

CALDIA CURVE

Craig Copeland

for **MGI MARMI E GRANITI D'ITALIA**
in collaboration with
T&D Robotics



30 SEPTEMBER - 03 OCTOBER 2015 Verona, ITALY

Marmi e Graniti d'Italia Sicilmarmi

Massa, Italy

Marmi e Graniti d'Italia Sicilmarmi' (MGI) is one of Italy's leaders in the stone industry, with over 60 years of experience in quarrying and manufacturing natural stone, such as the distinct Caldia Marble. MGI's strength relies on exploring for and controlling the best materials directly at the natural sources, and the most modernized capabilities of handling all steps of the fabrication process, from raw blocks to the finished architectural, art and design products. MGI marbles and granites have been supplied and installed for decades in some of the world's greatest architectural projects, like the concourse portal of the Pavilion at Brookfield Place that connects to the World Trade Center in New York City, and the Devon Energy Headquarters in Oklahoma City. The materials and fabrication of MGI epitomize the meaning of the "Made in Italy" trademark as a symbol of unmatched beauty, excellence and reliability.



Caldia Quarry

The key to any successful project with natural stone begins with controlling the material directly at the source, assuring high volume production and top of the market quality, all necessary features of large scale projects. Building upon this knowledge, Marmi e Graniti d'Italia Sicilmarmi (MGI) has committed itself, since its founding, to acquiring a distinct portfolio of quarries. Inside MGI's quarries, all excavation is done by experienced personnel with the use of precision diamond tools, meeting the industry's highest standards while safeguarding the natural heritage of the landscape. MGI is also committed to sustainable resource management, including the recycling of marble debris, for broad uses in large infrastructure projects, the construction of roads, pathways, and a variety of other groundscape applications.



Craig Copeland
Architect and Sculptor

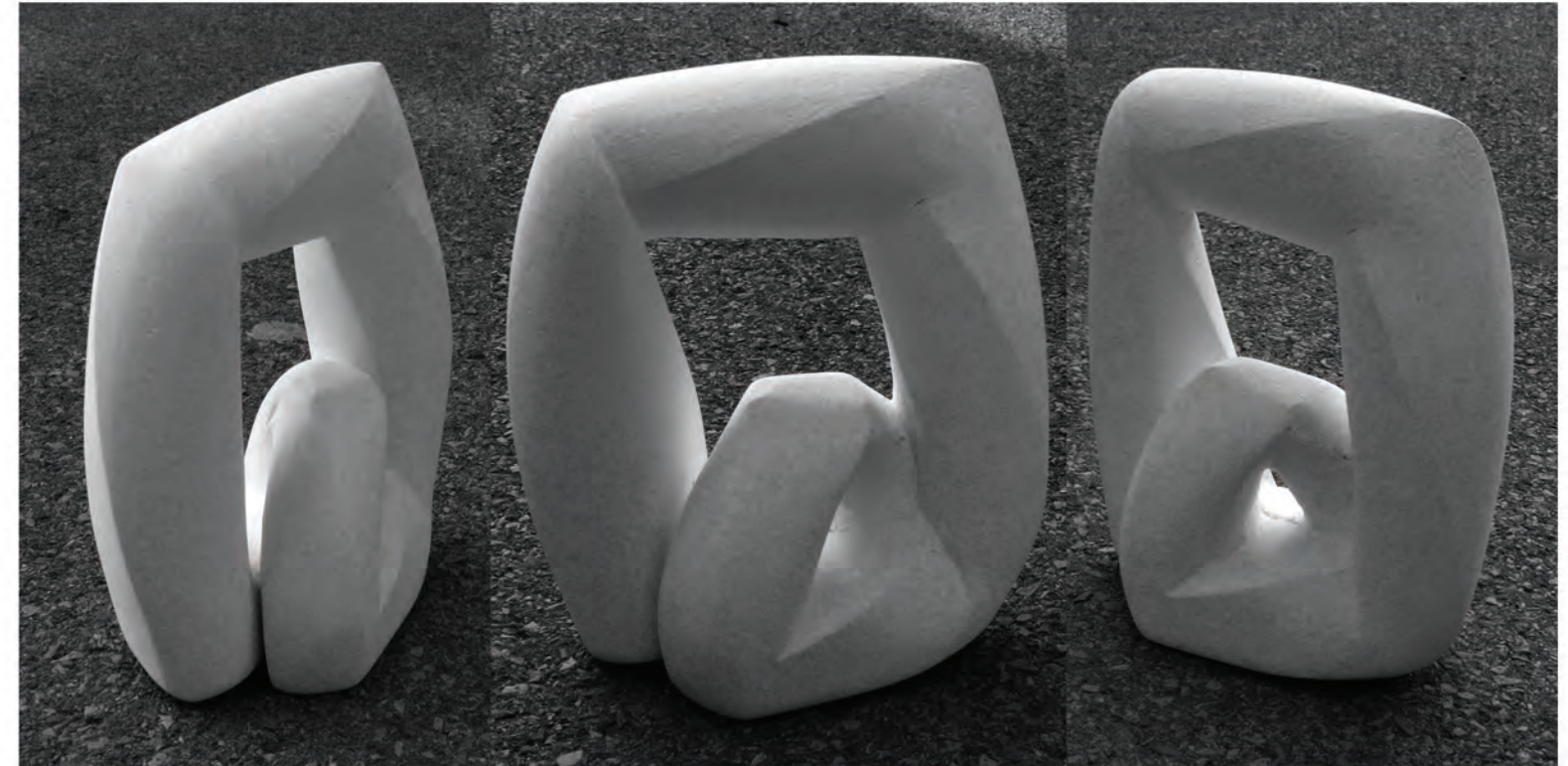
Figurative apertures, figurative space and the implicit natural energies - from within and upon form - are central examinations in my placemaking sculpture and designs. Gesture and movement inform all of my projects. Living forms and spirits are suggested in the profiles, twists and turns, seen and perceived. Sculpture is intended to be alive, transcending static object, engaging our consciousness to an awareness of living and place. Craig Copeland

Craig Copeland is an Associate Partner in the New York Office of Pelli Clarke Pelli Architects. Copeland's recent built projects as Design Team Leader include the New Entry Pavilion and Reconfigurations at Brookfield Place (formerly the World Financial Center) – a 500,000 square foot project which reconnects the Winter Garden to the World Trade Center in Lower Manhattan, New York. The Brookfield Pavilion was Copeland's first collaboration with MGI and prominently features Caldia marble.

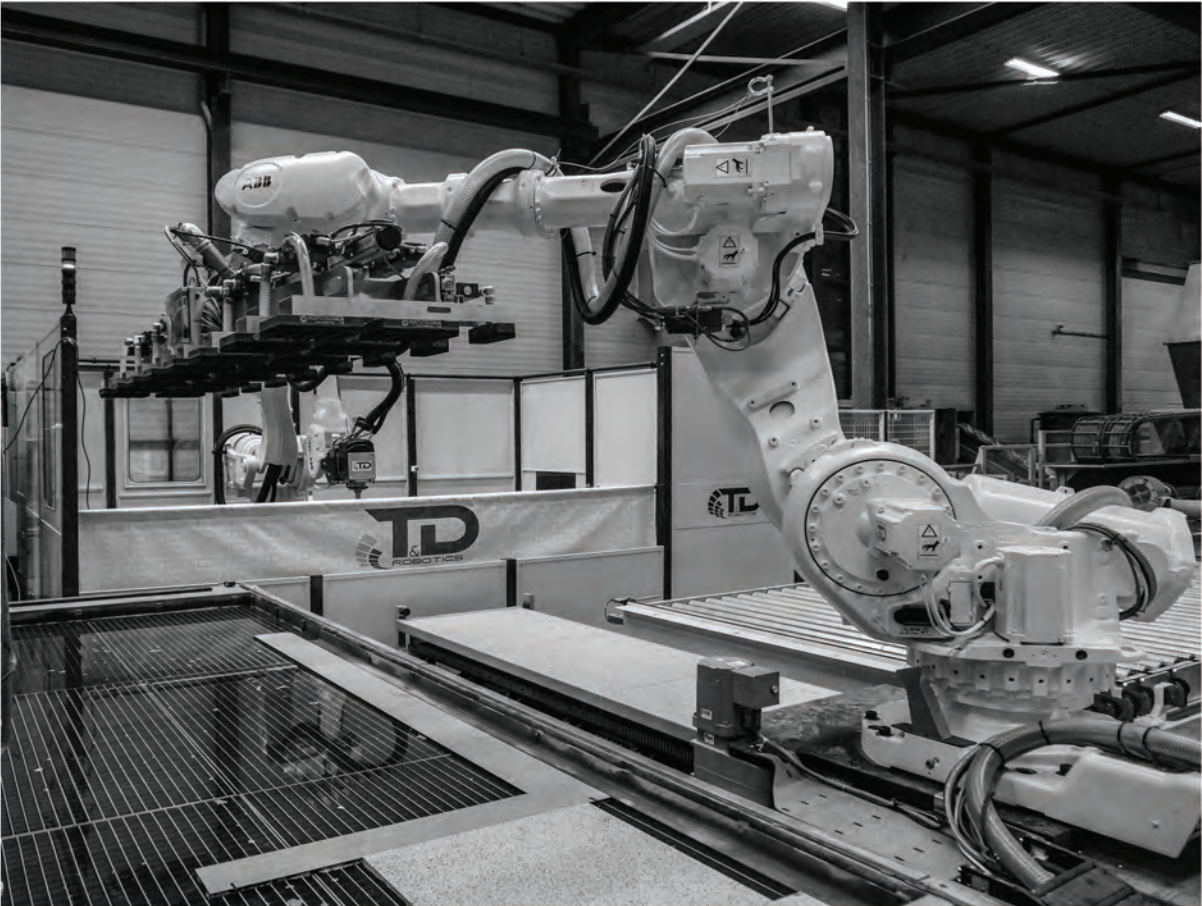
Copeland balances his architectural work with abiding interests in the visual arts - lecturing, teaching and sculpting. He carves stone part-time in New York City and Italy. Presently he is working on "Anello Eco", a 3-meter (10 foot) tall monumental stone carving extending concepts of aperture explorations into occupiable art.

Craig Copeland received his Master of Architecture degree from Yale University in 1989 and his Bachelor of Arts degree from the University of Florida in 1986. Copeland is a Fulbright Fellow, a LEED Accredited Professional BD&C, an active member in the American Institute of Architects, and a Registered Architect in the State of New York.

www.craigcopeland.com



T&D Robotics is trying to realize a dream, to bring automation in every factory or art studio. T&D Robotics believes that their engineers are capable of offering robotic solutions for any kind of work the artist, or builder may need performed: cutting, roughing, finishing, and handling. Working with MGI and Craig Copeland, T&D Robotics helped evaluate and then execute the robotic milling of Caldia Curve II. The next step, as part of Caldia III, may be to further optimize similar form evolutions through robotic wire cutting.



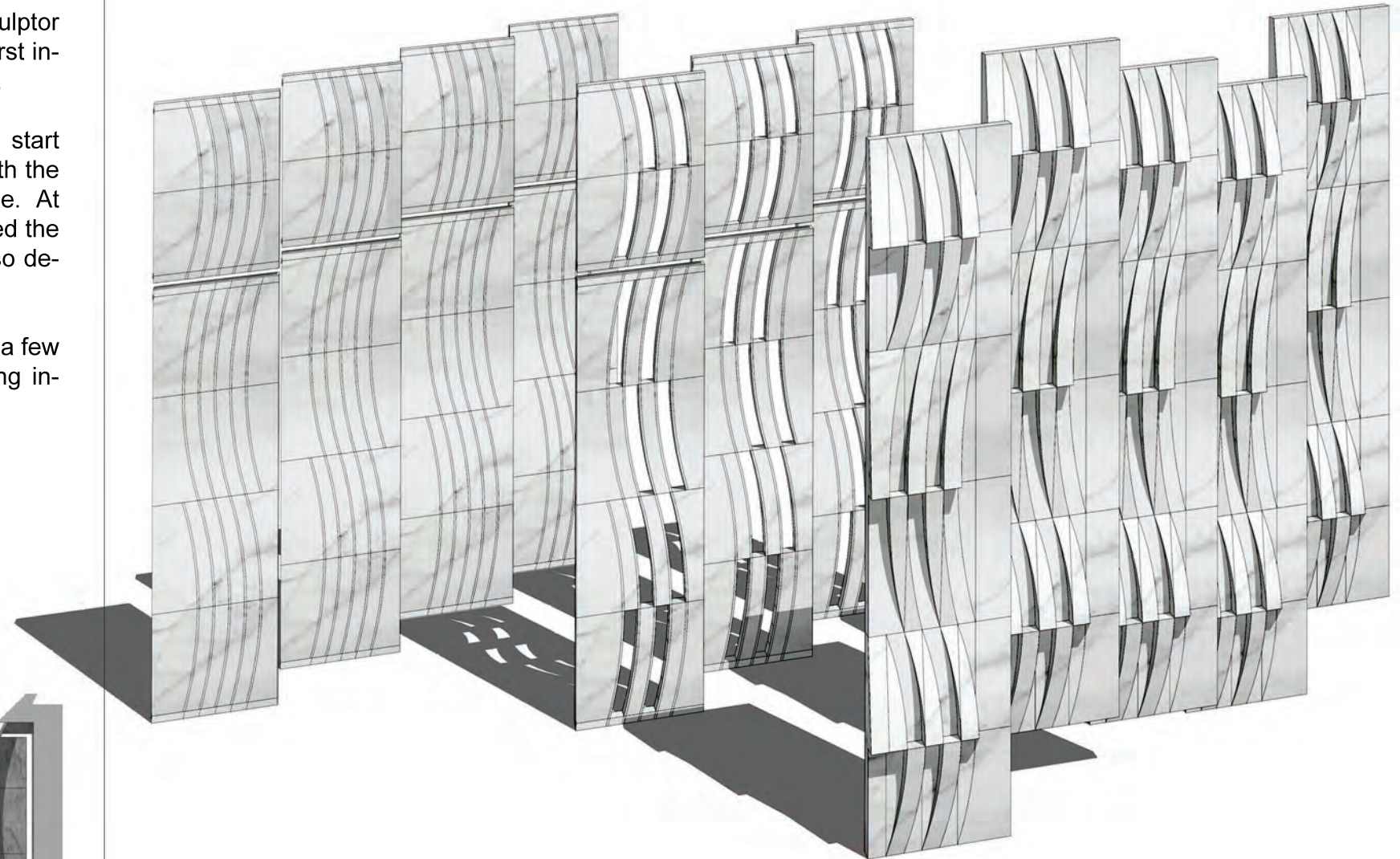
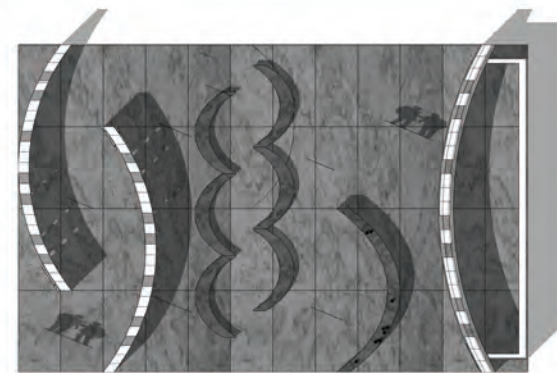
Caldia Curve I

Marmomac 2014

Caldia Curve, initiated in the spring of 2014 by American architect and sculptor Craig Copeland, and in collaboration with Marmi e Graniti D'Italia (MGI), first included an expanding series of formal examinations in stone panel shaping.

From geometric plays in relief and perforation, **Caldia Curve I** from the start sought ways to combine contemporary computer model based designs with the latest technologies in stone fabrication using MGI's signature Caldia marble. At Marmomacc 2014, in Verona Italy, from 24 – 27 September, MGI presented the first in a series of these panels integrated within their exhibition stand, also designed by Copeland.

The intent then was, and continues to be now, to use the same booth over a few years as an armature or design laboratory for examining and showcasing increasingly sophisticated forms and fabrications of Caldia Curve variations.



Caldia Curve I
Exhibition

Caldia Curve I was first presented at Marmomacc in 2014. Features of the booth included custom designed tables and chairs, curving screen walls housing the Caldia Curve panels, and the Caldia Cube interpretation named "Beeker" carved by Copeland.

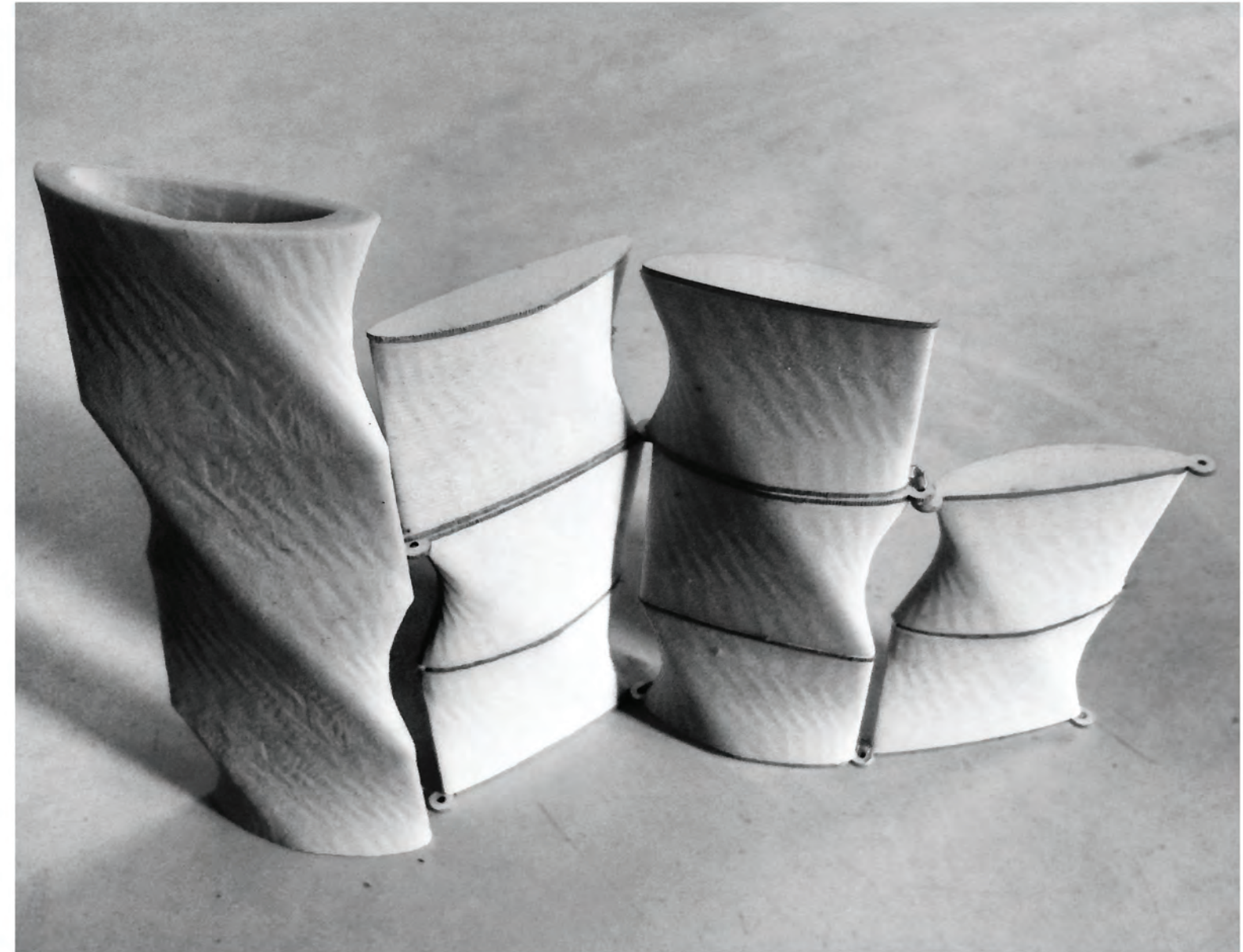
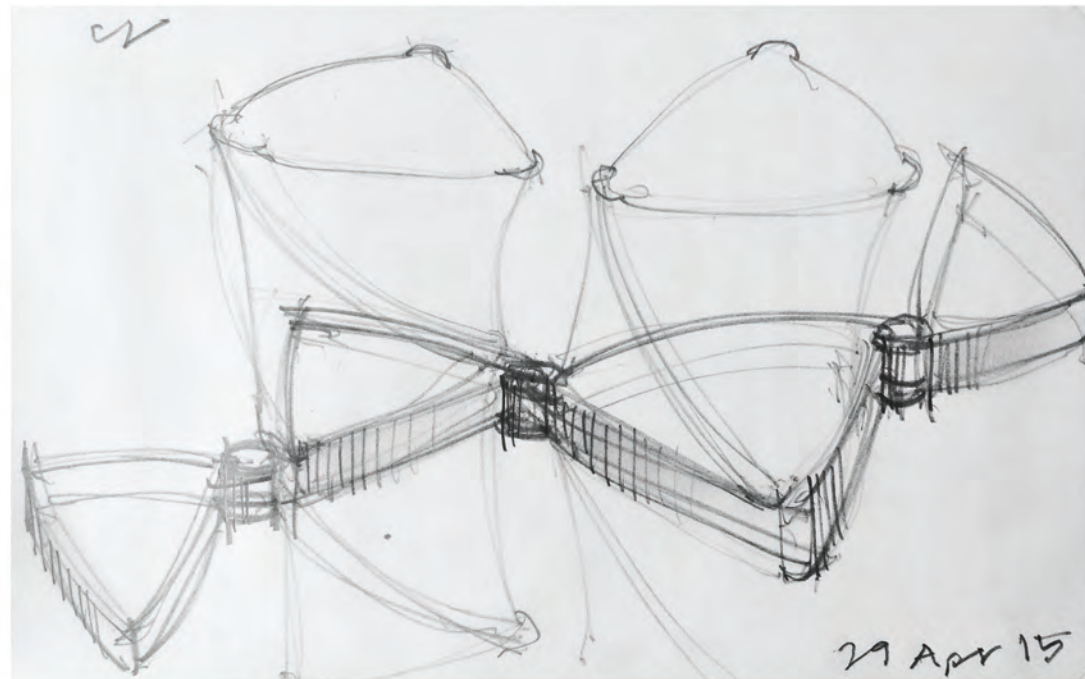
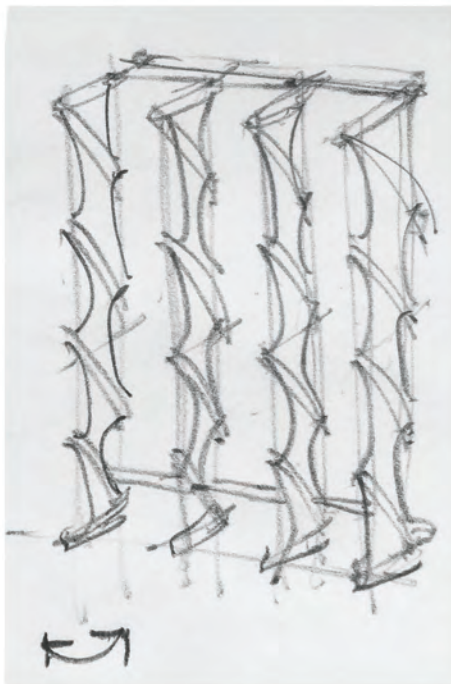


Caldia Curve II

Marmomac 2015+

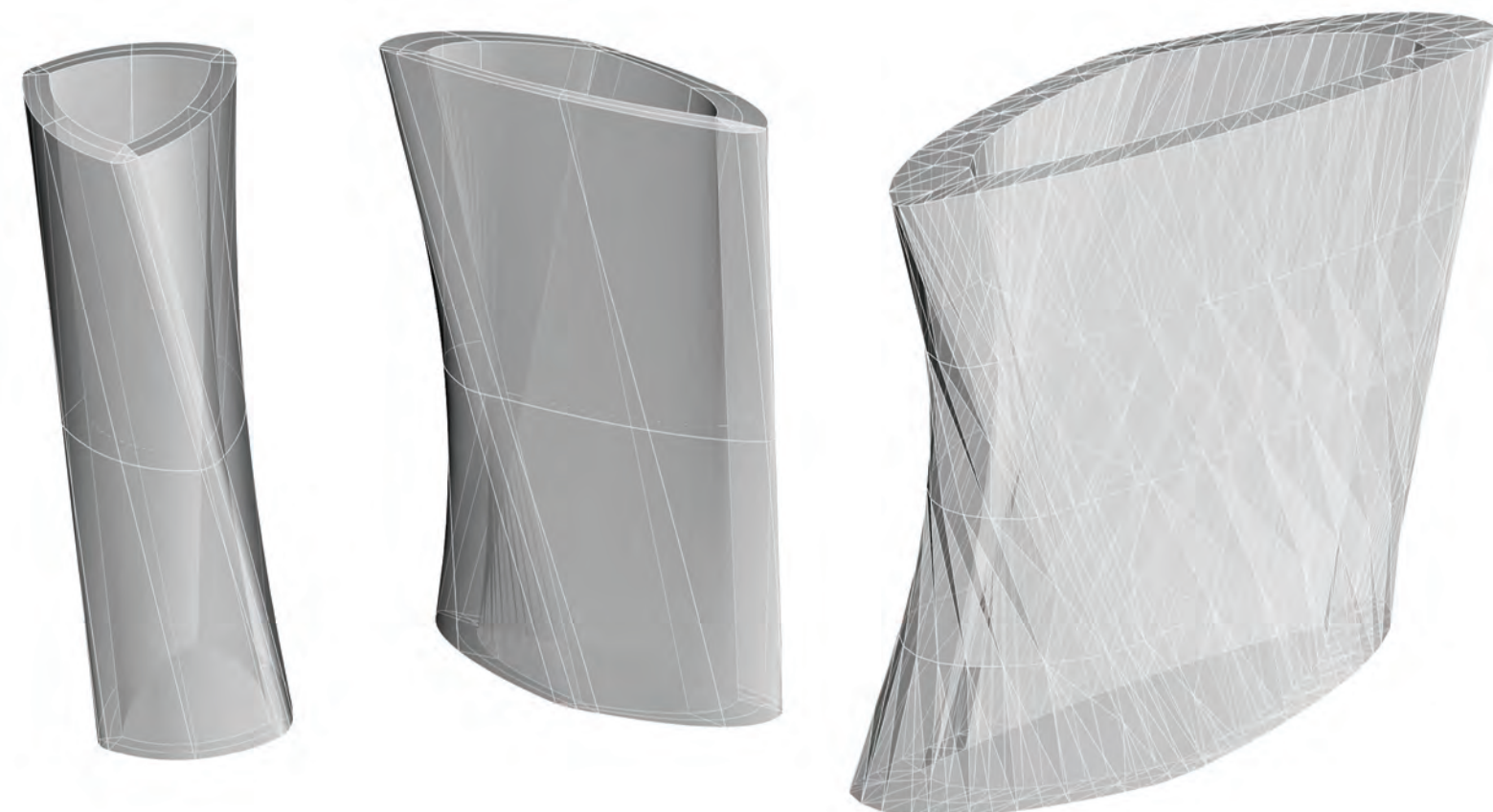
In 2015, Copeland continued developing a series of virtual and physical prototypes of a second generation: **Caldia Curve II**. The objective was to build upon the sinuous panels of the first generation designs; to transform flat, graphic panels into volumetric, triangulated columns. The intent was to expand the potential of the panelizations through more robust lateral stability, increasing spanning capabilities in tandem with greater sculptural expressions. Potential uses of such forms emerging could include interior screening or exterior shading. In any case, compositions of these could be static or dynamic.

Caldia Curve II was studied through a combination of hand drawings and parametric modeling that in turn lead to a series of physical models - 3D prints and laser cuts. The models helped initiate testing of physical surfaces and functional connections, different lighting possibilities, and kinetic dynamics associated with Caldia Curve II's mobility.





The specific form selected for this year's **Caldia Curve II** fabrication has a geometry inspired by the central shaft of the beautifully efficient femur bone, essential in the locomotion of many animals with skeletal structure: birds, reptiles and mammals. The form was generated from the triangular diatomic resultant of 3 overlapping circles. Offset to create a thin wall, the profile was rotated as it moved across an elongated axis. With the intention of developing a screen unit rather than a column, the form was flattened. The resulting transformation became an expressive twisting panel with sinuous concavities and convexities.



Caldia Curve II

Fabrication / assembly at T&D Robotics / MGI

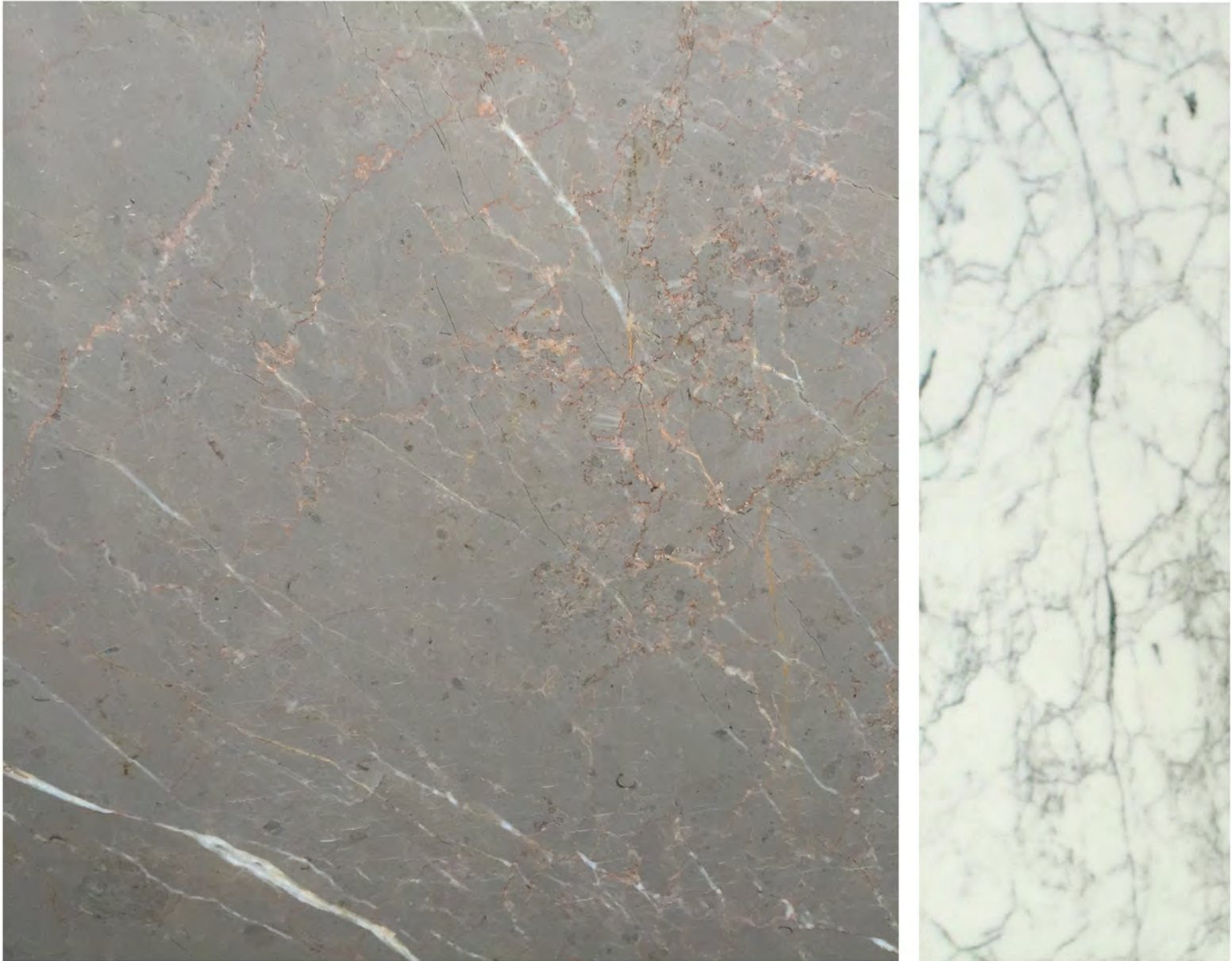
Caldia Curve II was studied as both a solid and hollow form. The latter with consideration for internal lighting. The Lighting Designer, Stephen Margulies, founder of OneLUX, provided an array of illumination options for the column forms and the overall booth. Balancing budget, schedule and logistics, the team decided to concentrate back-lighting to the underside of four custom designed table-tops for this year's exhibition (rather than internal to the columns).



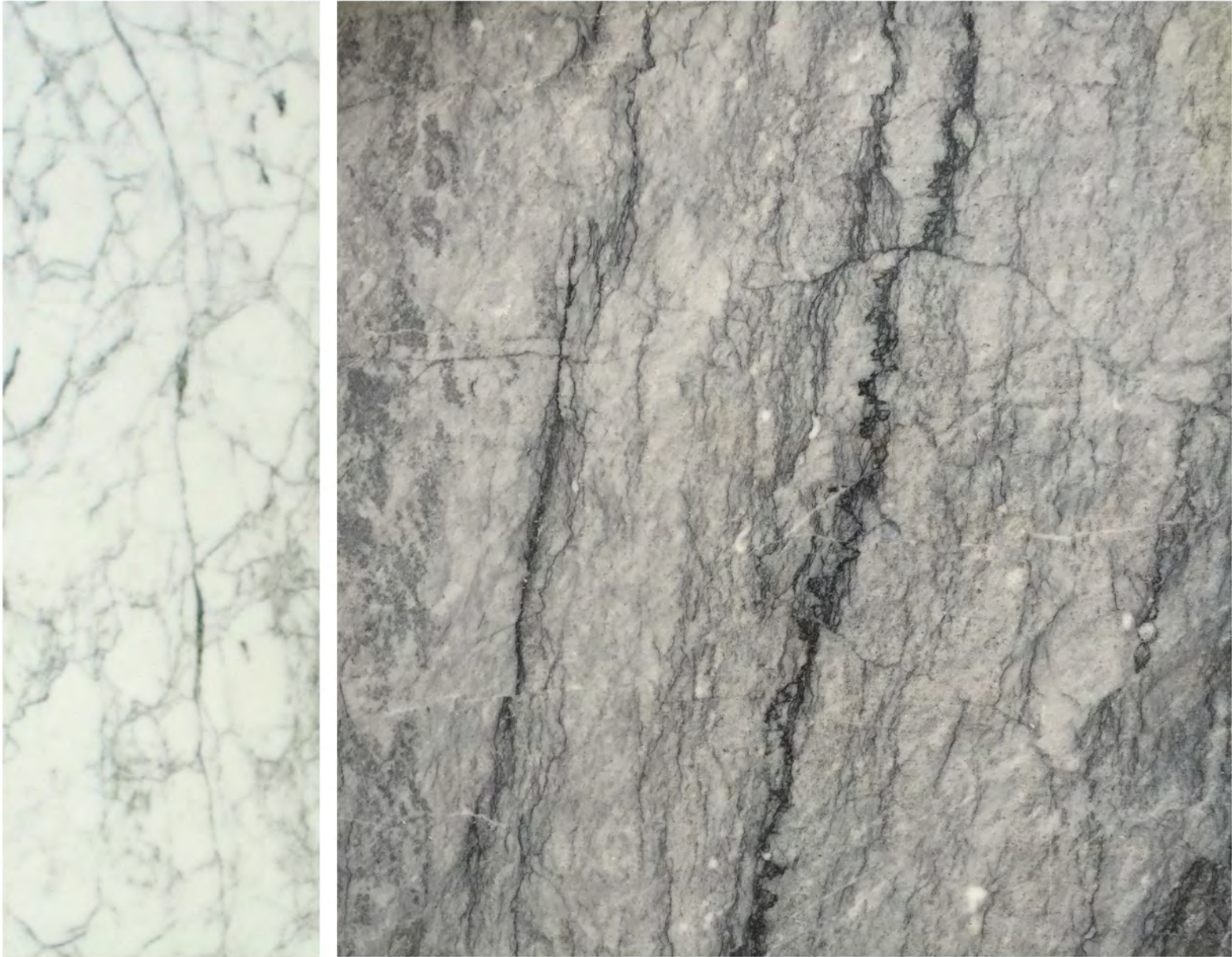
Rosso Portofino



Lotus Grey



Zafiro Dark



Breccia Monreale

