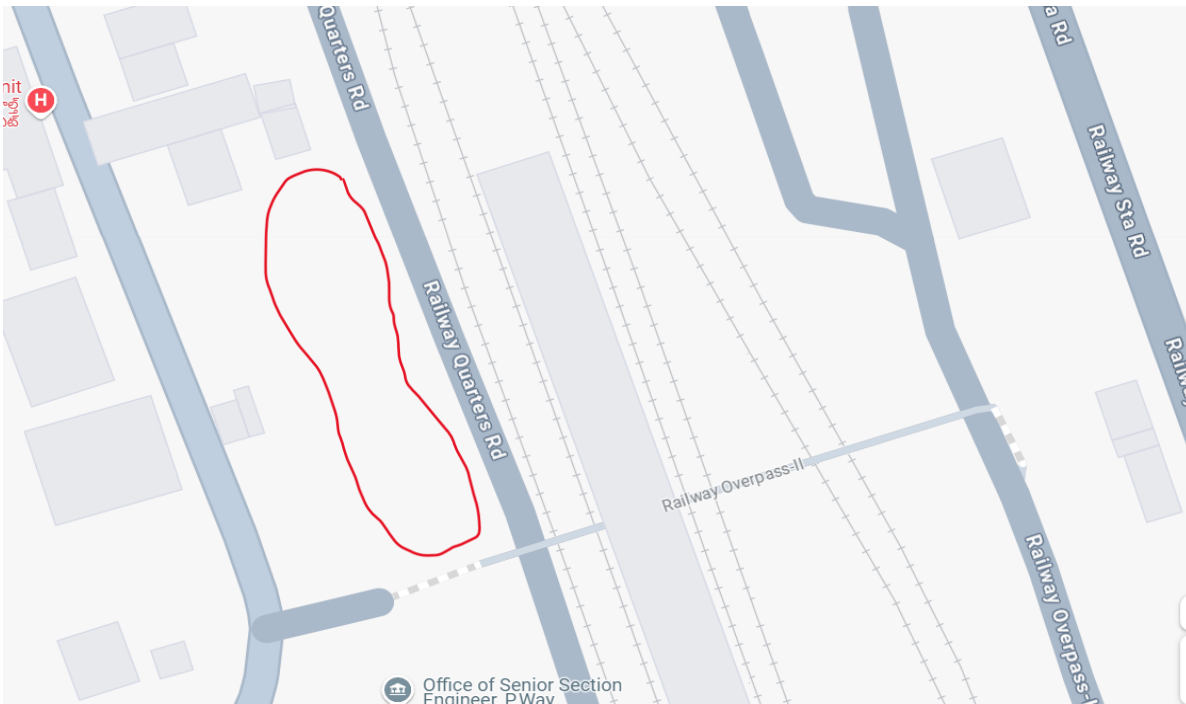
4. SITE PLANNING



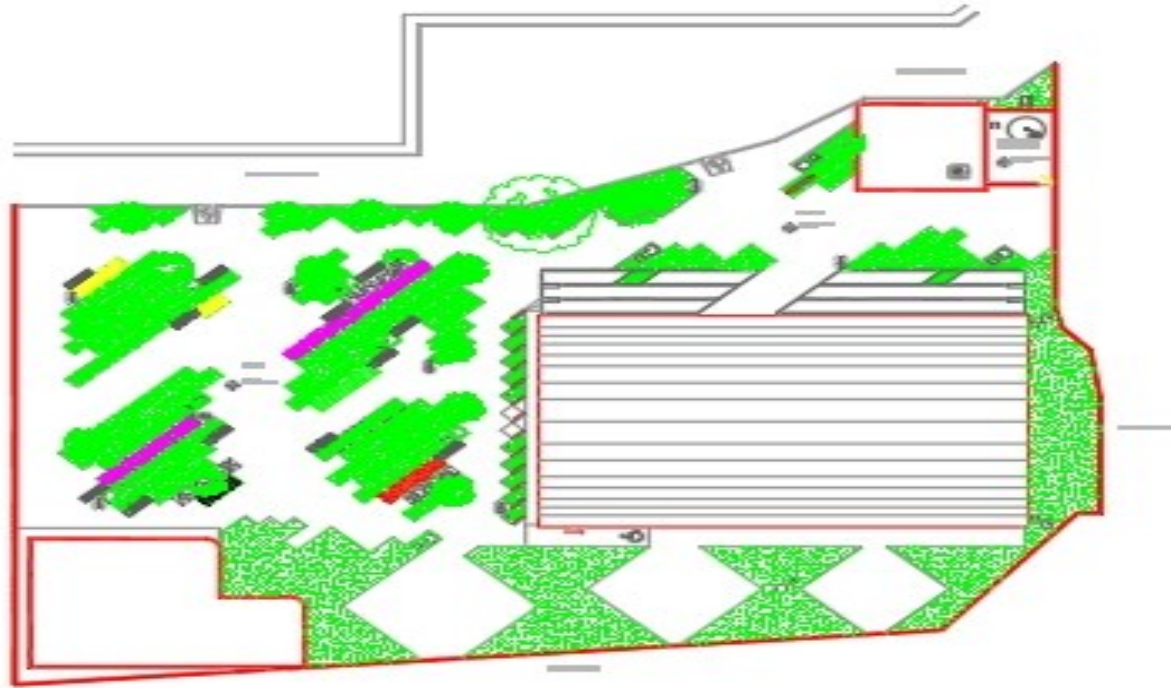
4.1 PROPOSED SITE

5. DETAILED DRAWINGS

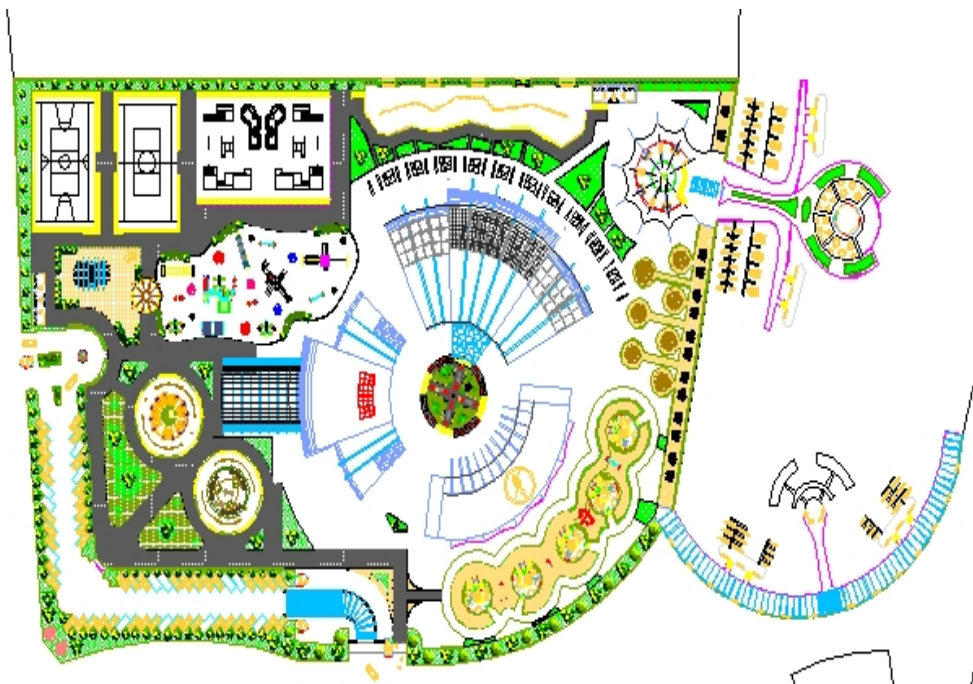
5.1 PLAN OF GREEN URBAN LANDSCAPES



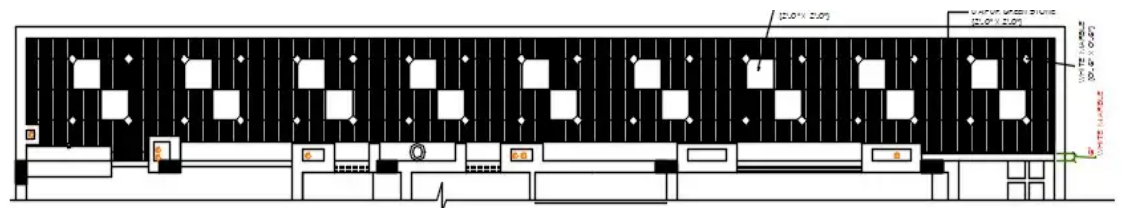
5.2 PLAN OF GREEN URBAN RAILWAY PARKS



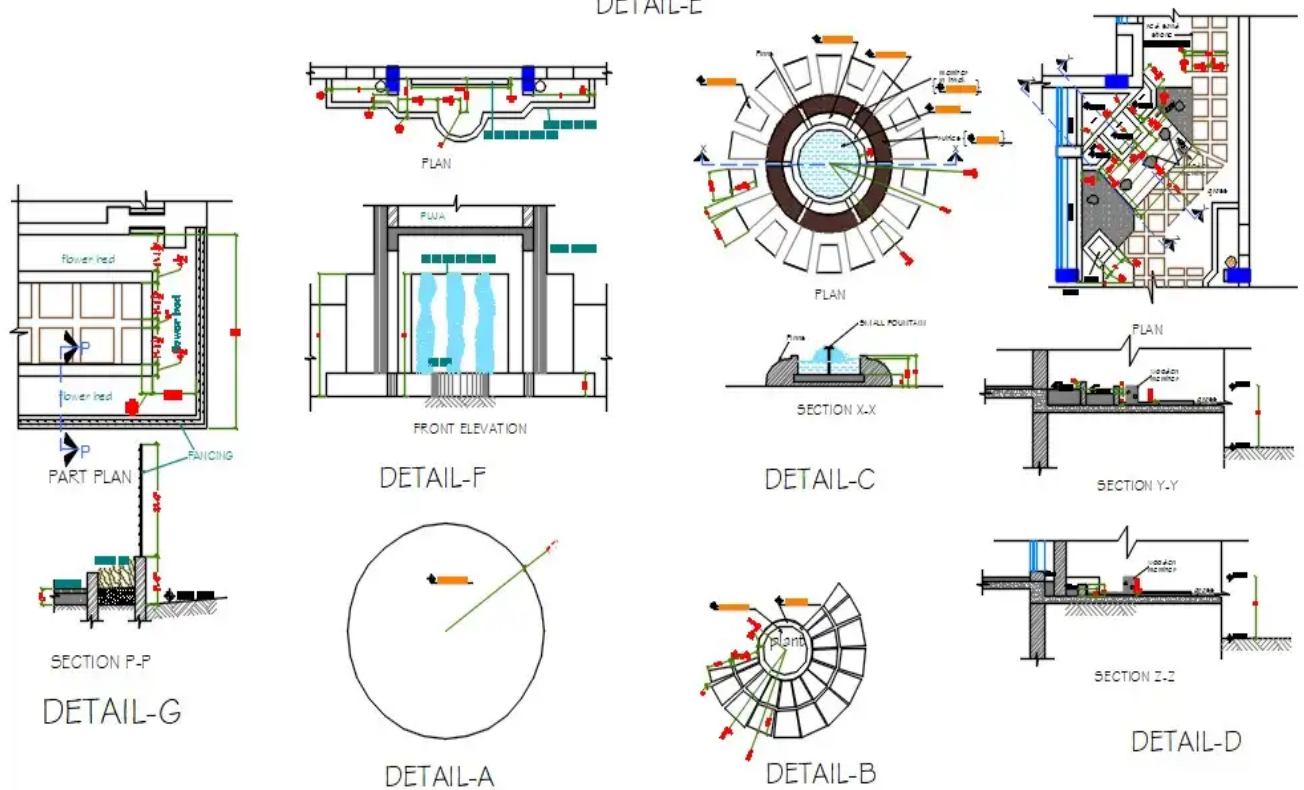
5.3 PLAN OF RECREATIONAL PARKS



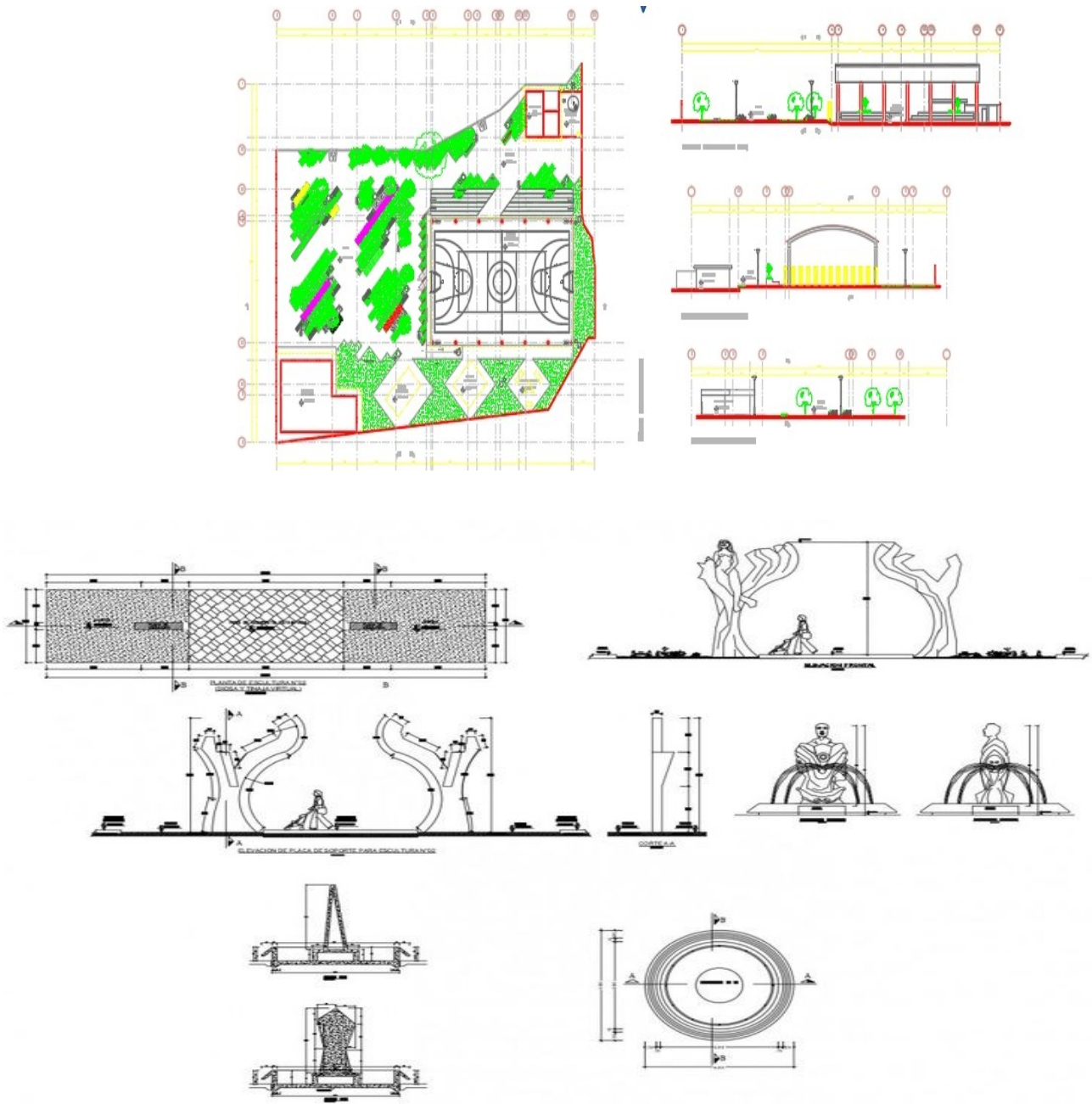
5.4 PLAN OF WATER FOUNTAINS



DETAIL-E



8.5 DETAILS



8.6 VIEWS



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