



Lunar Playscape: the Climbing City

Initial Graduation Thesis Proposal

Jonathan

Cardio + Resistive Exercises



Astronauts to work-out 2 hours per day within their busy schedule

What Does Bouldering Do for My Strength and Fitness?

Bouldering requires you to move on various planes: up and down, forward and back, under and over obstacles, and sometimes even launching yourself diagonally from the wall in an attempt to grasp a protruding handhold (known as a 'dyno'). It's as much about upper body strength as it is feet co-ordination and mental resilience. Sometimes the only thing holding you in place is a thin, millimeter-thick finger hold, or having your heel hooked around a lower hold.

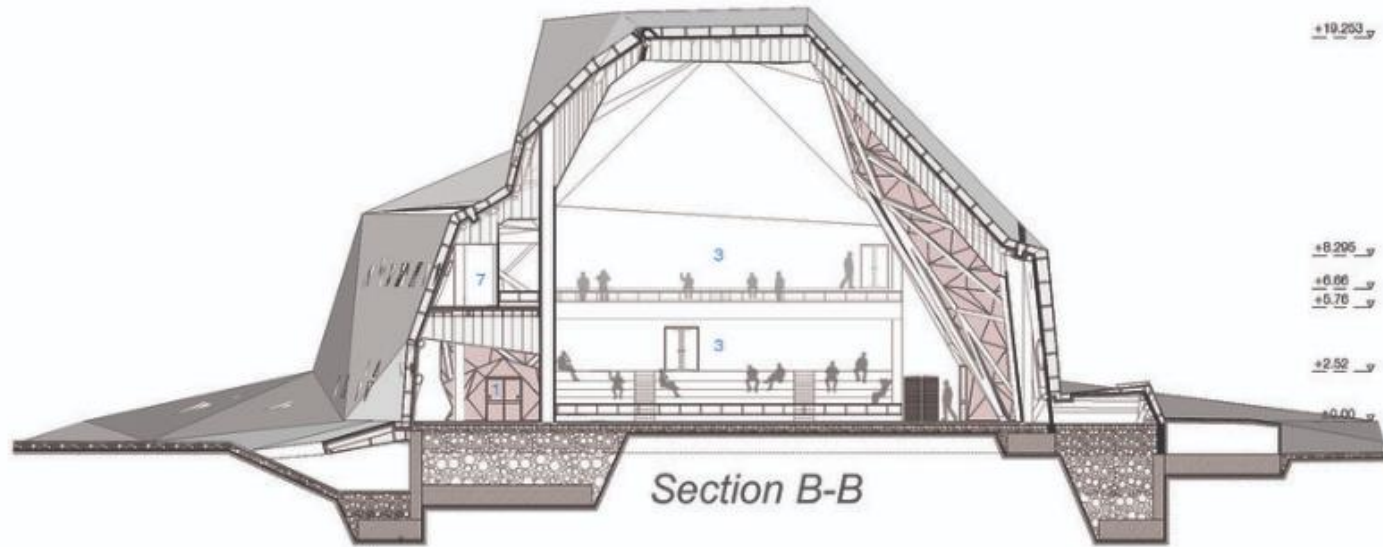
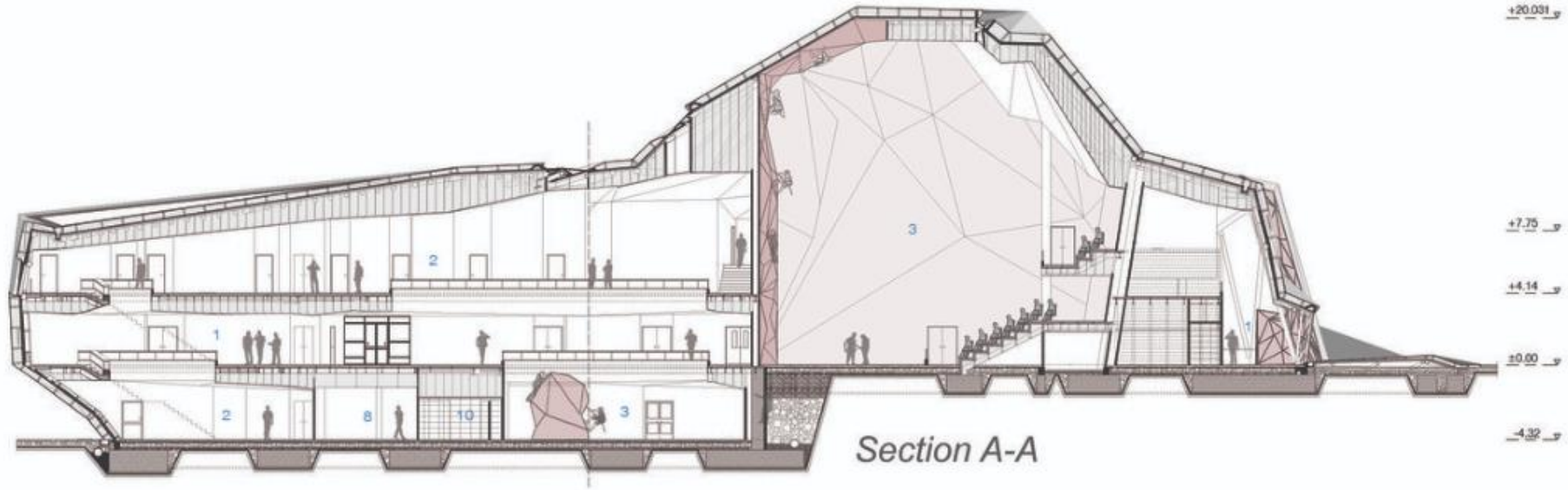
'Bouldering, like all climbing, is fantastic for finger and grip strength but it is an all around workout so it tones and conditions every part of your body,' agrees Coxsey. Finger strength is perhaps most important – a pulled tendon can put you out of action for weeks, with some climbers practising finger pull-ups and holds in their local gym's warm-up area before each session.

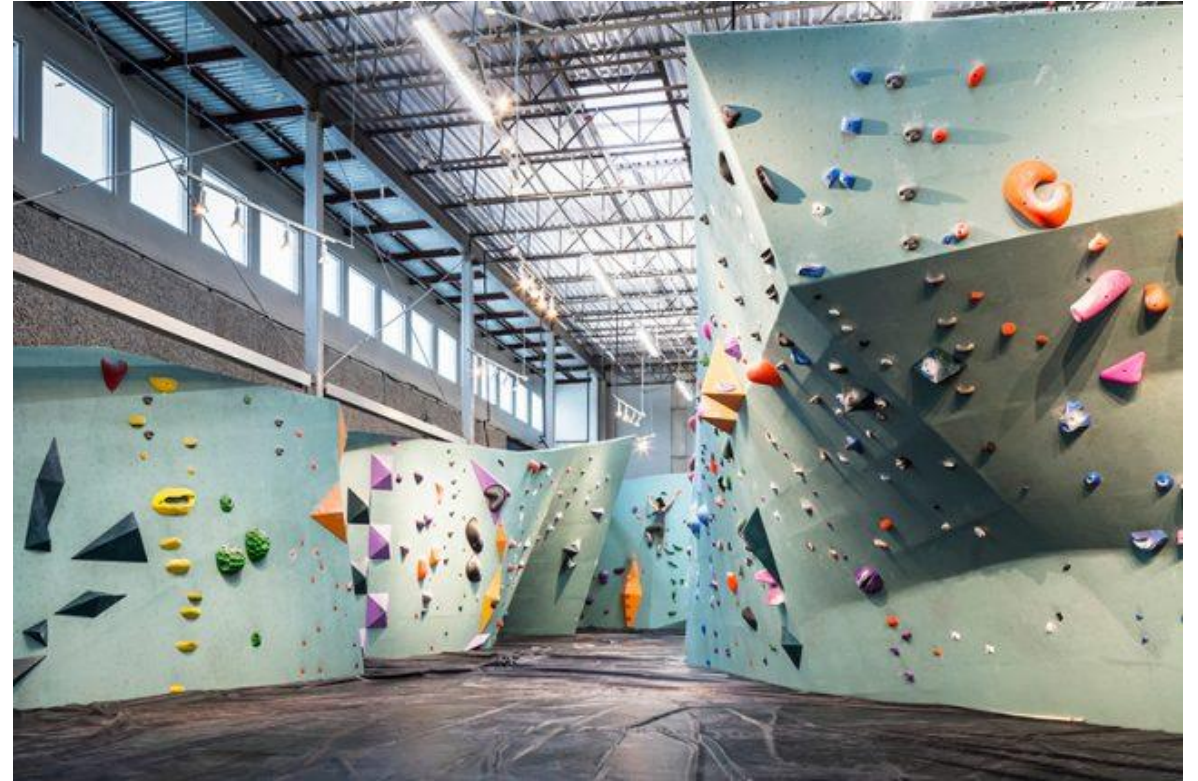
'Bouldering offers a serious workout for your arms, grip strength, and back, but it's easy to underestimate just how much of an all-body workout you'll face,' adds Rooke. 'You'll use virtually every muscle during a session, from the ends of your rubber-clad toes to your fingertips. As a bodyweight exercise, there's a huge emphasis on power and your strength-to-weight ratio, like calisthenics.'



Source: weburbanist.com

Rock Gym in Polur, Iran by New Wave Architecture





Source: weburbanist.com

World's Largest Bouldering Gym, Austin Texas by DJA Architects + Lilianne Steckel

Rigidity + Flexibility
Long-term & short-term



Source: arquitecturaviva

The Blur Building, Yverdon-les-Bains, Switzerland by Diller Scofidio + Renfro





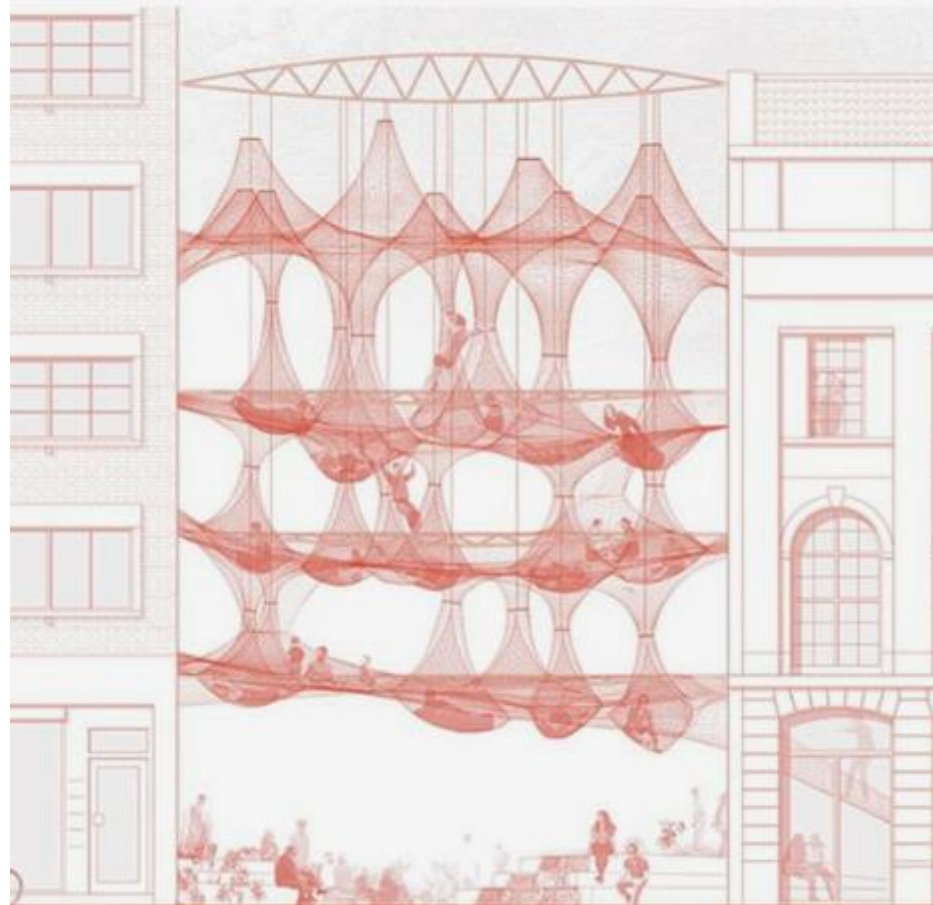


Source: [arquitecturaviva](#)



superarchitects

🕒 5w



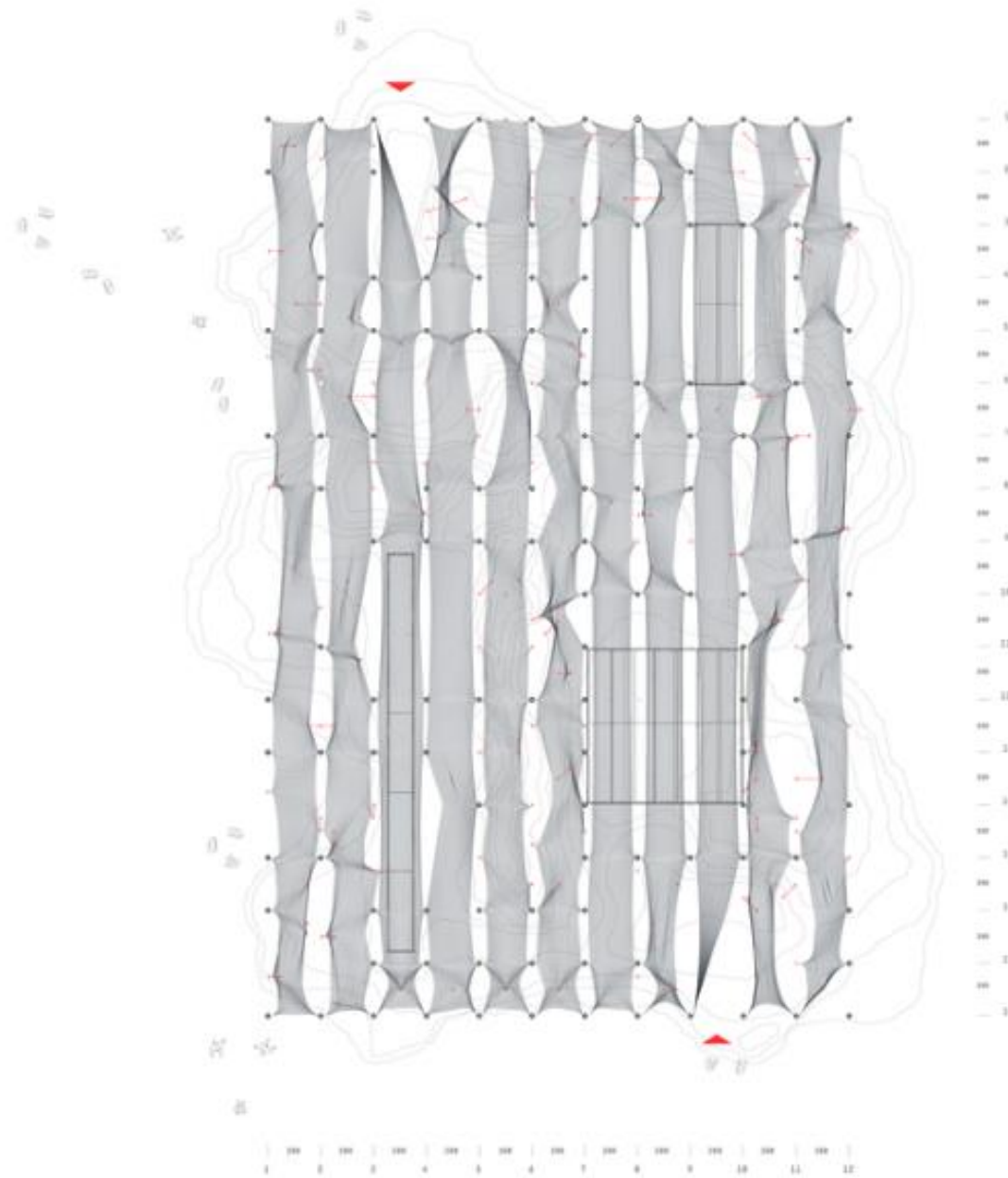
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“0.5 kg of nylon to cover an area of more than 45m in length”
“How much does your building weigh, Mr. Foster? –Buckminster Fuller”



Source: Archdaily

5.5 Kg PAVILION, Finalist of YAP_Constructo 2016 by Contrucci + Sfeir





German Pavilion at Montreal, Frei Otto 1967



Corn starch pha



Corn starch pha



Potato starch pha



Hemp reinforced pha



Hemp reinforced pha



Net cast pha



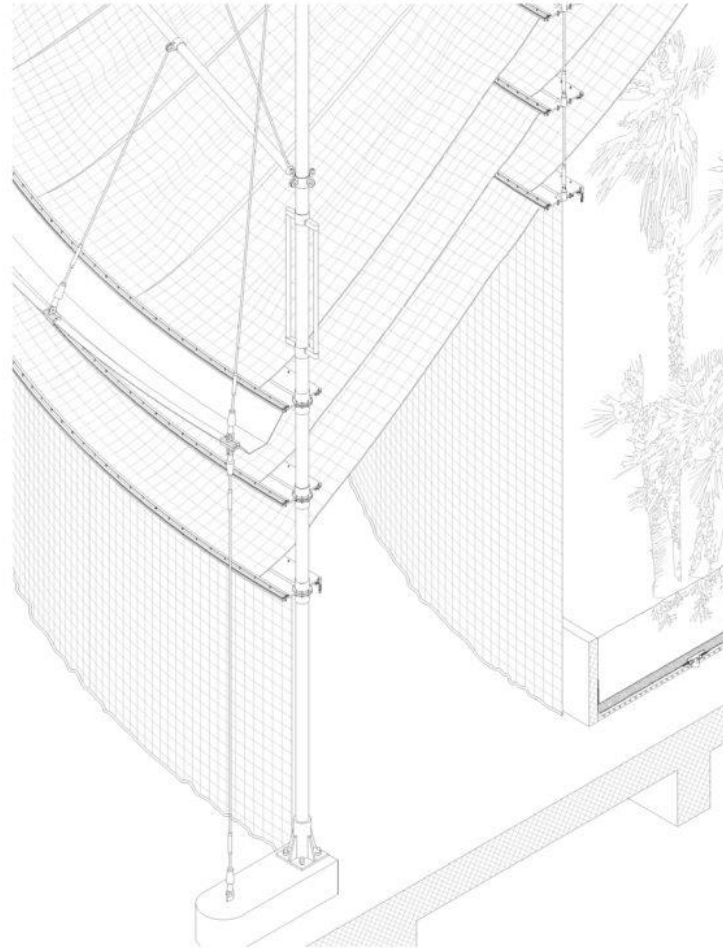
Dyed pha



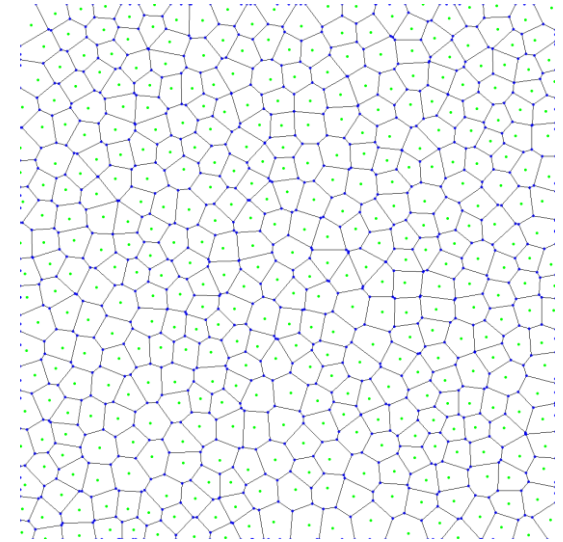
Net reinforced pha



Net reinforced pha



Construction detail, 1:10



To move around safely and to be held securely in place, the OWS had walls and ceilings made of a metal triangular grid-work [Fig. B]. The original

straps, foot restraints and temporary restraints such as clips and snaps. (NASA [Skylab], 1977)

A:



B:



Source: *Architecture for Astronauts* (Book), pg. 56

Orbital Workshop, SkylabSpace Station



Source: Archdaily

Bouncing Net, Jewel at Changi Airport, Singapore by Safdie



Tape Florence, by Palazzo Strozzi + Numen

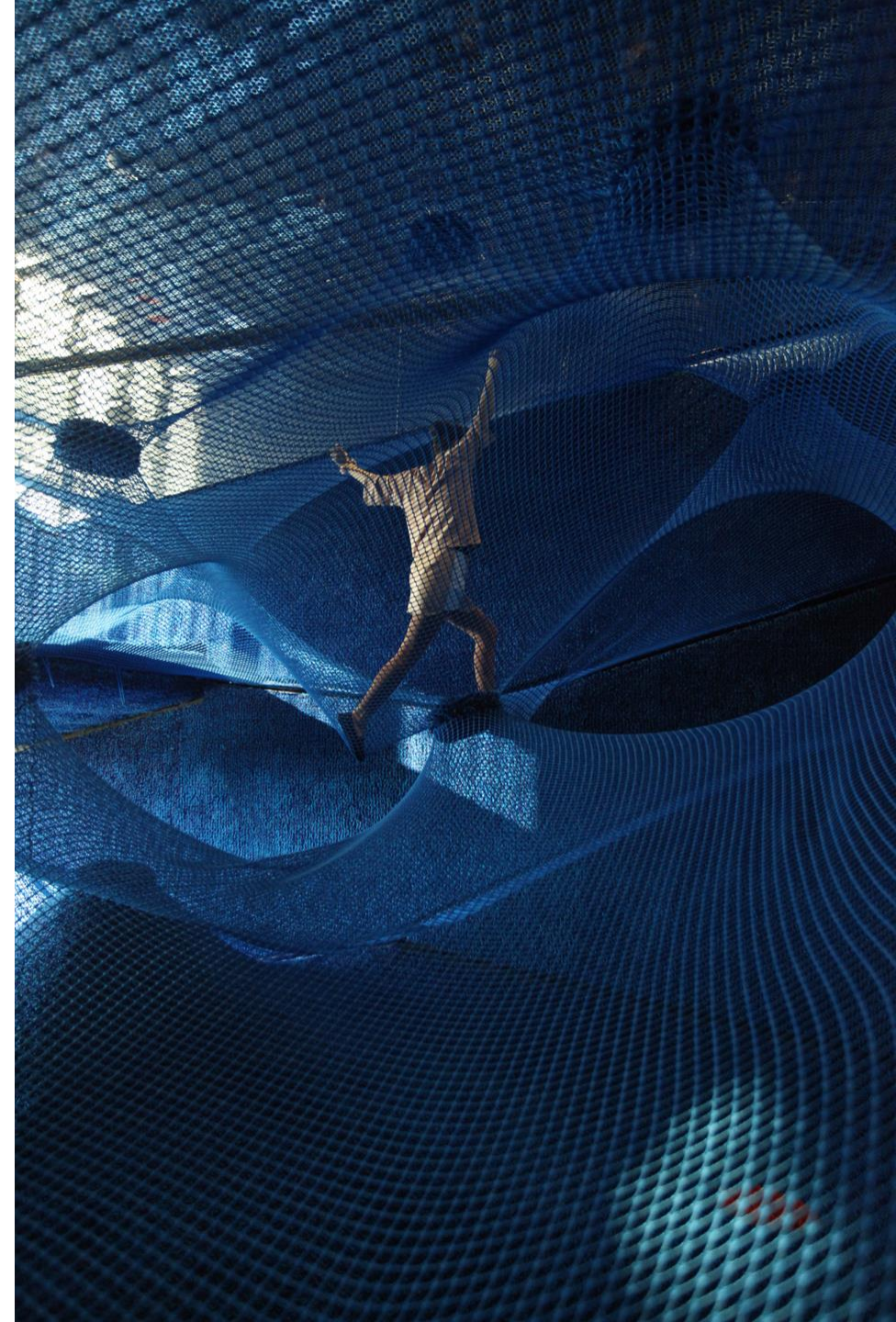
Source: numen.eu/installations/tape/florence/





Net Rovinj, Hotel Amarin 2016, Croatia by Tvrtko Bojić + Numen

Source: numen.eu/installations/net/rovinj/





An experimental staircase made from a suspended rope net

'Net Linz' is a rope-based installation that allows people to move between the floors of Austria's OK Center for Contemporary Art.

Austria's OK Center for Contemporary Art by Numen

Source: architectureanddesign.com.au



Kinetic + Net
Transportation, Logistics,

Fisherman Ship, Volendam

Source: Author

(more) Permanent Structure : Voronoi-based regolith

voids for activities & climbing walls

(less) Permanent Structure : Nets

Low impact & reconfigure-able (for next users)

Light (to transport from Earth)

Strong, Flexible, Easy-grip