



# PLANNING INTERVENTION TO DEVELOPMENT BLUE GREEN INFRASTRUCTURE

<sup>1</sup> Praveen Kumar, <sup>2</sup>Ar. Kunwar Ghanshyam Yadav

<sup>1</sup>PG Student (M. PLAN), School Of Architecture And Planning, Babu BanarsiDas University, Lucknow.

<sup>2</sup>Asst. Pofessor, School Of Architecture And Planning, Babu Banarsi DasUniversity, Lucknow.

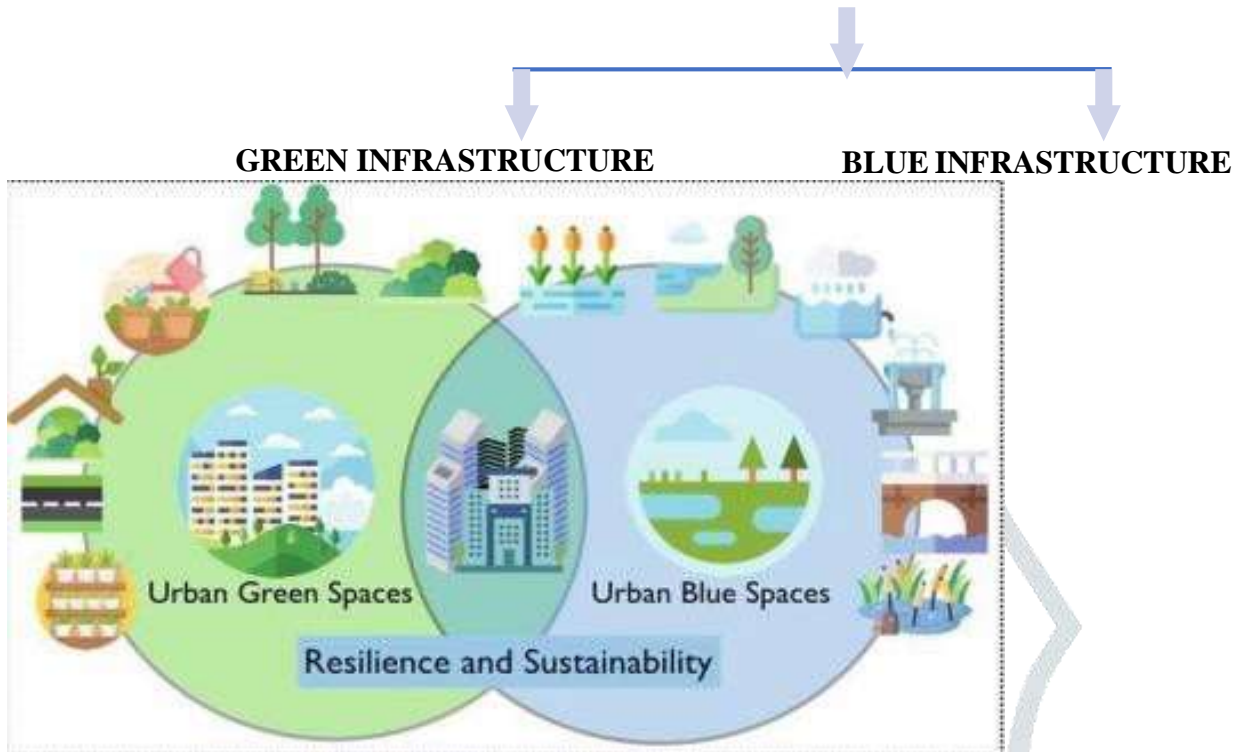
**Abstract:** Blue-green infrastructure (BGI) is an innovative approach to urban and natural resource management that aims to address various environmental challenges while promoting sustainable development. This concept integrates natural and engineered systems to manage water resources, mitigate urban heat island effects, enhance biodiversity, and improve overall environmental quality in urban areas.

The "blue" component refers to water-related features such as rivers, lakes, wetlands, and water bodies, while the "green" component encompasses vegetated areas such as parks, green roofs, and urban forests. By combining these elements strategically, BGI seeks to mimic natural hydrological processes, reduce the impact of urbanization on ecosystems, and enhance resilience to climate change

**Keywords:** Blue-green infrastructure is an urban planning concept that integrates natural elements like water bodies, vegetation, and soil with engineered systems to manage water sustainably. It encompasses features such as green roofs, rain gardens, permeable pavements, constructed wetlands, and sustainable drainage systems. This approach aims to mitigate the adverse effects of urbanization on water systems, reduce flooding, improve water quality, enhance biodiversity, and provide aesthetic and recreational benefits to urban areas

**Introduction -:**Blue-Green Infrastructure can be defined as an umbrella of nature-based solutions that have a direct impact on climate change, urban resilience, and health and wellness' Environments by introducing a more natural water cycle and multi-functional land use to generate benefits for the environment, society and the economy. Blue and green infrastructure are integrated into urban spaces, and linked up to control rainwater and excess surface water and combat increasing development and hard surfaces.

Using green space to manage surface water and implement a more natural approach to urban drainage enables water to be controlled closer to the source.

**BGI (BLUE GREEN INFRASTRUCTURE)**

Blue-green infrastructure (BGI) represents a paradigm shift in urban planning and design, blending natural processes with engineered systems to create resilient and sustainable environments. In essence, BGI seeks to mimic and enhance the natural water cycle within urban landscapes, integrating elements such as green spaces, water bodies, and permeable surfaces to manage stormwater runoff, mitigate flooding, improve water quality, and enhance overall environmental quality.

Unlike traditional "gray" infrastructure, which relies heavily on concrete channels and pipes to manage water, BGI takes a more holistic approach, recognizing the interconnectedness of natural systems and the built environment. By harnessing the power of vegetation, soil, and natural water features, BGI not only addresses pressing environmental challenges but also provides a host of co-benefits, including improved air quality, enhanced biodiversity, and enhanced recreational opportunities.

This introduction sets the stage for a deeper exploration of how blue-green infrastructure is reshaping urban landscapes, fostering sustainability, and promoting resilience in the face of climate change and rapid urbanization.

- Operates at and across a number of spatial and temporal scales
  - Has elements, functions, networks and benefits that are not static but evolve as a landscape (and its socio-economic needs) diversifies
- Needs to be accessible and inclusive to all
  - Needs to be actively managed for the long term; concomitant with the need for greater place keeping



- Inter-linkage between the natural and manmade elements in order to provide sustainable and cordial living environment to the humans.
- Incorporates vegetation, soils, and natural processes into the built environment to manage storm water, mitigate the impacts of climate change, and maintain healthy and sustainable communities.
- **Stakeholders:** BGI is an all round solution to cater the needs of projects such as **Smart Cities Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Sustainable Development Goals (SDGs), UN Climate Change Conference (COP26).**

## POLICIES:

Blue-green infrastructure (BGI) policies refer to governmental or institutional strategies and frameworks aimed at promoting the adoption and implementation of blue-green infrastructure practices within urban development and environmental management plans. These policies typically outline guidelines, regulations, incentives, and funding mechanisms to encourage the integration of natural and engineered systems for sustainable urban development. Key components of blue-green infrastructure policies may include:

- **Regulatory Frameworks:** Establishing regulations and standards that require or incentivize the incorporation of blue-green infrastructure elements into urban planning and development processes. This could include zoning ordinances, building codes, and stormwater management regulations that prioritize green infrastructure solutions.
- **Incentive Programs:** Providing financial incentives, tax breaks, grants, or rebates to encourage developers, businesses, and homeowners to implement blue-green infrastructure practices. These incentives may offset the initial costs associated with green infrastructure installation and maintenance.
- **Funding Mechanisms:** Allocating public funds or establishing dedicated financing mechanisms to support the planning, design, construction, and maintenance of blue- green infrastructure projects. This may involve leveraging public-private partnerships, securing grants from governmental agencies or philanthropic organizations, or establishing revolving loan funds.
- **Capacity Building and Technical Assistance:** Offering training programs, workshops, and technical assistance to local governments, professionals, and community stakeholders to build their capacity in implementing blue-green infrastructure projects effectively. This may include providing guidance on planning, design, construction, and maintenance practices
- **Public Awareness and Education:** Launching outreach campaigns and educational initiatives to raise awareness about the benefits of blue-green infrastructure among policymakers, residents, businesses, and other stakeholders. This may involve disseminating informational materials, organizing community events, and

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- **Monitoring and Evaluation:** Developing monitoring and evaluation frameworks to assess the performance and effectiveness of blue-green infrastructure projects in achieving their intended environmental, social, and economic goals. This may involve collecting data on factors such as water quality improvement, flood risk reduction, biodiversity enhancement, and community engagement

## DISCUSSION AND CONCLUSIONS

In conclusion, blue-green infrastructure offers a forward-thinking approach to urban development that prioritizes sustainability, resilience, and environmental stewardship. By integrating natural processes with innovative engineering solutions, BGI not only mitigates the impacts of urbanization on water systems but also enhances the overall livability and functionality of cities.

As we face escalating challenges related to climate change, population growth, and resource scarcity, the adoption of blue-green infrastructure becomes increasingly imperative. Its multifaceted benefits extend beyond flood control and water management to encompass improved air quality, increased biodiversity, enhanced public health, and greater community resilience.

However, realizing the full potential of blue-green infrastructure requires concerted efforts from policymakers, urban planners, developers, and communities alike. Collaboration, innovation, and long-term commitment are essential to mainstreaming BGI practices and integrating them into the fabric of our cities.

In the years ahead, continued investment in blue-green infrastructure will be crucial for creating sustainable, adaptive, and vibrant urban environments that meet the needs of current and future generations while safeguarding the health of our planet. Embracing the principles of BGI represents not only a practical necessity but also a profound opportunity to reimagine and transform our cities into resilient, thriving, and harmonious habitats for all.

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