Gelephu Mindfulness City: Sustainable Urbanisation in the Age of Climate Change

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The development of Gelephu Mindfulness City is a long-term initiative, with phased growth expected from 2024 to beyond 2040. The city will initially cater to a population of 100,000 and aims to accommodate over one million residents by 2065, making it one of Bhutan's most significant initiatives in urban development. GMC will become a major tourist destination, expected to attract more than four million visitors annually by mid-century.

Policy Framework

GMC's designation as a Special Administrative Region (SAR) grants it the autonomy to innovate its governance, blending business-friendly policies with a strong commitment to environmental preservation and ethical practices. This framework embodies a model where prosperity is achieved without compromising the health of the planet.

The purpose of establishing this SAR is to create a vibrant economic hub by providing a conducive business environment and compelling incentives. It will be a Mindfulness City, encompassing conscious and sustainable businesses, inspired by Bhutan's Buddhist spiritual heritage, and national cultural identity.

At the heart of GMC is the Diamond Strategy, a transformative vision of His Majesty the King of Bhutan. The strategy is likened to a "diamond" because of its multifaceted nature, focusing on interdependent and critical domains to ensure a balanced and robust national transformation. The strategy incorporates the "One Country, Two Systems Approach". This governance framework allows the GMC to function as a model of reform, where progressive ideas and systems are piloted before scaling them nationwide. It creates a dynamic feedback loop, enabling iterative

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improvements and ensuring adaptability to Bhutan's unique cultural and socio-economic context.

Legal reforms that are internationally recognised and competitive are described as the "anchor" of the Diamond Strategy, ensuring that policies are consistently applied. Innovations from GMC are scalable and replicable across the country. A fair and just society is maintained amid rapid modernisation and change.

GMC serves as the epicenter for testing and implementing new policies, technologies, and governance models. The city's designation as a Special Administrative Region allows for greater autonomy and flexibility in driving change. While the mindfulness aspect underscores Bhutan's commitment to holistic well-being and sustainable development. It reflects a forward-looking vision to adapt to an interconnected global landscape while retaining Bhutan's unique cultural and ethical foundations.

Landscape

Built on the principles of climate and social resilience, GMC pledges to preserve at least 60% of its land as forest cover, in alignment with Bhutan's constitutional commitment to environmental preservation. Spanning over 2,600 square kilometres, GMC's land-use planning prioritises biodiversity conservation.

Situated between two significant biodiversity hotspots—the Royal Manas National Park and Phibsoo Wildlife Sanctuary—the city will incorporate wildlife corridors, ensuring that urbanisation complements and enhances local ecosystems. GMC's development is not merely about building urban spaces but fostering nature regeneration and human-nature connectivity through wildlife conservation, habitat restoration, and sustainable agriculture.

Urban sprawl will be limited, with land use dedicated to areas such as agriculture, natural habitat, and protected forests—accounting for 70% of the total area. The city will act as an example of integrated urban-nature ecosystems, aligning with global environmental best practices such as nature-based solutions and climate-resilient urban design.

Key ecological initiatives currently underway include wildlife and habitat preservation, and hydrology and flood management. International and local experts mapped elephant migratory routes and designed strategies to minimize human-wildlife conflict while conducting environmental and feasibility studies of the land. Hydrology consultants are monitoring the river system, flood management, and ecological impact.

Infrastructure and Climate Resilience

Priority infrastructures such as the hydropower plant, Gelephu international airport, and enhanced road and rail connectivity will be catalytic to the success and sustainability of GMC.

The GMC vision includes developing strong green energy infrastructure, particularly in hydropower and solar technologies. A planned hydropower plant at the Sunkosh Dam will provide the city's energy needs, complemented by solar and geothermal sources, ensuring that GMC operates with 100% renewable energy. This approach reflects the global shift towards decentralised, renewable energy grids and will make GMC a key player in the global transition to a low-carbon economy.

The new Gelephu International Airport design by Bjarke Ingels Group (BIG) in collaboration with NACO is designed for mindful travel. The airport's diagrid structure will be constructed from locally and sustainably sourced timber and adorned with wood carving from local artists.

The city's infrastructure will adhere to global best practices in climate resilience, incorporating green infrastructure, sustainable guidelines and life cycle assessments for building materials and its global warming potential. GMC will utilise cutting-edge technologies such as carbon capture and sustainable construction materials to foster low-carbon and regenerative infrastructure.

By integrating green infrastructure such as the sponge city concept, and advanced flood mitigation strategies, and innovative water management, GMC will enhance biodiversity, improve water quality, and mitigate risk of flooding.

Additionally, GMC will control urban sprawl to protect natural areas vital

for carbon sequestration. Development will be managed to avoid hazardous zones prone to flooding or landslides, minimising the city's vulnerability to climate risks. GMC will be designed for walkability, ensuring that essential services, workplaces, and recreational spaces are within walking or cycling distance. This urban layout reduces car dependency, alleviates traffic congestion, and cuts carbon emissions from transportation, while fostering local businesses and a vibrant, connected community.

Masterplanning, urban planning, and architecture are led by the Bjarke Ingels Group (BIG), ensuring innovative and sustainable urban design that harmonises with the natural landscape and existing community. Mobility and water systems are developed by ARUP, integrating cutting-edge solutions for resilient and efficient urban systems. Project management is overseen by Magnolia Quality Development Corporation Ltd (MQDC), leveraging their expertise in delivering high-quality developments, from residences to mixed-use districts and themed projects.

All planning and development are grounded in research and innovation while prioritising well-being and sustainability. Universal design principles and eco-friendly materials are central to the project, ensuring residents benefit from a high quality of life, confidence in services, and a deep connection to nature.

Core Economic Clusters

GMC's economic masterplan incorporates a strategic framework that includes core industries, supporting non-core sectors, and key enablers like infrastructure, policies, incentives, and regulations. GMC aims to attract businesses that prioritise high-quality, eco-friendly products and services. The city's economic positioning aligns with its broader vision of sustainability and climate resilience.

The economic clusters of GMC include Health and Wellness, Education and Thought Leadership, Green Energy and Tech Industries, Aviation and Logistics, Agritech and Forestry, Spirituality, and Tourism. They are designed with climate resilience as a core principle in their policy and strategy frameworks. Each cluster is envisioned to contribute to a sustainable and regenerative economy.

For instance, the Green Energy and Tech Industries cluster goes beyond renewable energy and green technologies like crypto mining. It aims to foster innovation in climate resilience, such as AI-driven disaster response systems and technologies that minimise waste and optimise resource efficiency.

While we live in a world increasingly defined by data, AI, large language models, and digital connectivity, our physical reality encompasses infrastructure, equipment, and tools, all of which rely on materials. Finite materials that need to be mined, refined, transported, and engineered into products. Therefore, circular economy principles and a deep understanding of society's interdependence with nature will be central to the tech industry's development in GMC.

Similarly, the Agritech and Forestry cluster will integrate climate-smart agricultural practices alongside traditional indigenous knowledge to conserve water, enhance soil health, and reduce emissions. This includes developing resilient crop varieties, adopting agroforestry systems, and utilising advanced technologies to monitor and manage forests sustainably. These efforts will combat deforestation, enhance carbon sequestration, and promote biodiversity.

The Tourism cluster will prioritise sustainable tourism practices that minimise environmental impact, support eco-friendly accommodations, and empower local communities. By offering nature-based tourism experiences that emphasise conservation and climate awareness, GMC will ensure that tourism growth aligns with its broader climate and environmental goals. This holistic approach across all clusters underscores GMC's commitment to building a resilient, sustainable, and interconnected economy that thrives in harmony with nature.

Conclusion

The Gelephu Mindfulness City (GMC) will be highly accessible via the international airport, railways, and an upgraded road network. This global connectivity will facilitate the flow of ideas, businesses, and tourists, positioning GMC as a key player in the regional and global economy.

In a world grappling with the effects of climate change, rapid urbanisation, and biodiversity loss, GMC will be a testbed for the rest of Bhutan, and the Diamond Strategy will impact Bhutan's own policy design and implementation roadmap for climate-conscious growth. GMC could potentially offer a transformative model for the future of urban development, one that harmonises sustainability, heritage, and economic growth, creating a blueprint for resilient, climate-conscious cities worldwide.

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