

## Towards Zero Energy Buildings and Communities

### The Museum of Taichung City

With intense global demand for sustainable innovations, architects keep pushing technologies to conserve energy and to increase efficiency. Toronto-based design firm LOH ARCHITECTS recently focused their research on two competition schemes that explored the relationship between architecture and energy sustainability: an urban museum with an observation tower, and a precinct master plan, both situated on an expansive site in Taichung City. The design team explored opportunities that would take advantage of the site's unique position over an active geothermal source to derive energy, aiming for zero energy buildings and communities.

The proposed \$220-million museum complex will comprise exhibit halls of approximately 150,000 square feet in area, administrative offices of about 110,000 square feet, and an iconic 1,800-foot-tall observation beacon. The development precinct comprises an educational campus, research park and a residential district.

The museum will explore the city's past, present and future, and celebrate how the city enhances the lives of its citizens through healthy sustainable growth. Themed exhibits trace the city's evolution and illustrate the idea that future dreams are linked to its past, its distinct sense of place and the quality its environment.

*"The museum will show visitors that cities do not just happen, but they are designed to happen..."*, says Joseph Loh, lead design architect, *"...and people will be committed to making healthier cities through an understanding of how the environment affects them."*

The core of this design is to think of architecture as a natural living system that will harness energy resources from the earth, sun and atmosphere and use it to power buildings and communities, and the many activities that take place within them.

Architecture is grounded by land and earth, and every location has its unique opportunities. By taking advantage of various energy differentials that can be created or harnessed, such innovations can be amplified and shared with larger-scaled campuses and neighborhoods, planting the roots for a net zero energy community and city.

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