

Use of *stainless steel* and *zero-stress design*SM produces elegant, stronger, lighter and safer buildings

John Mclean, RA, AIA, Architect and Industrial Designer, presented his revolutionary vision for a new architecture to the SSINA members at its Market Development Meeting in Alexandria, Washington, DC, on April 10th.

McLean's approach to design uses stainless steel exclusively as the building material of choice. More specifically, stainless steel and water are the principal structural materials, and the basis for his concept of *zero-stress design*SM. Architectural drawings and models expressed his vision for this revolutionary architectural approach that uses stainless steel to produce an elegant, stronger, lighter and safer building. An additional benefit of the stainless steel *zero-stress structure*SM is that the structural elements form the finished face of the entire structure.

McLean demonstrated the strength of a structure using *zero-stress design*SM, with a unique test model, and then proceeded to analyze the individual components of the structural model he was proposing.

This new type of building results in a higher strength capacity, than can be realized with carbon steel. *Zero-stress design*SM, eliminates compressive stress, with the result that the maximum structural strength of stainless steel is always tapped.

The unique characteristics of *zero-stress design*SM are:

A stronger and lighter structure that uses stainless steel's unique properties to the maximum.

A structure that is inherently fire-resistant.

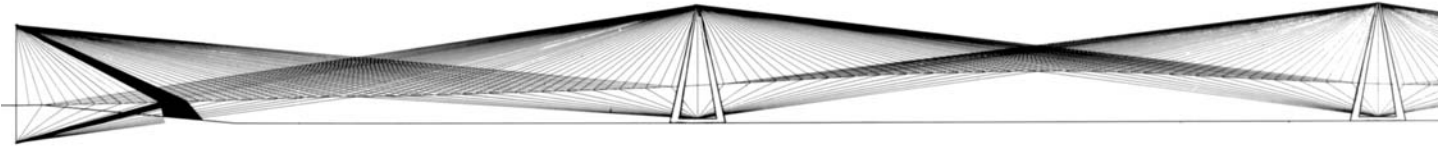
A structure that is corrosion resistant.

A structure that is resilient to seismic shock.

A structure in which the effects of temperature change can be controlled to suit the desired design parameters of the project.

McLean presented a new type of tension bridge, based on *zero-stress design*SM, capable of great spans; a different kind of tall building, that is efficient and not massive; and a new building type, which he called the "horizontal skyscraper". The tragic events of September 11th when analyzed reveal that stainless steel, coupled with *zero-stress design*SM, should be the exclusive building material of the 21st century and not merely a premium material.

The need to reconstruct our infrastructure, worldwide, can prove to be the opportunity of the century. Stainless steel as used in *Zero-stress design*SM is the *avant-garde* in architecture that can launch stainless steel as the building material of the 21st century.



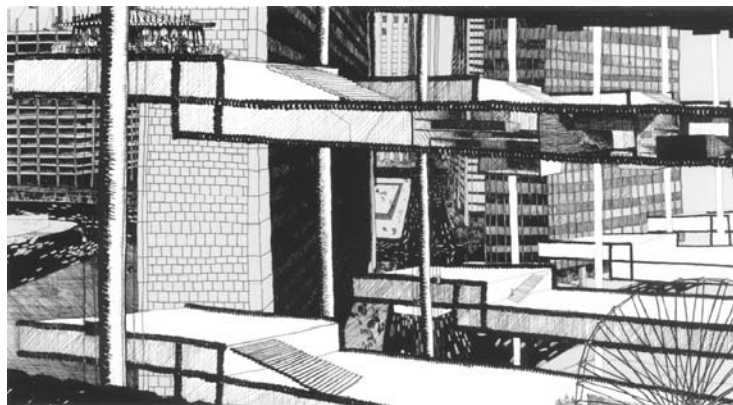
Tension Bridge

Each span of this continuous-tension bridge is three miles long. Spans are supported by zero-stress towersSM.



Mile-high skyscrapers

The practicality of tall structures is not a structural problem with zero-stress designSM, but rather a spatial concept and a matter of public policy. The upper portions of the skyscrapers are well suited for telecommunications, entertainment and tourism, and the lower levels for human activities.



The horizontal skyscraper

Conversely, the concept of the horizontal skyscraper fragments the building mass and decentralized the demand on space and the infrastructure. The characteristics of zero-stress designSM lend themselves to such applications as this urban housing complex. This horizontal skyscraper is a series of spanning units, each containing twenty residences. The housing spans, or bridges, are zero-stress beams or trussesSM which are supported by zero-stress columnsSM.