PASSIVE DEFENSE IN SPATIAL POLICY: IMPROVING URBAN RESILIENCE THROUGH ANTICIPATORY PLANNING

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Image Source: *Author*

1. INTRODUCTION

Cities globally are exposed to compounding and intersecting threats: intensifying climate extremes, volatile geopolitical dynamics and rapid demographic change and urbanisation. These are no longer abstract risks but daily realities that test the fabric and integrity of urban systems. As a result, urban resilience has shifted from a theoretical concern to a strategic imperative. Urban resilience, defined as the capacity of cities to absorb, adapt, and recover from acute shocks and chronic stresses (Resilient Cities Network, 2018), is therefore a strategic priority for protecting lives, infrastructure and livelihoods.

To meet these pressures, cities cannot afford to rely solely on reactive principles; anticipation must become central to planning. Unlike traditional planning approaches, which prepare plausible or desirable futures,

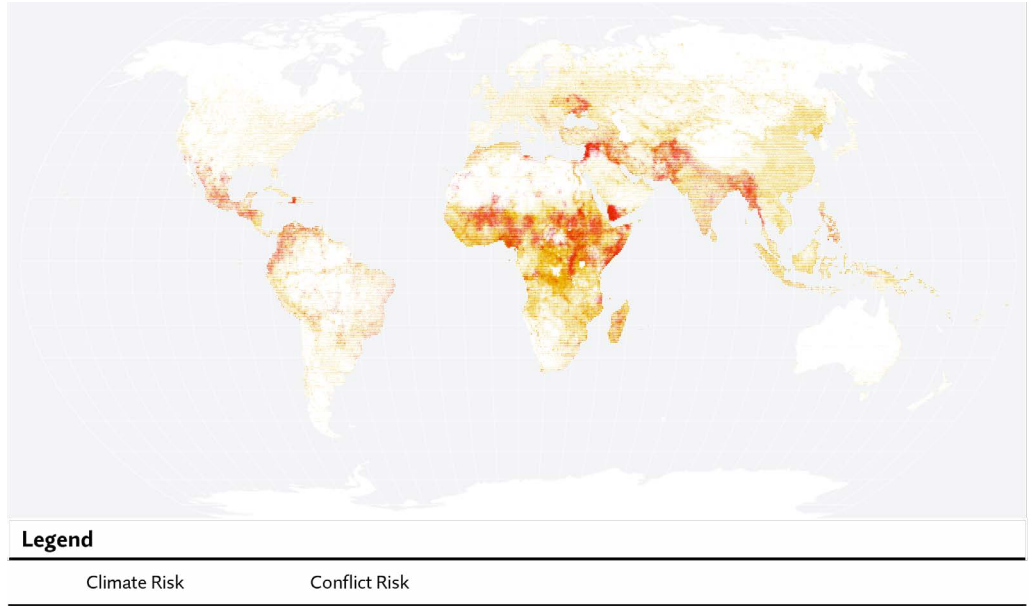

Figure 01 *Intersection of global climate and conflict risks (Climate-Conflict-Vulnerability Index, 2025)*

anticipatory planning deals with high unpredictability and uncertainty in climate, geopolitical and urban futures. Instead of reacting when problems occur, anticipatory planning focuses on identifying potential scenarios and embedding resilience into spatial policy.

Within anticipatory planning approaches, passive defence is a powerful tool in navigating urban vulnerability in the face of these challenges (Pouryarmohammadi, 2021). Rooted in civil protection and military doctrine, passive defence is defined by spatial and infrastructural

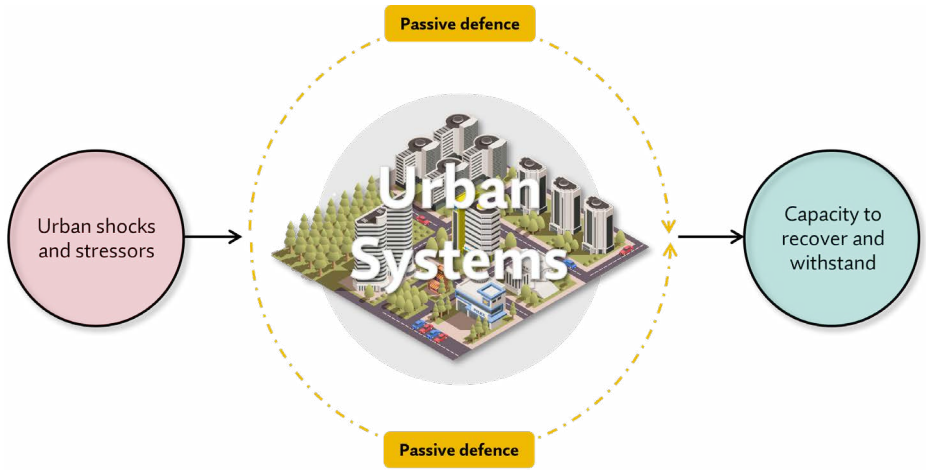

Figure 02 *Passive defence (Author, 2025)*

interventions that reduce hazard exposure, without relying on active emergency responses (Narimisa, M.R., Basri, A., Elahi, M., Hasannezhad, 2019). Examples of passive defence include buffer zones, decentralised infrastructure, protective building placement, and redundancy in service networks. These measures are inherently proactive, low-maintenance, and scalable.

This article argues that spatial policy, through zoning, development standards and long-term land allocations, is the most effective vehicle for institutionalising scalable passive defence principles. It demonstrates this by assessing how passive defence aligns with resilience objectives and by presenting two case studies (Najran Province, Saudi Arabia and the eThekwini Municipality, South Africa) that illustrate how anticipatory spatial measures operate across varied hazards, settlement patterns and governance contexts. These cases demonstrate the adaptation of passive defence principles in diverse urban contexts and resilience challenges, and how spatial policy can serve as a strategic entry point for anticipatory planning to support resilience.

2. METHODOLOGY AND APPROACH

This article adopts a comparative and cross-disciplinary approach to examine how passive defence can be institutionalised within spatial policy, as a vehicle for urban resilience. It investigates how passive defence principles are operationalised through spatial policy using the two case studies as empirical anchors. The methodology combines conceptual framing, case study analysis, and analytical procedures. Importantly, this article seeks to build an explanatory understanding of how anticipatory resilience is institutionalised, rather than testing a hypothesis.

3. CONCEPTUAL FRAMING

This article is grounded in a conceptual framework that links urban resilience, anticipatory planning and passive defence. This framework was developed by systematically reviewing published literature in these three key domains:

- **Urban resilience theory,** particularly in terms of absorptive, adaptive and transformative capacities,
- **Anticipatory planning and foresight,** focusing on approaches that incorporate uncertainty and proactive risk management, and
- **Civil projection and military literature on passive defence**, with emphasis on principles translatable into spatial planning such as redundancy, dispersal and buffering.

The findings from this review were organized into an analytical matrix (Figure 4 in this article) that maps passive defence principles to specific resilience outcomes. This matrix was used as an analytical lens for examining planning interventions across the selected studies.

4. CASE STUDY ANALYSIS

Two studies were selected as illustrative examples to explore the application of passive defence in different contexts. These studies include:

1. Najran Province, Saudi Arabia: The authors were integrally involved in preparing the Najran Regional Plan, including the development of zoning regulations, flood management strategies and infrastructure redundancy measures. This involvement provided access to planning documentation, spatial datasets and decision-making processes, ensuring empirical data insights into the implementation and operationalisation of passive defence in a high-risk socio-economic context.

2. eThekwini Municipality, South Africa: Analysis drew on official planning instruments such as the Spatial Development Framework, which was supported by secondary literature and municipal reports. This case provides a contrast to the Najran Regional Plan, showing how passive defence measures are integrated in a context characterised by climate risk and social inequality. This case was investigated through documentary analysis and the spatial interpretation of planning layers, assessing how passive defence measures are institutionalised within statutory frameworks.

The two cases were selected because they represent distinct governance systems and hazard environments, allowing for a comparative assessment of how passive defence is embedded in spatial policy. The direct involvement of the authors in the Najran case provided a unique opportunity to integrate practitioner insight into this academic analysis. This strengthened the foundation of the study by enabling detailed documentation of planning measures as they were formulated.

The article employed multi-source data triangulation to enhance the validity of the case studies selected. This included:

TABLE 1 DATA SOURCES AND PURPOSE (AUTHOR, 2025)

Data Type	Source	Purpose
Primary Data	Najran Regional Plan, GIS Layers, Supportive Planning Documents	Identify spatial embedding of passive defence interventions
Secondary data	eThekwini Municipality SDF, bylaws, resilience strategies	Assess the integration of passive defence principles
Academic and Institutional Literature	Peer-reviewed articles, UN-Habitat and IPCC Reports	Theoretical grounding and global benchmarking
Comparative case documentation	Published examples from Japan, Netherlands, Colombia, U.S, Australia	External validation of applicability across contexts

5. ANALYTICAL PROCEDURE

The analysis of the cases was undertaken in three core ways:
1. In-case analysis: The cases were assessed individually, mapping planning instruments to passive defence functions and identifying their intended resilience outcomes.
2. Cross-case comparison: The cases were compared to identify convergence and divergence across geographies, risk typologies and planning mechanisms.
3. Global contextualisation: The cases were situated within a comparative review of international precedents to test conceptual transferability.

The planning instruments and interventions across both case studies were examined against the conceptual framework using four analytical categories
• Exposure reduction,
• Redundancy and continuity,
• Spatial buffering, and
• Risk Dispersal.
This structure enabled systematic comparisons between Najran Province and eThekwini Municipality.

6. ETHICAL CONSIDERATIONS

Ensuring methodological rigour in a comparative case study requires the establishment of confirmability and transferability. To achieve this, the article employs multiple mechanisms designed to strengthen the validity and analytical transparency.

1. Credibility was established through explanation building, where in-case findings were compared with theoretical expectations derived from literature, and divergences were interpreted rather than rationalised. For the Najran case, where the authors had direct involvement in the plan formulation, all analytical claims were rationalised through:
a. Peer verification with technical experts,
b. Cross-checking with approved planning outputs and associated policy instruments, and
c. Confirming that interpretations remained consistent with plan iterations.

2. Confirmability was strengthened through a triangulated evidence review. For the Najran Province case, findings were compared against institutionalised planning instruments and validated in consultation with experts in the field. All conclusions were thus anchored in verifiable records of institutional decisions rather than personal interpretation. For the eThekwini Municipality, document triangulation across existing planning frameworks, bylaws and literature served the same function.

3. Transferability was embedded in the article through descriptions of the institutional context and spatial conditions, allowing the article readers to understand and contextualise the applicability of the findings to other settings. Comparative references to global cases further situate the findings within an international frame of relevance.

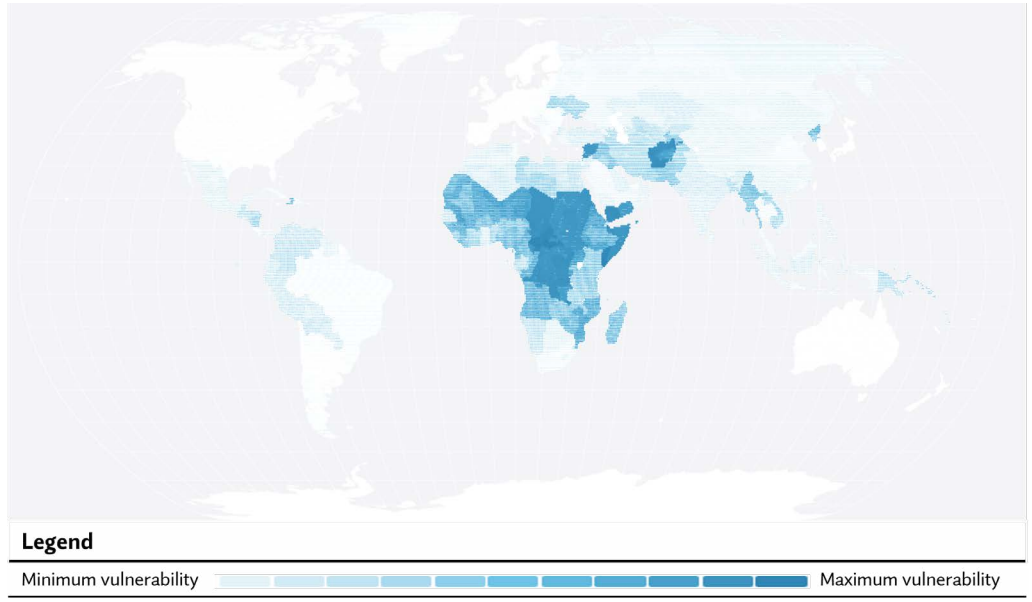

Figure 03 *Global socio-economic, political, demographic and environmental vulnerability (Climate-Conflict-Vulnerability Index, 2025)*

7. URBAN RESILIENCE ISSUES

Urban resilience issues rarely emerge in isolation; they accumulate and intersect, creating vulnerable urban systems where one issue magnifies another. While these resilience issues, such as climate change, population migration, conflict and instability and ageing infrastructure, manifest differently across contexts, they intersect to produce shared vulnerabilities that undermine the resilience of urban systems (UN-Habitat, 2024).

Climate change is one of the most visible resilience issues, amplifying the intensity and frequency of extreme weather events such as heatwaves, droughts, flooding and coastal erosion. In eThekwini Municipality, the April 2022 flooding events overwhelmed stormwater systems, displaced thousands of people, and disrupted port operations (Presidential Climate Commission, 2024). This event highlighted the uneven geographies of risk, as informal settlements along floodplains and unstable slopes bore the brunt of destruction. Similarly, the Najran Province faces recurrent flooding and droughts, where vulnerable ecological conditions, such as over-grazing and unmanaged aquifer extraction, magnify the impacts of climate disruption on communities already exposed to border-related tensions. Climate change stressors in both cases expose the way in which environmental hazards and socio-spatial vulnerability are inherently linked.

Population migration and rapid demographic growth compound these risks. Over time, the eThekwini Municipality has absorbed rural migrants from across KwaZulu-Natal and economic migrants from neighbouring

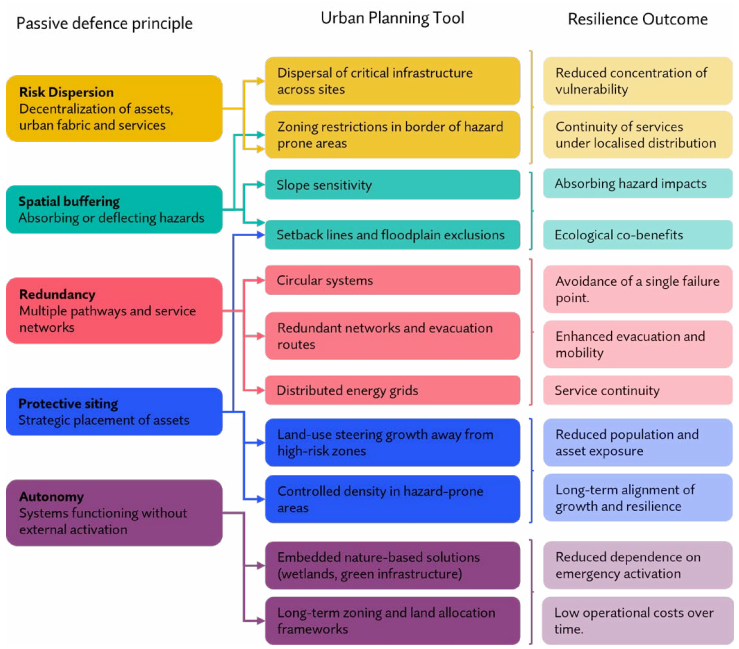

Figure 04 *Passive defence principles mapped to resilience outcomes (Author, 2025)*

countries, accelerating informal settlement growth in hazard-prone peripheral areas such as floodplains and unstable slopes (Ngcamu, 2011). The growth of these settlements often outpaces infrastructure and service provision, creating areas of acute and compounding risk. Similarly, the Najran Province has been shaped by cross-border population flows from Yemen, where instability and conflict have prompted population migrations that strain housing, water, and service systems. Both cases highlight how population migration intersects with environmental pressures to compound vulnerability.

Conflict and geopolitical instability introduce another layer of complexity. For the Najran Province, proximity to the Yemeni border has necessitated defensive planning, with passive defense measures such as the dispersal of critical infrastructure and reinforcement of public buildings. While eThekwini Municipality is not directly exposed to geopolitical conflict, it faces spatial instability rooted in social inequality and community violence, which in turn undermines governance and complicates coordinated resilience planning.

Finally, ageing and overstretched infrastructure undermine both cases' ability to withstand shocks. In eThekwini, water and sanitation networks are already undermined by torrential storm surges, leaving communities vulnerable to cascading failures. Similarly, in the Najran Province, road systems and utilities designed for smaller populations struggle to accommodate rapid growth while supporting emergency logistics. These structural weaknesses amplify the impacts of external shocks, turning hazards into prolonged crises.

These pressures demonstrate why urban resilience must move beyond the narrow idea of "bouncing back." Instead, resilience demands the capacity to absorb shocks, adapt to chronic stresses, and transform structural vulnerabilities while safeguarding lives and livelihoods. For eThekwini, this means tackling the dual challenge of climate extremes and entrenched socio-spatial inequality. While for the Najran Province, resilience hinges on navigating environmental fragility in parallel with geopolitical insecurity. In both cases, embedding passive defence within spatial planning offers a strategic pathway to institutionalise resilience within the urban fabric.

8. HOW IS THE INTENT OF PASSIVE DEFENCE STRATEGIES ALIGNED TO URBAN RESILIENCE?

At its core, passive defence aims to reduce vulnerability and limit exposure to crises through spatial logic and infrastructural foresight, embedding resilience into the urban fabric before hazards occur (Kadkhodayi, M., Hafez Rezazadeh, Masume and Karimi, 2021). The concept emerged from military strategy and civil protection, where it was used to minimise damage to key assets by reducing visibility, dispersing risk, and complicating offensive targeting. When translated into spatial planning, these principles become spatial tools and include buffer zones that absorb floods, setback regulations that protect coastal areas, redundant infrastructure that prevents cascading failures, and controlled development patterns that guide settlement away from hazard-prone land. Unlike reactive responses, these measures are embedded safeguards that operate continuously, quietly strengthening resilience in the urban fabric.

The alignment between passive defence and urban resilience is clear in their shared intent:

- **Enhancing response capacity** through redundancy in infrastructure, such as circular water systems or alternative road networks that prevent isolation.
- **Limiting hazard spread and impact** via spatial distancing, zoning restrictions, and protective land-use design that contain risks before they cascade.
- **Safeguarding critical assets and populations** by strategically siting infrastructure, decentralizing essential services, and protecting vital urban centres.

Not all passive defence principles translate directly into spatial planning, yet several offer compelling applications: avoiding development in floodplains, unstable slopes, or conflict-adjacent areas; regulating density in high-risk zones to ease evacuation; ensuring equitable service coverage across all neighbourhoods; and embedding redundancy into water, energy, and transport systems to avoid single points of failure. These strategies transform resilience from a reactive posture into a structural condition of the urban fabric itself.

These strategies are inherently proactive. They do not require activation during a crisis but instead function as embedded safeguards, buffering

cities from shocks and enabling continuity. In contrast to active defence, which is reactive and resource-intensive, passive defence is quietly resilient, offering planners a strategic and ethical approach to managing urban risk.

TABLE 2 COMPARISON OF ACTIVE AND PASSIVE DEFENCE APPROACHES (AUTHOR, 2025)

Dimension	Active Defence	Passive Defence
Key Characteristics	• Event-driven • Relies on institutional response and capacity • Short term-effectiveness • Crisis-specific	• Embedded in spatial form and land use. • Functions autonomously • Long-term, structural resilience
Examples	• Emergency evacuation and relief • Defensive barriers • Firefighting, flood pumping, crisis logistics.	• Buffer zones and exclusion areas • Coastal setback lines • Redundancy in infrastructure systems
Indicative costs	• High financial and operating costs (equipment, logistics) • Maintenance and resource-intensive • Cost spike during crisis events.	• High upfront planning and cost • Low operational and maintenance cost over time • Scalable across governance and income contexts
Temporal dimension	• Short, episodic intervention • Effectiveness diminishes post-event	• Continuous • Benefits accumulate over time
Planning implications	• Reactive management focus • Specialised crisis institutions and coordination • Limited long-term integration with urban form.	• Institutionalised through policy • Cross-sectoral coordination, embedded in planning frameworks • Aligns resilience with equity and sustainability
Limitations	• Resource-dependent • Effectiveness constrained by institutional and logistic capacity • Failure under concurrent or cascading crises	• Less visible in political cycles (however benefits are long-term) • Requires strong governance and enforcement to prevent risk accumulation

9. WHY SPATIAL POLICY IS THE BEST WAY TO INCLUDE PASSIVE DEFENCE STRATEGIES STRATEGIES ALIGNED TO URBAN RESILIENCE?

Spatial policy is the most effective entry point for embedding passive defence into urban resilience because it shapes the long-term fabric of cities. As both a regulatory instrument and a normative framework, spatial policy determines how land is allocated, how infrastructure is distributed, and how urban form evolves. This gives it the necessary power to transform passive defence from isolated interventions into structural conditions.

Unlike emergency management, which is reactive and event-driven, spatial policy is anticipatory by design. Through zoning, land-use regulation, and infrastructure planning, it allows planners to pre-empt risks, steering development away from hazard-prone areas, embedding redundancy in service networks, and institutionalising protective measures in everyday urban governance. In this way, passive defence principles become part of the city's routine logic, not ad hoc responses to crisis.

Spatial policy also provides the cross-sectoral coordination that passive defense requires. It is one of the few policy arenas where environmental planning, infrastructure investment, housing provision, and risk management converge under a unified framework. This integrative function is critical: defensive buffers, decentralized utilities, protective zoning, and redundancy in transport systems all demand alignment across sectors that spatial policy is uniquely equipped to deliver.

Global experience demonstrates both the value and the cost of spatial policy. In the Netherlands, elevation-based zoning and extensive flood buffers have embedded water resilience into national spatial planning, making the country a global exemplar of anticipatory defense (Brand & Zonneveld, 2021). In stark contrast, the 2020 Beirut port explosion revealed the catastrophic consequences of weak spatial regulation, where hazardous materials were stored adjacent to dense urban areas (Landry, et al., 2020). These cases highlight the stakes: when risk reduction is embedded in spatial frameworks, cities gain resilience; when it is absent, vulnerability becomes systemic.

By embedding passive defense into spatial policy, cities move beyond short-term crisis response toward structural resilience. This approach not only reduces exposure and ensures continuity but also advances broader planning goals such as equity, sustainability, and adaptive capacity. In this sense, spatial policy is not just a technical tool, but a strategic lever for designing cities that are safer by intent, not by accident.

10. HOW CAN PASSIVE DEFENCE STRATEGIES BE APPLIED IN SPATIAL PLANNING?

10.1. CASE STUDY IN KSA (NAJRAN)

Najran Province, located on Saudi Arabia's southern border with Yemen, is a frontline region where geopolitical insecurity and climate change fragility intersect. Its landscape stretches from the Sarawat Mountains, with seasonal wadis along the linear settlement patterns, to the vast and unpopulated Rub' al Khali desert. This geography, combined with rich cultural and natural heritage, including two UNESCO World Heritage Sites, characterises a Province of both historic significance and contemporary vulnerability.

Najran City, the provincial capital, sits just kilometres from the border and

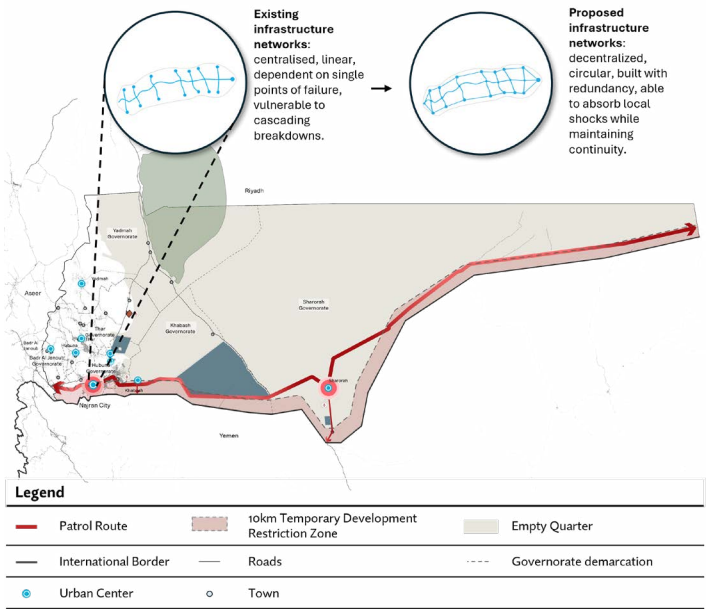

Figure 05 *Najran Regional Plan illustrates passive defence principles (Author, 2024)*

has borne direct impacts from the Yemeni conflict. Cross-border hostilities have disrupted trade, tourism, and service provision, while episodes of aerial bombardment have heightened exposure to geopolitical shocks. At the same time, flash floods from the western mountains have caused casualties and infrastructure damage, underlining the environmental risks that compound the province's position. These pressures make Najran a critical site for passive defence strategies.

In response to the dual pressures of geopolitical risk and environmental vulnerability, Najran's spatial planning framework has incorporated a series of passive defence strategies aimed at reducing exposure and enhancing urban resilience. These interventions are embedded in land use regulation, infrastructure design, and development control mechanisms.

• **Border Buffering:** A 10-kilometre buffer zone along the Yemeni border zones for agriculture and low-density uses, dispersing population concentration away from high-risk areas. This zoning approach serves to limit population concentration in high-risk areas while preserving land for productive, non-residential functions. Within this, a strict 1-kilometre no-development strip provides a protective margin against cross-border threats.

• **Flood Mitigation:** Wadi corridors, historically sites of settlement, are now zoned as exclusion areas. Retained as open space and green infrastructure, they reduce flood risk, preserve ecological functions and enhance the provision of nature-based solutions.

• **Infrastructure Redundancy:** Najran is introducing circular water distribution systems, ensuring service continuity even if one segment is disrupted. Multiple entry and exit points in linear urban developments, supported by additional wadi crossings, safeguard mobility and prevent isolation during emergencies.

These interventions reflect a layered defense strategy: dispersing risk at the border, redirecting growth away from flood corridors, and embedding redundancy into lifeline systems. They are inherently anticipatory, designed to function autonomously as part of everyday urban structure rather than in reaction to crisis.

While still in its early stages of implementation, the Najran Province demonstrates how passive defence can be operationalised through spatial policy to support urban resilience. The border buffer disperses population risk, the wadi exclusion zones pre-empt flood losses, and the circular infrastructure model ensures continuity under stress. Combined, they form a spatially integrated system that aligns with global resilience principles while responding to local realities. Future monitoring and adaptive governance will be essential to ensure these strategies evolve with changing threats and urban dynamics.

10.2. CASE STUDY IN SOUTH AFRICA (ETHEKWINI MUNICIPALITY)

The eThekwini Municipality, encompassing the major port city of Durban, demonstrates how passive defence principles can be systematically embedded in a developing city context characterised by rapid population growth and climate change vulnerability. Durban faces multiple climate risks, including flooding, coastal erosion, sea-level rise, storm surges, and heat stress (Urban Earth, 2022). These risks intersect with legacies of spatial inequality, where large segments of the population live in informal or precariously located settlements. As a result, eThekwini has adopted an anticipatory approach that seeks to prevent risk accumulation, rather than relying solely on reactive disaster responses. This anticipatory approach includes:

• **Durban Metropolitan Open Space System (D'MOSS):** An ecological network that secures wetlands, river corridors, and flood-prone areas within a protected open-space system (Boon, 2025). By prohibiting development in these zones, D'MOSS provides a natural buffer against flooding and stormwater overflow, functioning as a passive defence that reduces risk exposure while simultaneously conserving biodiversity (Boon, 2025).

• **Coastal Management Bylaw:** Enforces scientifically determined coastal setback lines, preventing construction in erosion- and inundation-prone areas. This regulation ensures that high-value infrastructure and housing are not sited in high-risk zones, thereby embedding risk reduction into the spatial makeup of Durban's coastal development. The bylaw represents

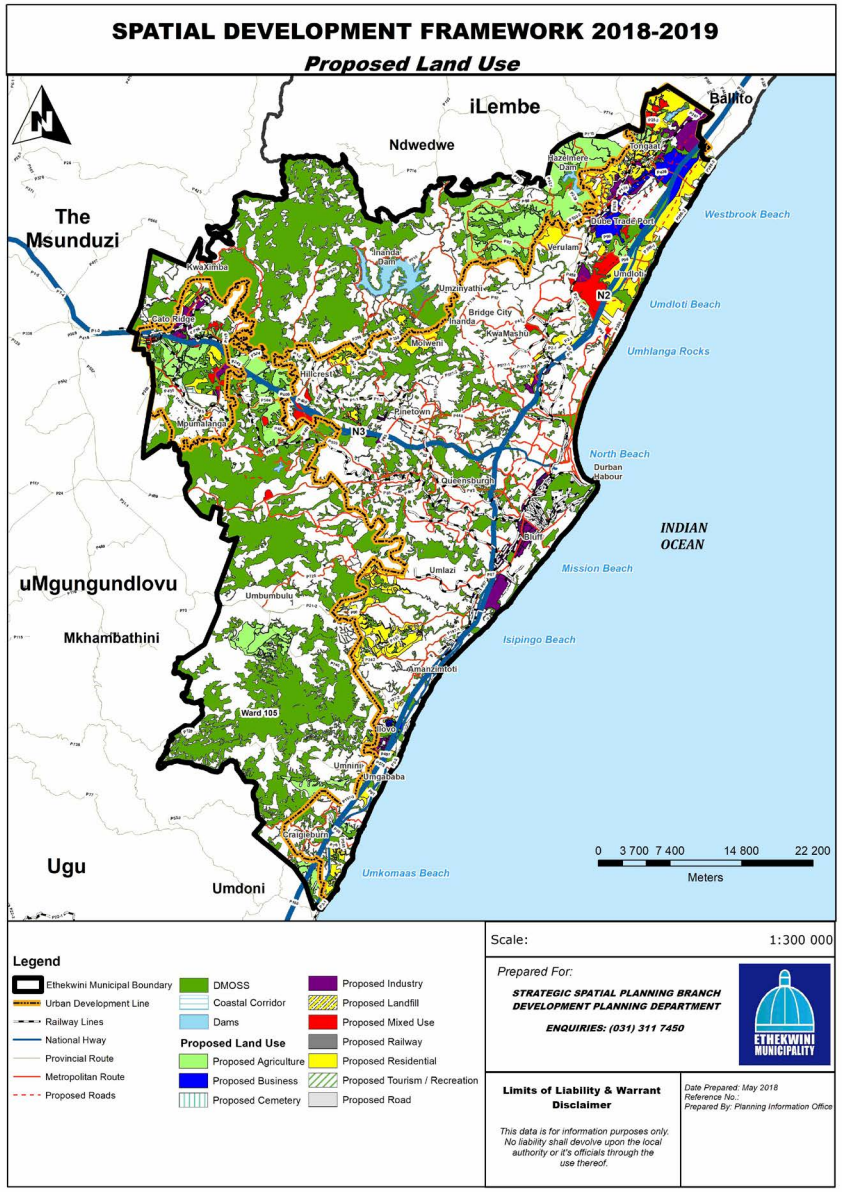

Figure 06 *eThekwini Municipal Spatial Development Framework includes the D'MOSS Layers (eThekwini Municipality Development Planning Department, 2018)*

a proactive approach that shifts responsibility from emergency relief to pre-emptive avoidance, consistent with the anticipatory ethos of passive defence.

eThekwini's integration of passive defense into spatial policy also reflects a strong social equity dimension. By protecting ecologically sensitive areas and discouraging settlement in high-risk zones, while simultaneously creating pathways for serviced land provision elsewhere, the municipality attempts to balance environmental resilience with the urgent need for affordable housing and urban inclusion. This dual focus acknowledges that resilience cannot be achieved solely through prohibition, but requires enabling safer patterns to accommodate growth.

The institutionalization of passive defense principles into land-use policy, environmental regulation, and municipal bylaws allows resilience strategies to extend across timeframes and political cycles. This creates continuity in protection for vulnerable populations and critical assets, ensuring that resilience is not dependent on temporary programmes or shifting leadership priorities.

eThekwini therefore demonstrates how a developing city with complex socio-economic pressures can operationalize passive defense through spatial policy. By embedding anticipatory regulations into the structure of growth, the municipality is not only reducing exposure to hazards but also aligning resilience with broader goals of ecological sustainability and social equity.

10.3. OTHER APPLICATIONS

Beyond the cases demonstrated in Najran Province and the eThekwini Municipality, passive defence principles have been applied in a number of global contexts, reflecting their adaptability across geographies and climate hazards. The examples listed below from Japan, the Netherlands, Colombia, the United States and Australia demonstrate how anticipatory spatial planning can institutionalise resilience without reliance on continuous operational inputs.

In Japan, seismic risk is addressed through a dual system of spatial zoning and robust building codes (Jafarpour Ghalehteimouri, 2024; Karashima, 2023). High-risk seismic zones are subject to stringent restrictions, while construction standards are designed to absorb shock and minimise collapse during earthquakes. These measures, embedded into planning law and development control, function as passive defence by reducing exposure and ensuring structural redundancy. The result is a significant reduction in casualties and infrastructure losses, even during large-scale seismic events.

The Netherlands offers another example, where flood management has long relied on spatial buffers, setback regulations, and controlled land reclamation (Oukes, Leendertse, & Arts, 2022; Klijn, Asselman, & Wagenaar, 2018). The national strategy of "Room for the River" illustrates how spatial planning can accommodate natural hazards rather than resist them, prioritising open space, flexible zoning, and elevation-based development controls. By embedding water as a structuring element of urban form, the Netherlands institutionalises resilience through spatial arrangements rather than reactive infrastructure.

In Colombia, particularly in hillside settlements such as Medellín, passive defence has been employed against landslide risks (Kuhl, Sapena, Wurm, Geiß, & Taubenböck, 2023; Sotomayor, 2017). Slope-sensitive zoning frameworks restrict informal expansion into geotechnically unstable areas, while green infrastructure such as vegetation buffers and terracing stabilise slopes and reduce run-off. These measures balance ecological processes with settlement control, functioning as a passive layer of protection in contexts where rapid urbanisation and informality present significant governance challenges.

Similar applications of passive defence principles can be seen in the United States, where wetland protection policies restrict development in flood-prone zones and establish setback lines from rivers, lakes, and coastal areas (Nichols & Bruch, 2008). By safeguarding natural floodplains as open spaces, these regulations limit exposure to hurricanes and storm surges, relying on ecological buffers to absorb impacts. Such land-use controls institutionalise natural terrain coverage as a form of hazard mitigation.

In Australia, bushfire-prone regions have adopted land-use strategies that incorporate spatial firebreaks, controlled vegetation zones, and redundant road networks (Ruane, Swapan, & Babb, 2020). These measures ensure that risks are decentralised and that evacuation remains possible under emergency conditions. Here, passive defence is not about stopping fire outright but embedding resilience into the landscape and settlement form through anticipatory planning and infrastructure redundancy.

These examples highlight the versatility of passive defence as a spatial planning instrument. While the specific hazards and interventions vary, from earthquakes and floods to landslides and wildfires, the underlying approach remains consistent: reduce exposure, decentralise risk, and integrate resilience into the physical and regulatory fabric of cities. Importantly, these strategies are not limited to high-income contexts; they can be adapted to informal settlements, transitional governance systems, and resource-constrained environments.

11. CONCLUSION

As cities confront an increasingly volatile risk landscape, shaped by climate disruption, rapid urbanisation, migration, geopolitical tension, and infrastructural fragility, the relevance of passive defence strategies in urban planning has never been more apparent. These anticipatory, low-maintenance interventions provide a practical and scalable means of embedding resilience into the spatial structure of cities, reducing exposure and safeguarding critical systems without reliance on reactive emergency mechanisms.

Spatial policy is a strategic entry point for institutionalising passive defence. Through zoning, land-use regulation, and infrastructure planning, planners can pre-emptively shape urban environments in ways that mitigate risk, disperse vulnerability, and maintain continuity of critical services. Unlike operational or short-term responses, spatial policy operates across timeframes, sectors, and governance cycles, embedding resilience into the very fabric of urban development.

Case studies from Najran and eThekwini demonstrate how these principles can be operationalised in diverse contexts. Border buffers, wadi exclusion zones, and circular infrastructure networks in Najran reduce exposure to geopolitical and environmental threats, while open-space networks, coastal setback regulations, and cross-sectoral zoning in eThekwini protect populations from flooding, erosion, and infrastructural disruption. Global examples—from Japan's seismic zoning and the Netherlands' "Room for the River" initiative to Medellín's slope-sensitive planning, U.S. wetland protections, and Australian firebreak strategies—underscore the adaptability of passive defence across hazards, geographies, and institutional capacities.

This synthesis highlights passive defence not merely as a technical tool but as a normative planning approach. By mainstreaming these principles into spatial policy, cities can transition from vulnerability to resilience—quietly, effectively, and inclusively. Further research and policy reform are needed to operationalise passive defence in informal settlements, transitional governance systems, and post-conflict regions. In a world of compounding risks, passive defence provides a pathway to cities that are resilient by design, rather than reactive by necessity.

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