

Re:Design Elin Pelin.

Modern small cities increasingly face a complex set of interconnected challenges: deterioration of infrastructure, rising traffic loads, environmental risks, water scarcity, and declining quality of urban life. The city of Elin Pelin is a clear example of this condition. Its proximity to logistics hubs, warehouses, and major transport routes has led to intensive heavy-vehicle traffic, aging engineering systems, and growing safety and ecological concerns.

This competition project proposes a comprehensive, multi-layered urban transformation strategy for Elin Pelin. Rather than focusing on superficial beautification, the project addresses the root causes of infrastructural failure and environmental stress. It integrates engineering resilience, ecological sustainability, social inclusivity, and cultural identity into a single, coherent vision aimed at creating a safe, durable, and future-oriented urban environment.

1. Addressing the Primary Infrastructure Problem: Road Degradation

The city's most pressing issue is the rapid deterioration of road infrastructure caused by constant heavy-duty truck traffic. To resolve this, the project introduces a three-layer road construction system:

Three-Layer Construction:

The first layer consists of a stone base (crushed stone).

The second layer involves placing steel reinforcement bars (rebars) or a metal grid across the road.

The third layer is a pour of high-strength concrete. The concrete provides a durable exterior, while the internal steel grid reinforces the structure to hold the road together.

in addition

Protective Barriers:

Elevated curbs (ledges) should be installed between the vehicle lanes and the pedestrian walkway.

Heat Protection:

By painting these side barriers white, they will reflect sunlight. This prevents the road from overheating and melting under the sun's influence.

Benefits: This construction is durable and cost-effective. Significantly extended road lifespan. Reduced maintenance and repair costs. A 30–40% reduction in air pollution by eliminating asphalt melting and toxic emissions

It addresses the air pollution issue by reducing toxic emissions by 30-40%, as it eliminates the possibility of toxins being released from melting asphalt.

2. Preventing Soil Erosion and Infrastructure Failure

A second major cause of road collapse is soil erosion, resulting from leaking, low-quality underground pipes. The project proposes:

Replacing existing pipes with systems made from a specialized iron–aluminum alloy, offering high strength and corrosion resistance.

Reorganizing rainwater flow so that runoff is directed to building façades where it irrigates climbing vegetation.

These vertical green systems:

- stabilize the urban microclimate,
- trap dust and airborne pollutants,
- transform utilitarian infras

The second problem, and another reason for road failure, is erosion. Due to poor pipe quality, water leaks into the soil, causing erosion that softens the ground. This weakened soil cannot support the weight of heavy trucks carrying materials, causing the road to collapse. By eliminating pipe leaks, the ground will remain solid, making the road significantly more durable.

the solution

Eco-Infrastructure and Materials: First, we can grow vines on the walls of houses and change the composition of pipes, making them from a specialized iron-aluminum alloy. The pipes can be positioned so that rainwater is directed onto the vines to water them. These vines will also act as a natural filter by collecting dust and pollutants.

Maintenance and Sustainability (Zero Waste): Second, when the vines become too long or overgrown, the lower parts can be trimmed, thoroughly cleaned, and processed for further use. This approach is called "Zero Waste Style

1. the third problem in the city of Elin Pelin is the threat of explosions in storage facilities and warehouses

To prevent future explosions at pyrotechnics warehouses, we can implement a multi-layered protection system around the facilities:

The Outer Shield (Earth): The first layer of protection will consist of two earth walls (embankments). Earth is highly effective at absorbing shockwaves. We will leave an empty space between these two earth walls.

The Reinforced Core (Concrete & Alloy): We will fill the internal space with a two-layer concrete wall:

The first stage is a framework of metal rods made from a specialized steel-aluminum alloy. The steel provides structural hardness, while the aluminum ensures corrosion resistance.

The second stage is pouring high-strength concrete over these rods.

The Eco-Filter (Nature): As a third layer, we can plant vines (climbing plants) on the outer earth walls to create a "jungle and mountain" aesthetic. These vines will act as a natural filter, absorbing all the dust and particulates.

Conclusion: This solution not only contains the force of a potential explosion but also addresses air quality by capturing dust through vegetation.

Water-scarce environment

Implementation of Small Architectural Forms (SAF)

Integration of compact water features into the urban fabric.

Dry Deck Fountains (Pedestrian Fountains): An ideal solution for small towns. These systems do not require dedicated basins, saving space while creating an interactive environment and improving the microclimate.

Drinking Fountains: Functional small-scale elements that provide public utility and activate social spaces.

Wall-mounted Fountains and Cascades: Space-efficient vertical water features that create a pleasant acoustic background, effectively masking urban noise

Rain Garden Principles

Eco-friendly stormwater management as a design element.

Bioretention Swales: Landscaped depressions designed to collect and filter runoff. They function as aesthetic flower beds during dry periods and transform into temporary streams during rainfall.

Retention Basins: Open-air water storage systems integrated into the landscape design, enhancing local biodiversity.

High traffic volume

Practical Solution Plan: Infrastructure Optimization

2-Level Interchanges (Economy Design): Instead of complex bridges, use simple overpasses at the most dangerous intersections. This keeps the traffic moving without expensive tunnel systems.

The External Ring Road (Bypass): A heavy-duty gravel or asphalt detour around the city. It doesn't need to be fancy; it just needs to keep the trucks away from the city center.

High-Capacity 5-6 Lane Corridors: Widening the main entrance roads. This allows for dedicated "Truck Lanes" so that slow freight doesn't hold up the rest of the city.

Passive Weight & Height Barriers: Installing physical limiters before the city entrance. This naturally forces heavy trucks to take the bypass road without needing expensive digital police or cameras.

Natural Sound Barriers: Using earth mounds (soil embankments) and local trees along the roads. This is a "zero-cost" way to block noise using the dirt left over from road construction.

Once these core infrastructure issues are resolved, we can focus on urban aesthetics and enhancing the community's sense of safety

The Aesthetic Fusion

"Retro-Futurism: A bold synergy of 90s industrial heritage and cutting-edge modern infrastructure."

Biophilic Design (Jungles & Vines)

"Vertical Ecosystems: Transforming building facades with climbing vines and hanging greenery to create a 'City in the Jungle' effect."

Psychological Color Palette

"Therapeutic Environments: Implementing a calming color spectrum designed to reduce urban stress and promote mental well-being."

Modern Lifestyle Hubs

"Social Oases: Developing eco-friendly shopping malls and public spaces that blend nature with modern commerce."

THE ANIMALIA SANCTUARY

1.DEDICATED PET HABITATS

"Innovative Hubs: Climate-controlled, glass-walled mini-ecosystems for cats and dogs, integrated into safe public spaces."

THERAPEUTIC COMFORT

"Interior Serenity: Utilizing calming color palettes and heated flooring to reduce stress and ensure animal well-being."

INTERACTIVE DESIGN

"Interactive Joy: Panoramic windows allow citizens to observe animal play, fostering empathy and improving mental health."

TOTAL INCLUSIVITY

"Safety for All: Extending design priorities to protect every four-legged resident, ensuring they have a warm and secure home."

THE SHOP FOLKLORE PLAZA

THE HORO ARENA (TRADITIONAL DANCE FLOOR)

The Heart of Movement: A circular open-air stage designed specifically for the 'Shopski Horo'. Built with high-durability materials to withstand the energy of the region's fastest traditional dances.

THE ORNAMENTAL ARCHIVE (PATTERN WALLS)

Educational Facades: Flanking the dance floor are two monumental 'Pattern Walls.' These showcase intricate 'Shevitsa' designs with detailed descriptions of their symbolic meanings and historical origins.

THE ELIN PELIN HISTORY HUB

Cultural Museum: A boutique museum space documenting the city's evolution, from its founding legends to its 20th-century industrial growth and its future 'Jungle' transformation.

THE AUTHENTIC SHOP BOUTIQUE

Preserving Craft: An on-site retail space dedicated to traditional Shop attire. It supports local artisans and allows residents to wear their heritage with pride.

THE INTERACTIVE CITY ATLAS

Legacy Mapping: A permanent, large-scale map of Elin Pelin integrated into the plaza, highlighting historical landmarks alongside new safety and 'Cat Hub' locations.

This competition proposal presents a holistic, realistic, and forward-looking vision for the transformation of Elin Pelin. Infrastructure, ecology, safety, culture, and social well-being are treated as interconnected systems rather than isolated problems.

The city is reimagined not merely as a reconstructed urban center, but as a model of a resilient, sustainable European small city, capable of adapting to modern challenges while preserving its unique cultural identity and human-centered values.