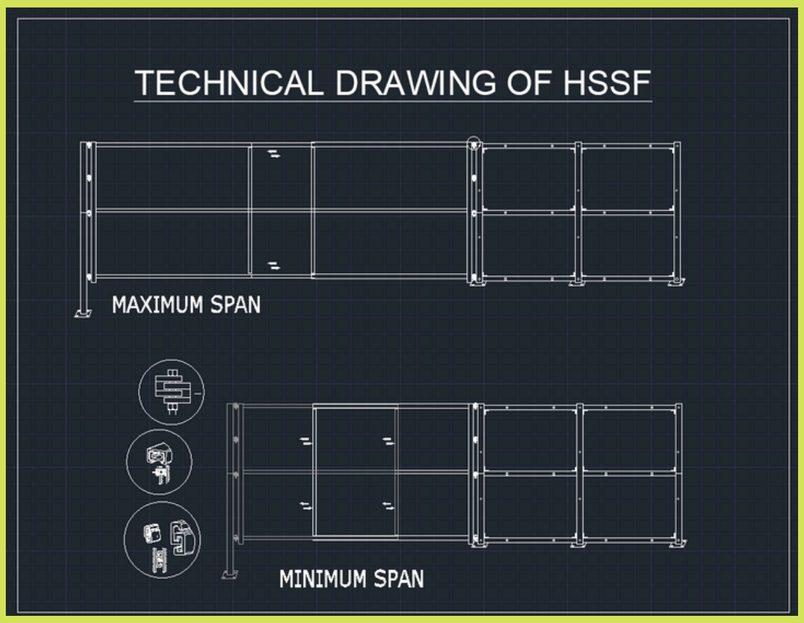
HIGH SECURITY SEISMIC FENCE

DESIGN FACTS AND DETAILS

1 INTRODUCTION

This design is a high-security seismic fence intended to be used in earthquake-isolated buildings at the boundaries between the structure and the ground, specifically in gaps and sliding bridges for pedestrian and vehicle crossings. It maintains structural integrity and security even during seismic activity.



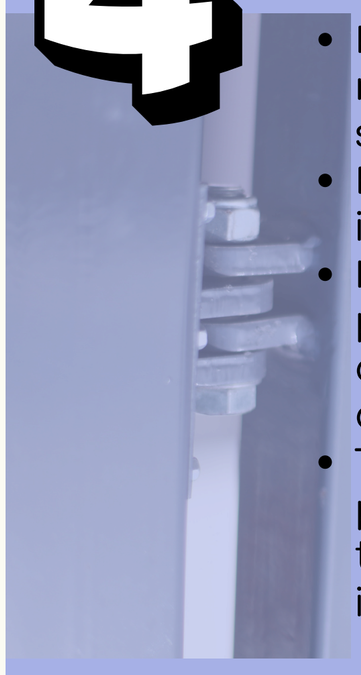
2 EXISTING APPLICATIONS AND DEFICIENCIES WORLDWIDE

- Earthquake isolation technology, involving seismic isolators made of rubber and metal, is designed to separate the movements of the ground from the building through sliding supports. This approach prevents ground movement from being directly transferred to the structure.
- Although there are examples worldwide of flexible connections used in static, electrical, and mechanical installations within buildings to accommodate seismic movements, solutions for securing building perimeter gaps and sliding pedestrian/vehicle bridges are limited and often incompatible.

3 DESIGN PHILOSOPHY

This design avoids unusual structures that might provoke fear of earthquakes and instead integrates aesthetically pleasing, familiar architectural details. It discreetly incorporates seismic-compatible functionality that ensures occupant safety without evoking a constant reminder of seismic threats.

4 TECHNICAL DETAILS AND DESIGN PRINCIPLES



- Primarily designed for security, this high-security seismic fence can be used in high-risk areas requiring anti-vandalism features. It is unclimbable, prevents intrusion by small objects or animals, and withstands structural stresses during seismic events.
- Existing fence solutions worldwide often have large gaps, allowing climbing and intrusion, and lack interconnection during seismic events, thus posing safety risks.
- In this design, the fence panels are interlocked with telescopic profiles, allowing the panels to expand and contract during seismic events. Additionally, hinged connections accommodate rotational movements, allowing for both axial and circular displacements during earthquakes.
- This design is compatible with local materials and manufacturing practices, easily producible in standard facilities. As it does not require special materials or techniques, it poses no additional financial burden. However, patent protections are in place to safeguard the designer's rights.

5 SUMMARY & CREDITS

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This design, developed by Civil Engineer Ozan Pınar, author of "Seven Key Features of Earthquake-Isolated Buildings," emerged during the construction of Kartal Dr. Lütfi Kırdar Training and Research Hospital, a 320,000 m^2 project featuring 850 seismic isolators. The hospital is a pioneering example in Turkey, hosting numerous experimental and academic studies related to earthquake-resistant buildings. It opened to the public in 2019, with Ozan Pınar serving as the Technical Project Manager..