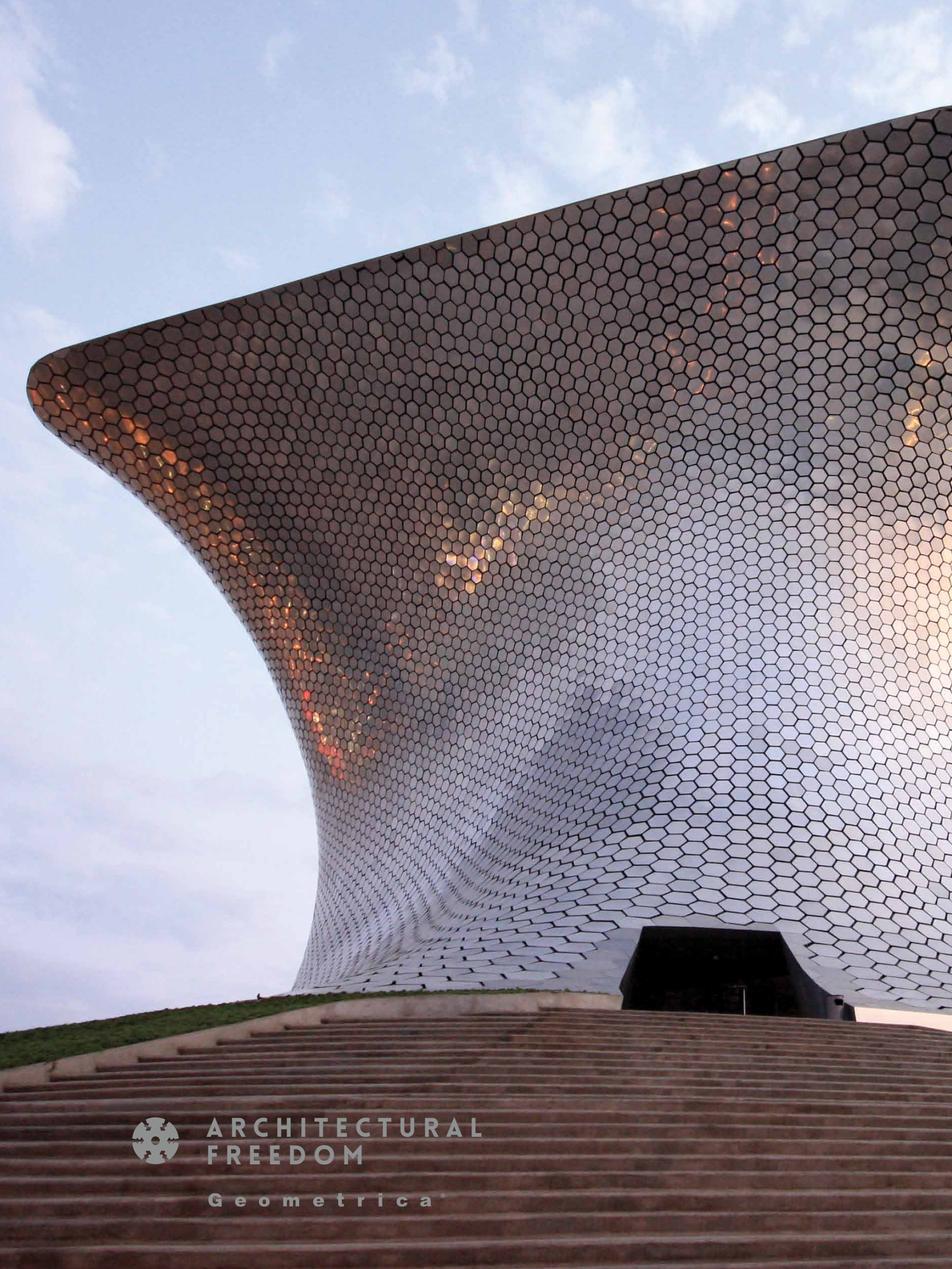
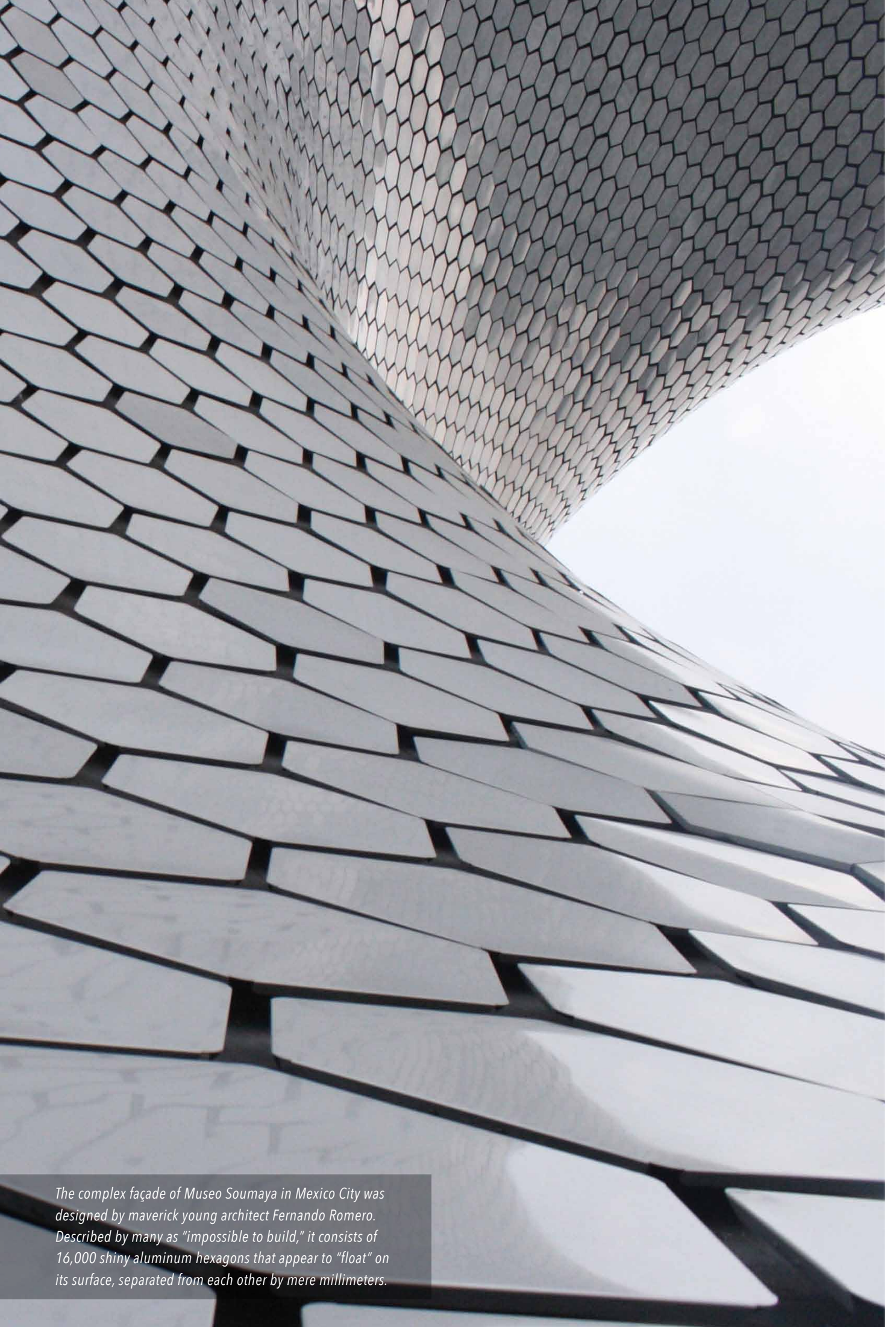


ARCHITECTURAL
FREEDOM

Geometrica®



The complex façade of Museo Soumaya in Mexico City was designed by maverick young architect Fernando Romero. Described by many as "impossible to build," it consists of 16,000 shiny aluminum hexagons that appear to "float" on its surface, separated from each other by mere millimeters.

FREE FORM

Interior of Hulhumale house of worship in the Maldives invites peace and contemplation.

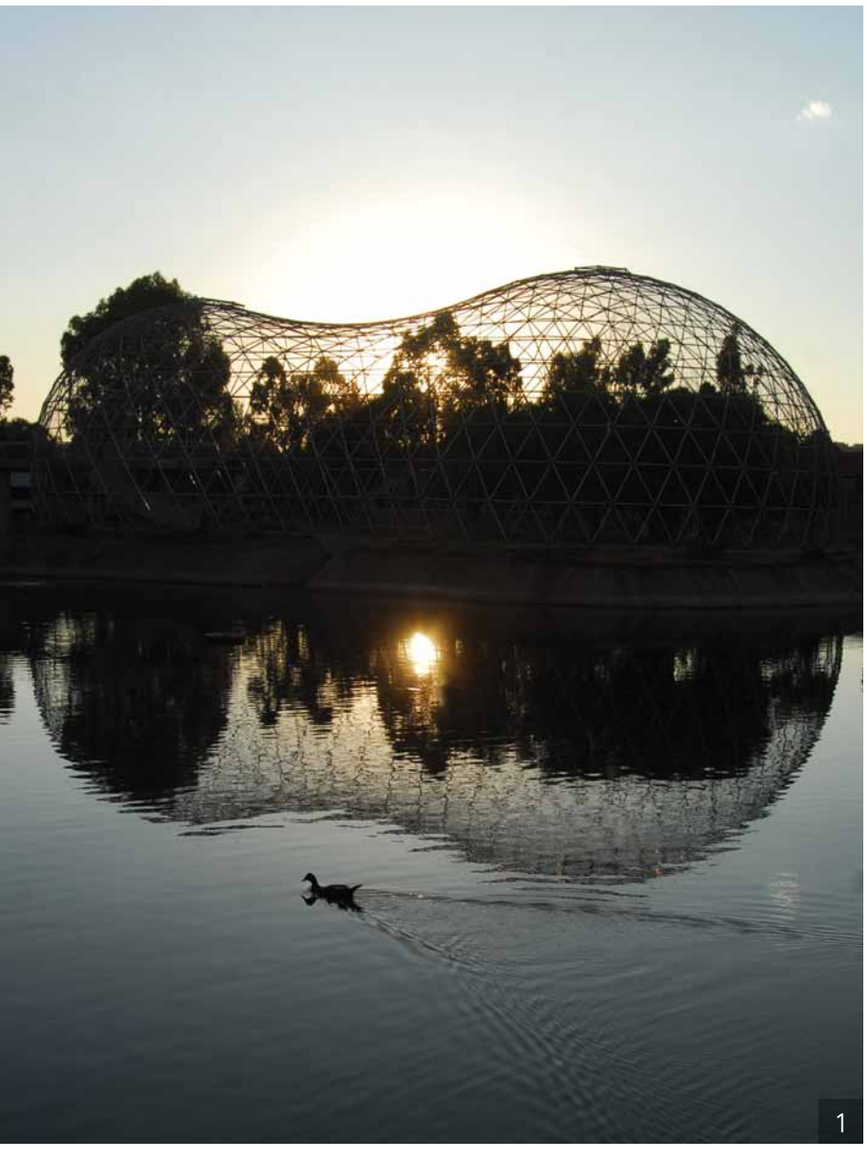
Over 5000m2, of free form cover the whole industrial complex at Coemin, in Copiapó, Chile.

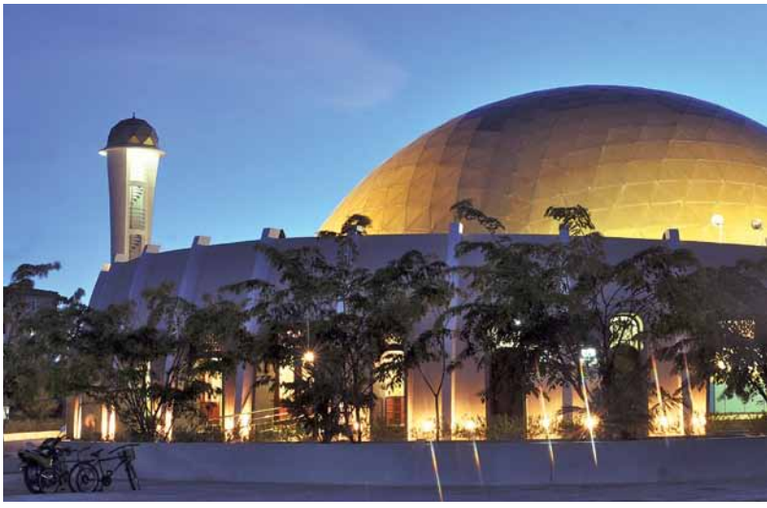
DISTINCTIVE FORMS FOR ICONIC BUILDINGS

Form is the most basic of architectural features. It is defined by structure and expresses the character of a building.

Design professionals worldwide are discovering a versatile structural system that empowers them to create distinctive forms for iconic buildings. This system, Geometrica®, permits unprecedented architectural expression–using versatile technology that inspires stunning modern design.

Architects and engineers have long dreamed of a structural solution that offers both complete geometric freedom and economic efficiency. Geometrica is that solution.





Zacatecas aviary 1 | Plaza Valle center court 2 | Columbia, SC, airport canopy 3
Chapultepec aviary 4 | Hulhumale, Maldives, mosque 5 | Qatar waste management building 6


3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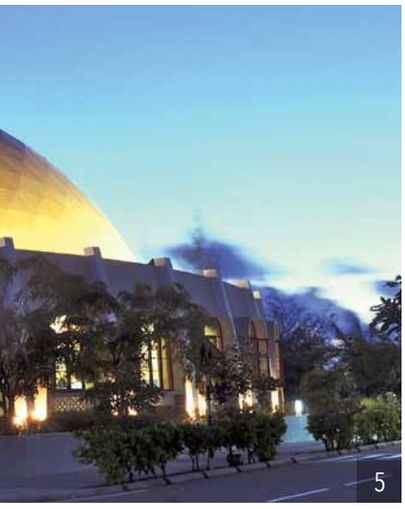
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6

Geometrica structures use simple geometrical principles in new ways. Never have geodesics been so flexible or so beautiful. The basic module is a triangle, combined into 3-D lattice structures that are far stronger and more stable than 90-degree frames. The slender members share and distribute loads, making the structure more efficient and lighter than a conventional two-dimensional frame.

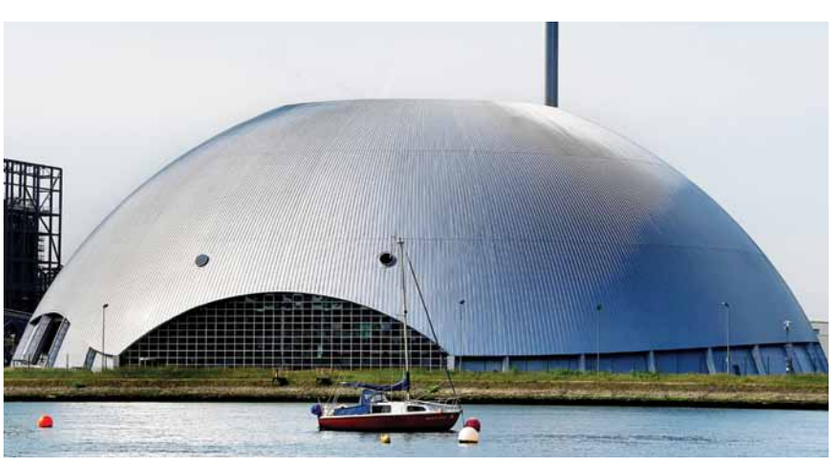
For the first time, architects can build doubly curved geometries that span great distances and realize the full potential of freestyle designs.

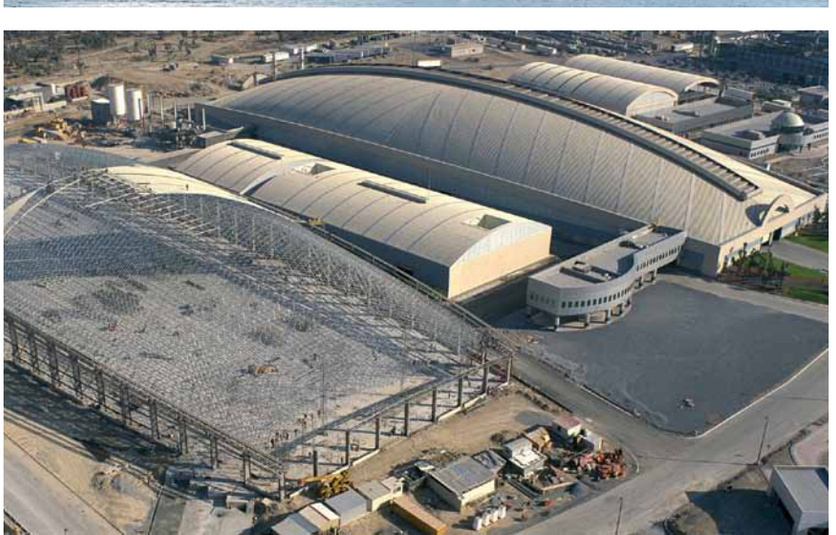
These expansions of the dome theme offer endless possibilities, with varying radii and curvatures. Here is a structural solution that permits you to design architecturally sophisticated buildings ranging from aviaries and retail spaces to sporting venues and industrial structures of timeless character.

LONG SPAN

Marchwood Dome, designed by renowned French architect: Jeanrobert Mazaud, conceals and beautifies an incinerator facility, with only the twin chimneys stretching upward through the elegantly curved roof.

The Nemak domes, designed by Architect Carlos Villaseñor, in Monterrey, Mexico, span a breathtaking 224m in their major axis without internal columns.



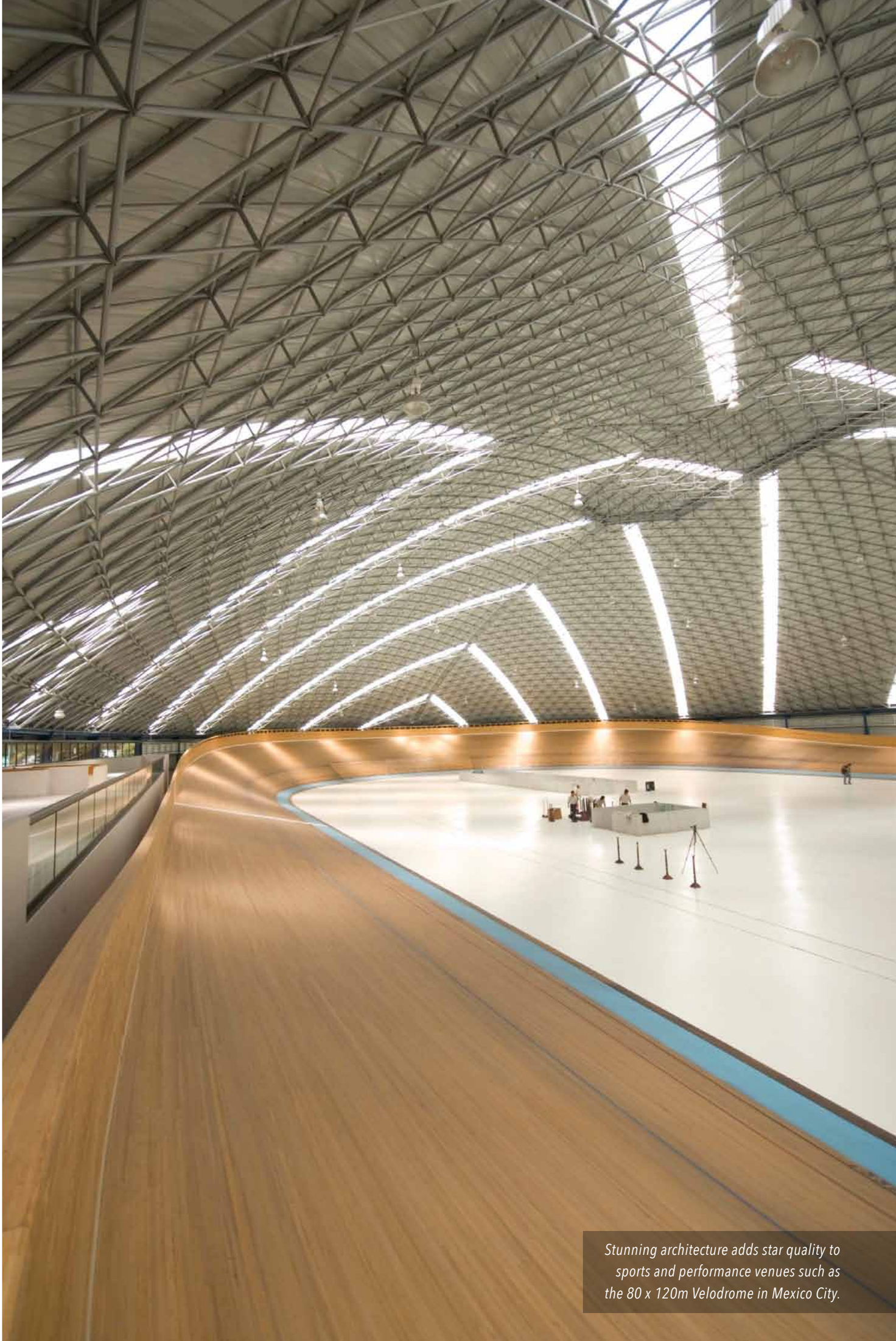


LONG SPAN, LIGHT WEIGHT, AESTHETIC BEAUTY

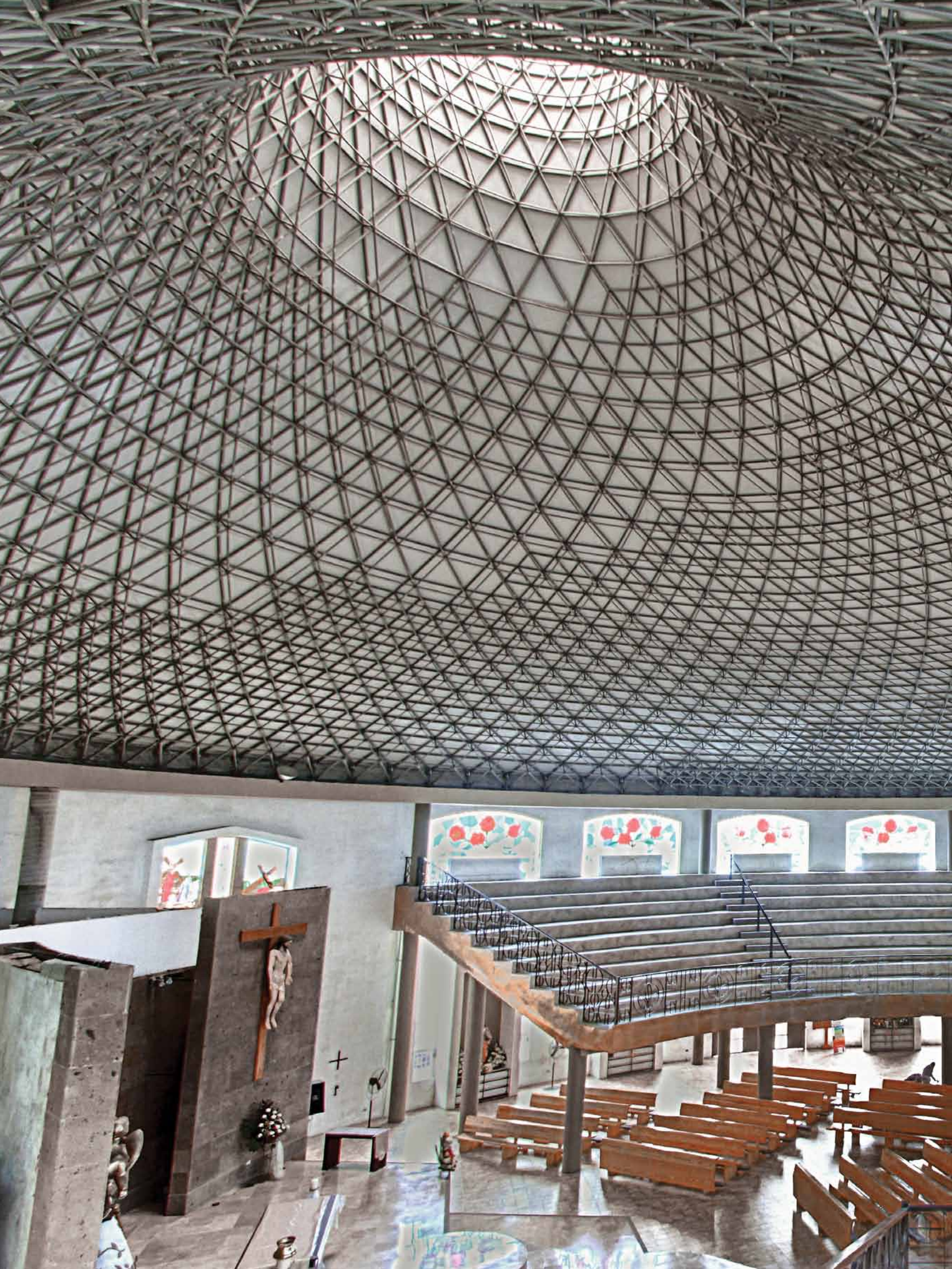
When your goal is long span, light weight and aesthetic beauty, Geometrica Freedomes are a breath of fresh air.

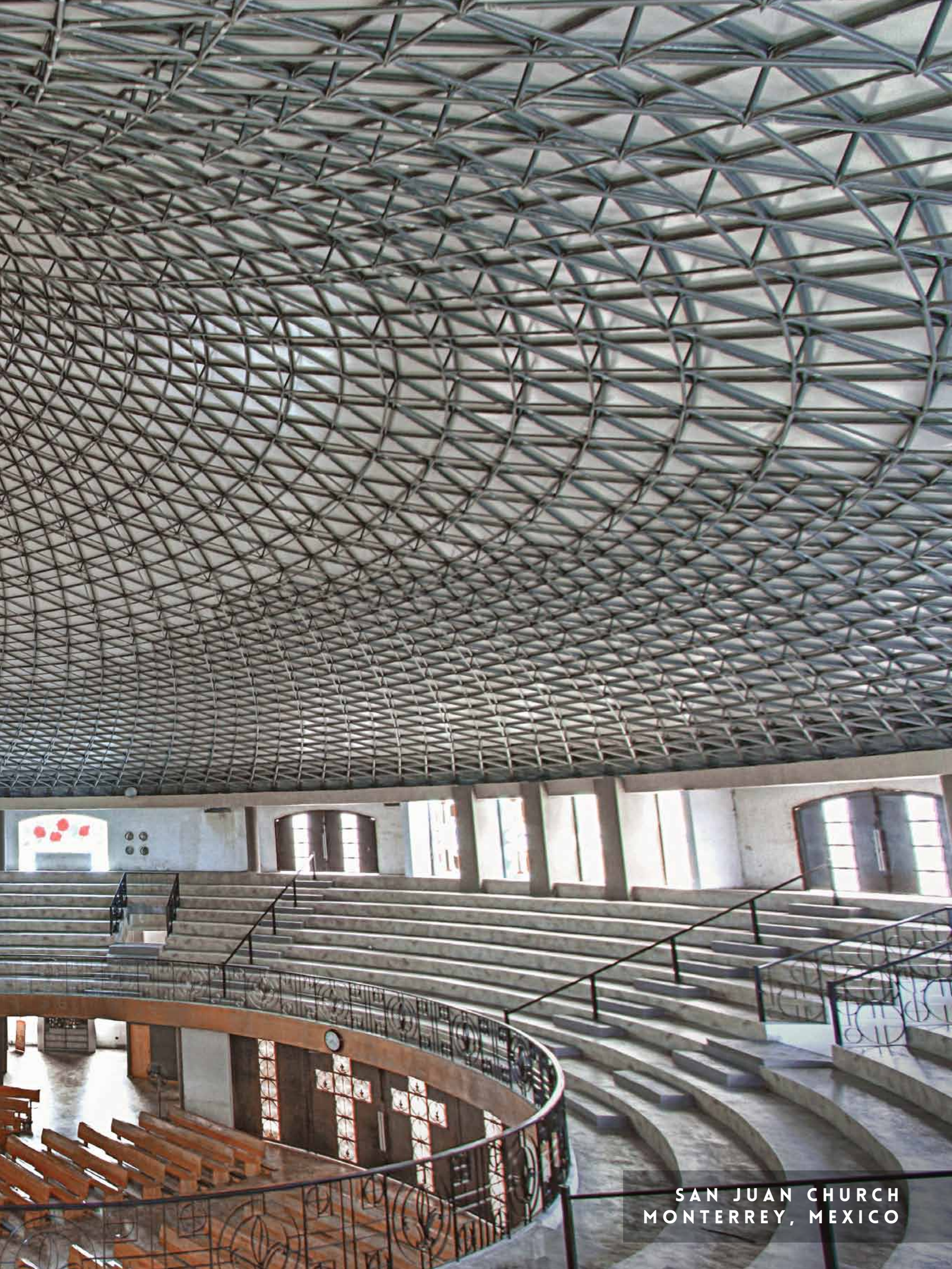
The shape of the structure can duplicate the shape of the venue, eliminating wasted space. And the absence of interior columns means open vistas for the audience.

Geometrica domes can clear as much as 300 meters, or cantilever over 50 meters. Their strength comes from their structural form. The domes can be engineered to support catwalks, scoreboards, sound and lighting, curtains and rigging - everything needed for the venue.



Stunning architecture adds star quality to sports and performance venues such as the 80 x 120m Velodrome in Mexico City.





SAN JUAN CHURCH
MONTERREY, MEXICO

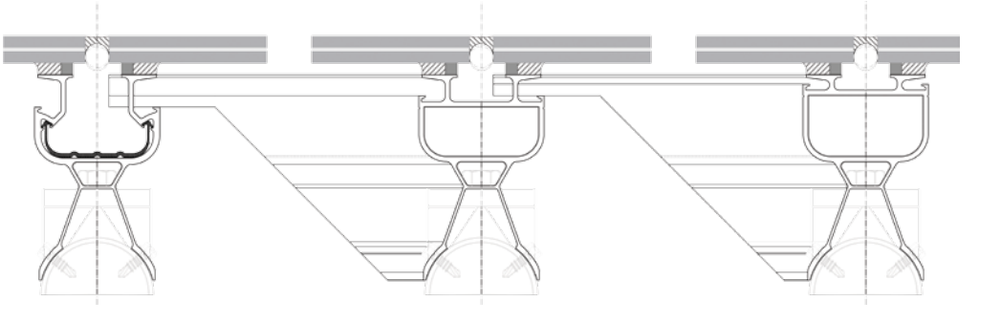
The transparent, glass-clad dome of the Hyatt Regency in Cancun, Mexico, enhances the perfect blue of the Caribbean sky, delighting hotel guests and employees alike.

LIGHT

ANY SKY DOME YOU CAN IMAGINE

Whatever you can imagine, Geometrica makes possible: lamella, Lace™, geodesic or Sol™ patterns. Slender tubular members may be arranged in a single or double layer for the largest possible spans.

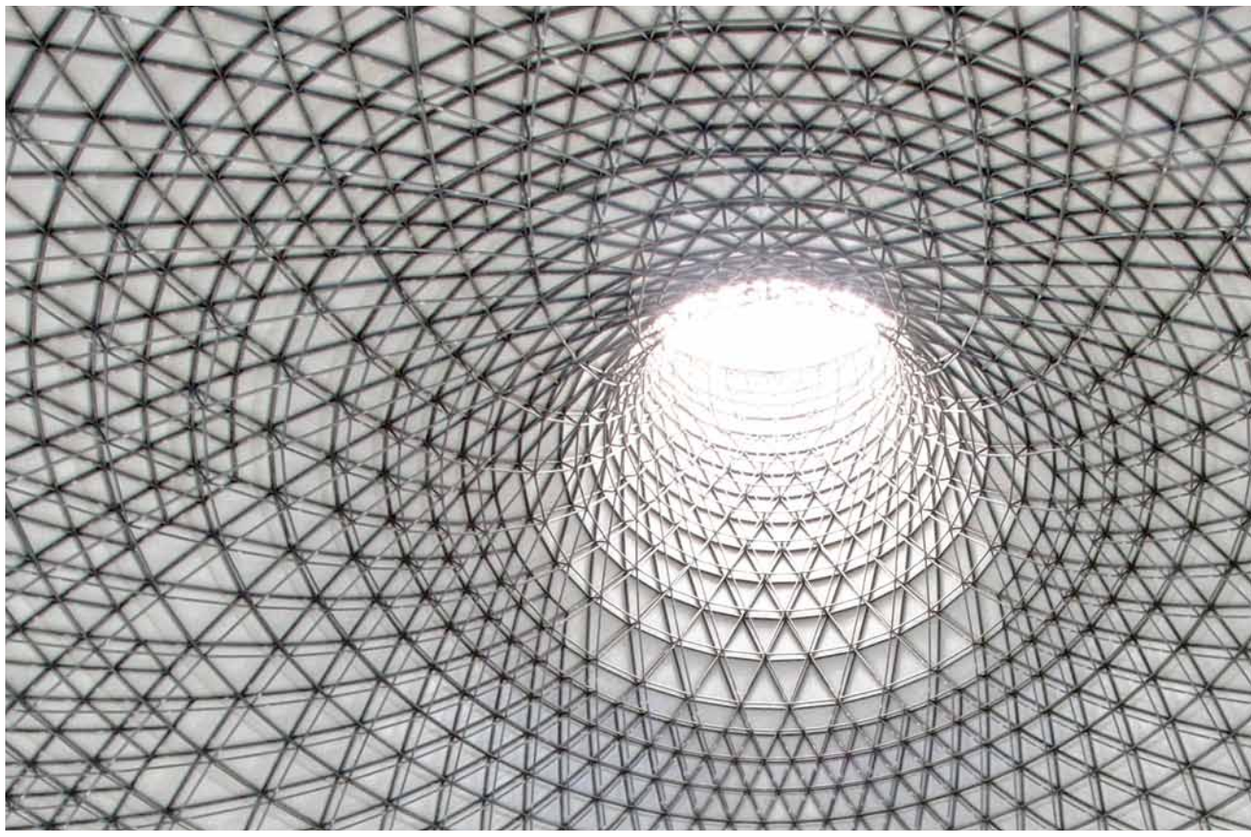
Geometrica domes may be clad with safety glass in single or insulated panels. Choose multicolored or transparent cladding for maximum light. True free form structures may be clad with a three-way glass pattern.



Geometrica's hierarchical gutter arrangement offers redundant protection against water. Structural seals prevent infiltration. Condensate gutters in all the skylight mullions capture moisture and carry it to primary gutters, which are uninterrupted from the water break to the dome's edge.

Polycarbonate clad space-frame wall defines space at the Centro Cultural Gómez Morín, in Queretaro, Mexico 1

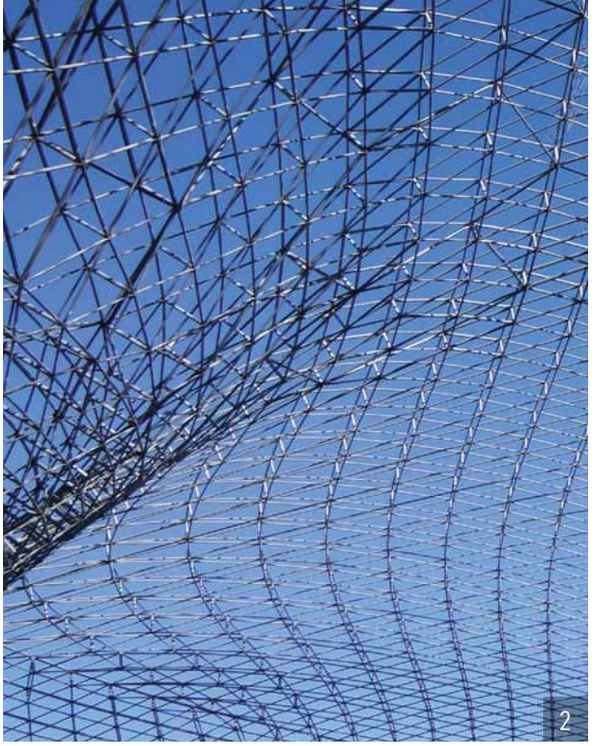
Free form in Copiapó, Chile 2



Light and opaque areas may be combined through the general geometry as in the San Juan church 3

The Children's Museum in Carolina, Puerto Rico, features a center court sky dome clad with safety glass 4

Openable skylight graces the center court of a restaurant in San Miguel de Allende, Mexico 5



DESIGN SKYLIGHTS WITHOUT LIMITS

Geometrica skylights offer limitless design freedom: light-catching and free form, they lend awe-inspiring beauty to any structure. And you'll never have to worry about water infiltration with our redundant seals and gutters.

Beyond pure function, Geometrica gives architects and planners the freedom of design to create landmark structures that help users feel comfortable and free.

Complex environments can be enclosed under a single Geometrica cover, maintaining visual and physical continuity while allowing natural light to enter in engaging and varying patterns. It's the perfect way to link buildings or stores within a mall. Signature enclosures not only define space but also enhance the guest experience of light, airiness and freedom.

The Geometrica system is perfect when adding to or renovating an existing building, since our structures require few, if any, changes to existing supports and foundations. Geometrica's light weight also simplifies the design of retractable roofs.

DETAILS

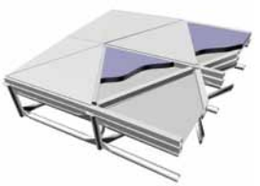
It is Geometrica's simple yet unique techniques that allow it to deliver infinite structural possiblilties.
Geometrica's building system is versatile. It features an extruded, universal and strong joint; human-scale modules; dense packing volume; and easy installation with little equipment. These virtues allow virtually unlimited form.

THE HUB

The unique Geometrica hub connection requires no welding, supports the full yield strength of structural steel and transfers moments across the joint, resulting in lighter and more affordable structures.

CLADDING

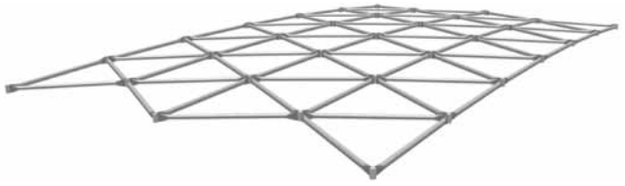
Both the exterior and interior surfaces of a Geometrica structure may be clad, typically with galvanized steel or aluminum formed-metal panels. Translucent and transparent panels can be combined with these to produce aesthetic patterns and provide natural light.



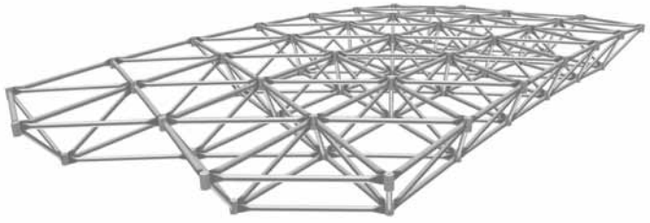
LAYER GEOMETRIES

Depending on the span and load, domes may be single-layer, double-layer vierendeel, double-layer truss, or ribbed. Lighter or heavier structural density may be achieved by varying the section of the tubes, or the length of the members.

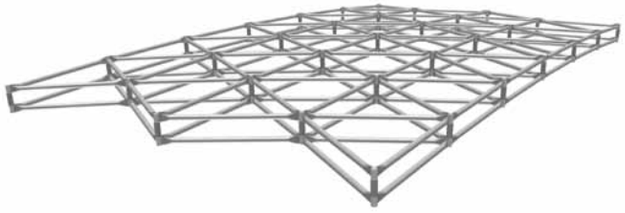
SINGLE LAYER Single layer geometries are used for moderate spans and for architectural applications.



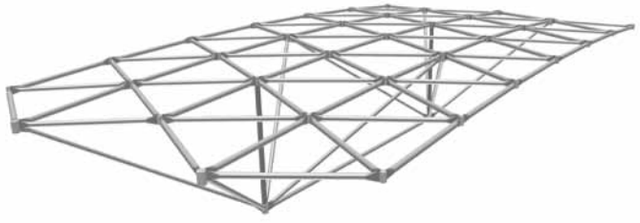
DOUBLE LAYER Double layer truss geometries are used wherever there are large or concentrated loads, column supports, or for extremely long spans.

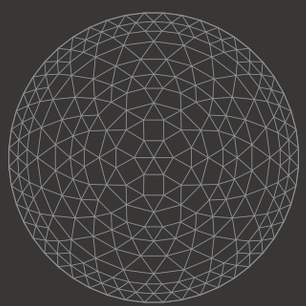


VIERENDEEL Vierendeel geometries can be used for most circular domes and freedomes. These are double-layer frames with parallel nodes in each layer connected with post members perpendicular to the dome's surface. The second layer increases the bending strength and the buckling resistance without introducing unnecessary web elements.

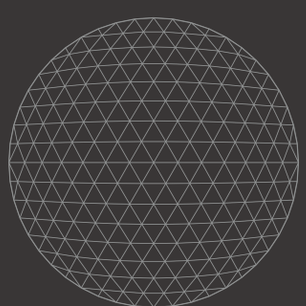


RIBBED Ribbed geometries are also used in domes. They are easy to install because most of the assembly work may be done on the ground and lifted into place.

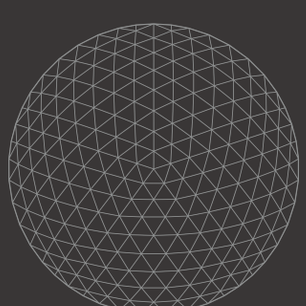




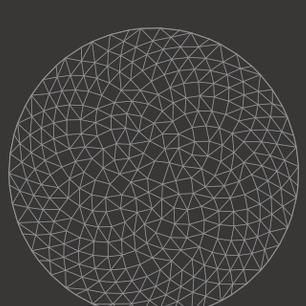
Lamella



Lace™



Geodesic



Sol™

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