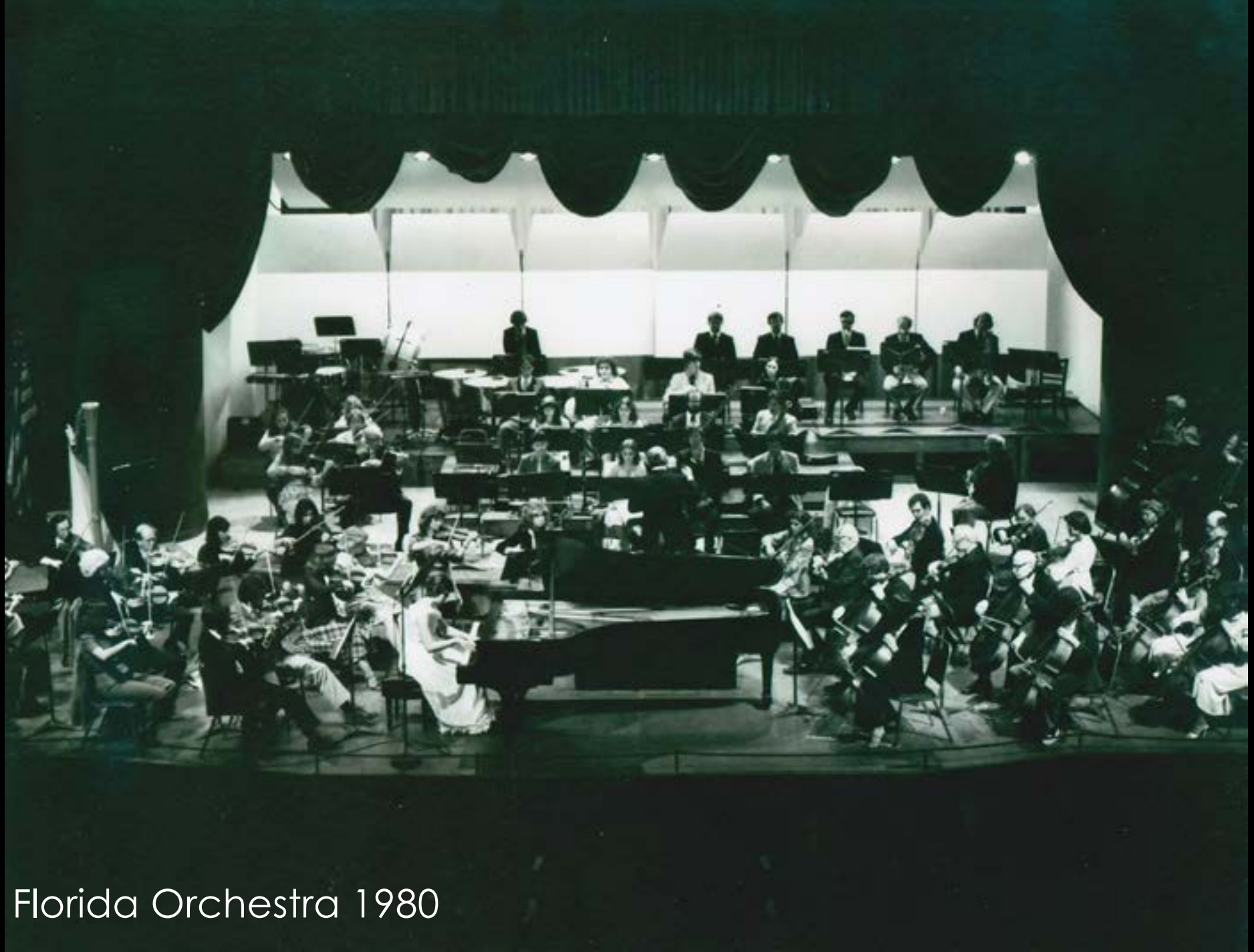
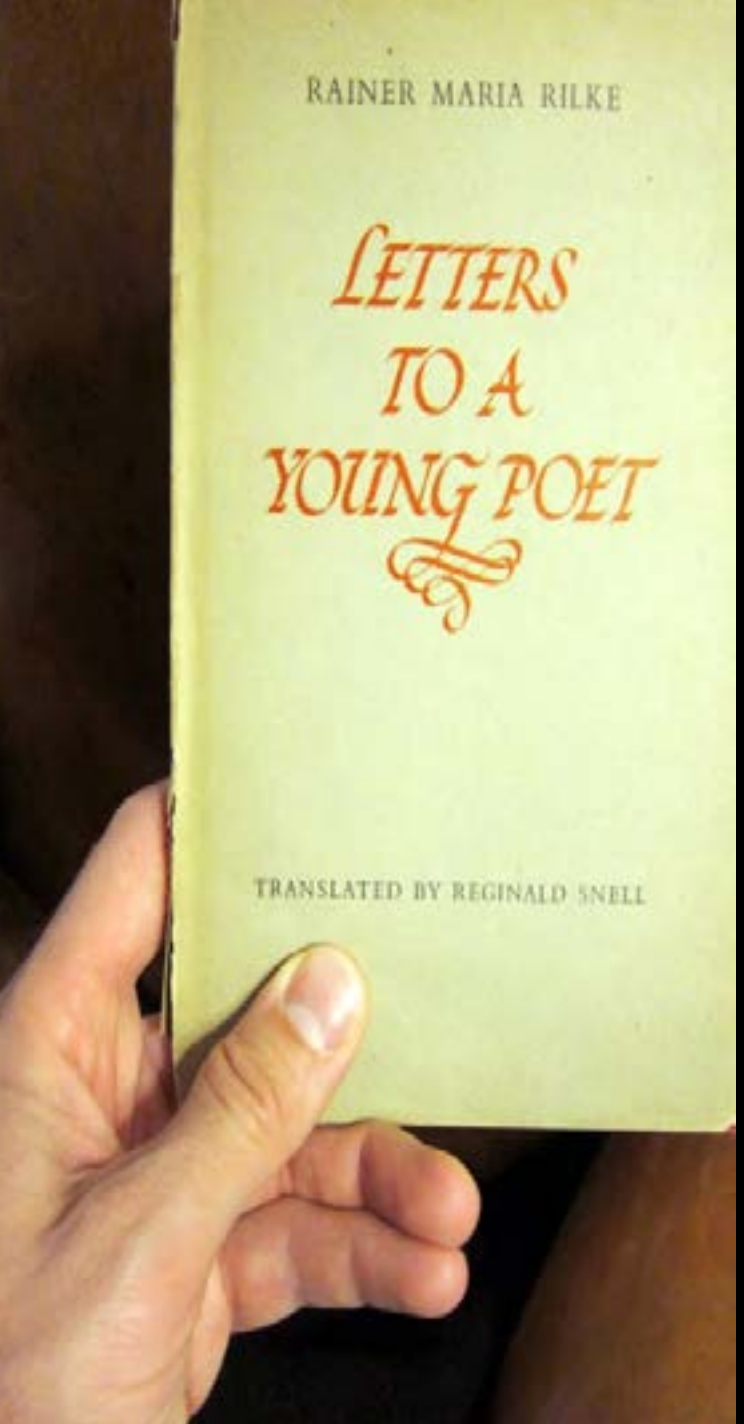
“Be patient toward all that is unsolved in your heart and to try to love the questions themselves like locked rooms and like books that are written in a very foreign tongue. Do not now seek the answers, which cannot be given you because you would not be able to live them. And the point is, to live everything. Live the questions now.“ –Rainer Maria Rilke

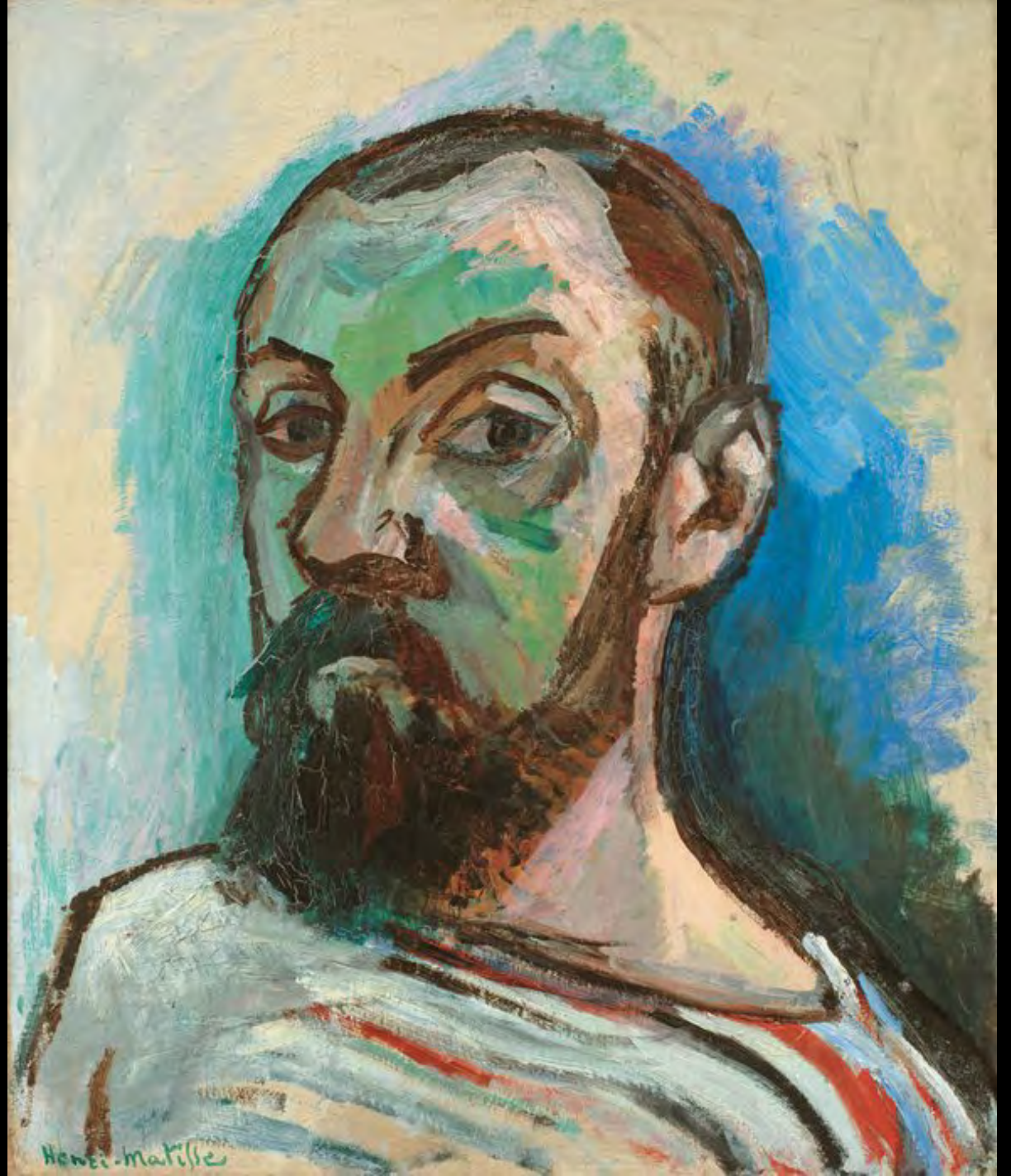


Florida Orchestra 1980



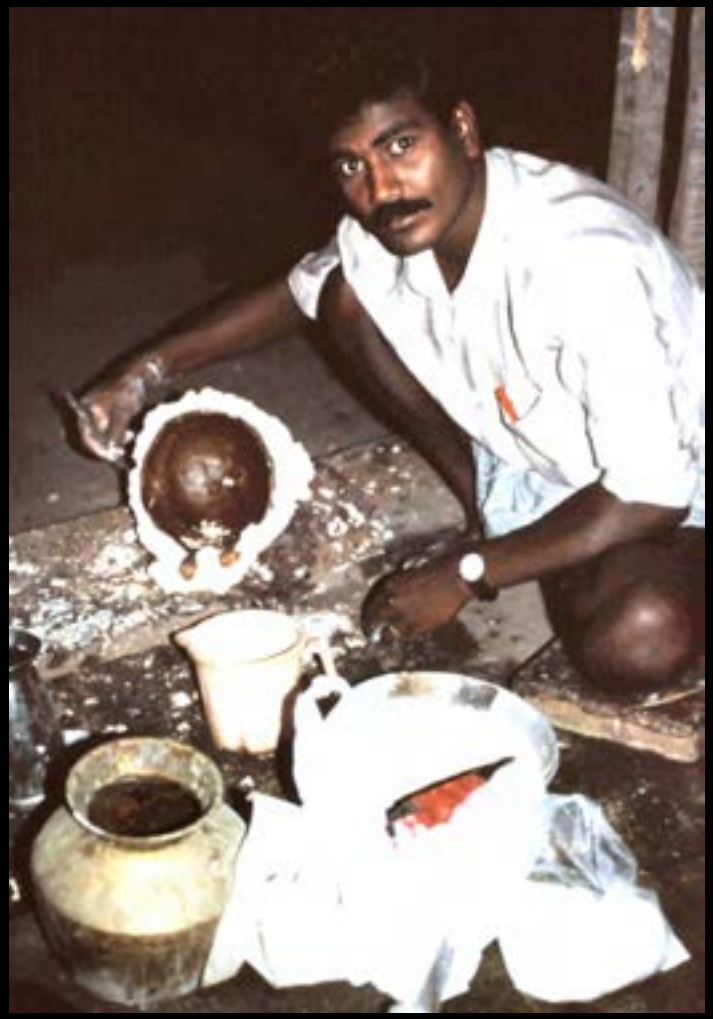
"Be patient toward all that is unsolved in your heart and to try to love the questions themselves like locked rooms and like books that are written in a very foreign tongue. Do not now seek the answers, which cannot be given you because you would not be able to live them. And the point is, to live everything. Live the questions now. Perhaps you will then gradually, without noticing it, live along some distant day into the answer."

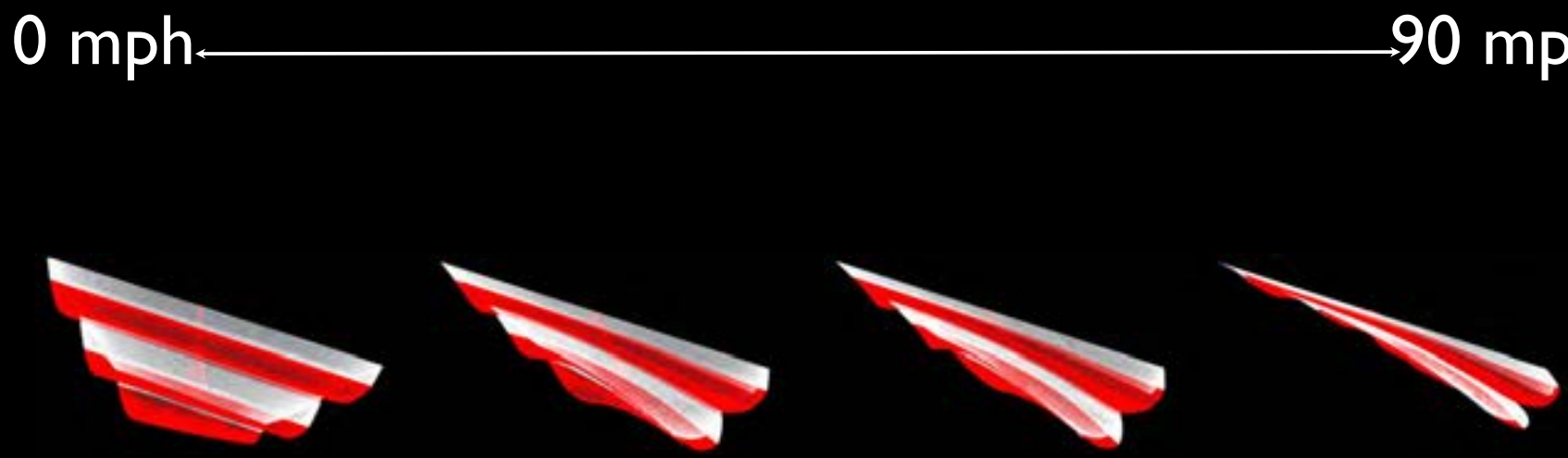
–Rainer Maria Rilke

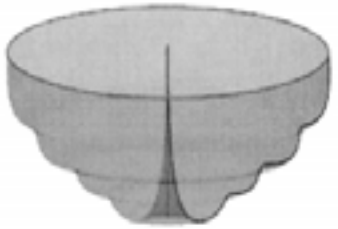

Henri-Matisse


HARVARD - RADCLIFFE
CLASS OF 1987


香港大學
THE UNIVERSITY OF HONG KONG




0 mph
90 mph



Typical form

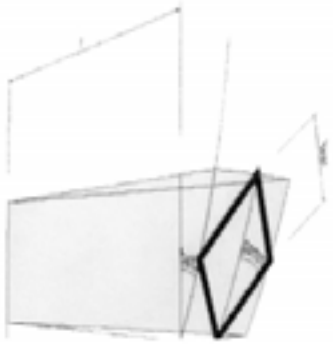
A net consists of *bars* which join *knots* to form *cells*.

The goal is to calculate the shape in which one of Janet's nets hangs between under self weight. To simplify the solution, we restrict ourselves to axisymmetric nets with vertical axis of revolution.

The nets are made like a basketball net with the bars running diagonally, not along the meridians and lines of latitude. Thus the hoop stress and meridional stress are related through the cell geometry.

To find the hanging shape we set up the differential equations for the meridional equilibrium and normal equilibrium. These are simple to solve as an initial value problem, but what we really need is a boundary-value solution where we specify the (r,z) at the center point and at the outside edge.

Terminology



The Equations

$$-W \sin\beta - \frac{\cos\beta\,\sigma_h}{r} + \sigma_a \beta' s == 0$$

Normal equilibrium

$$ds\, r\, W \cos(\beta) - r\, d\sigma_a - dr\, \sigma_a + dr\, \sigma_h == 0$$

Meridional equilibrium

$$\tan^2(\gamma) == \frac{\sigma_h}{\sigma_a}$$

Net in-plane equilibrium

$$\sin\gamma == \frac{2\pi r}{\text{bar nk}}$$

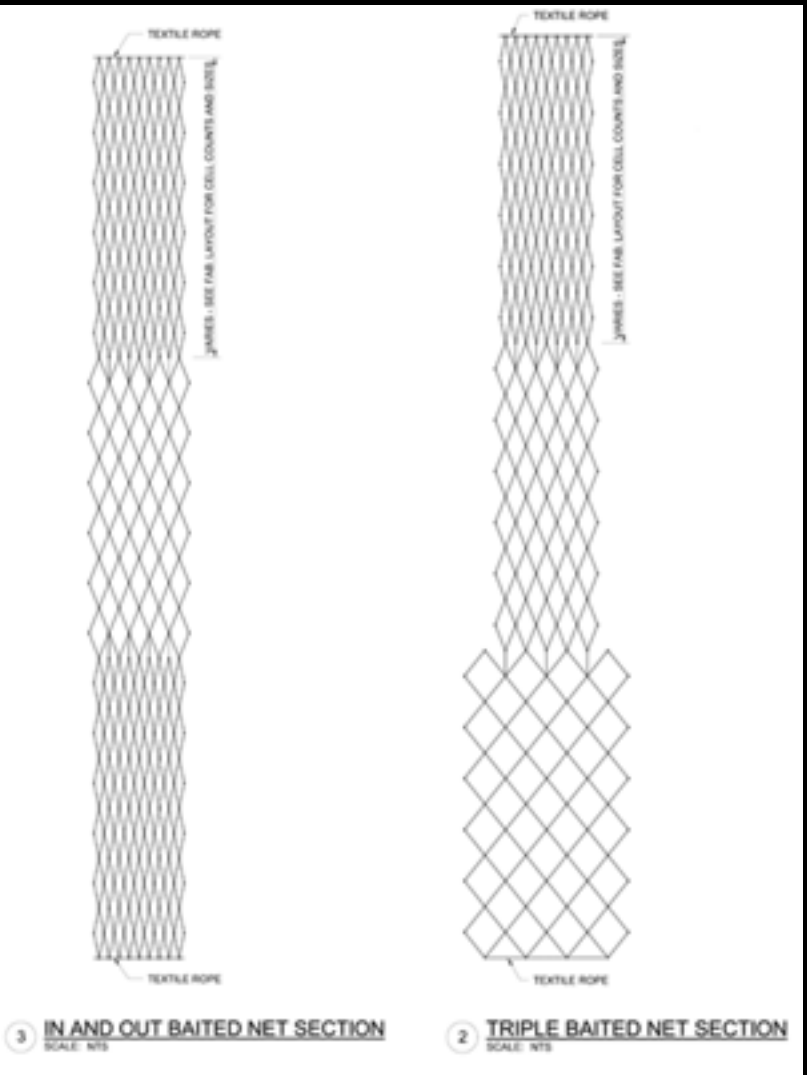
Where the net angle is given by

$$\cos(\gamma) == \frac{ds}{db}$$

and the relation between s and b is

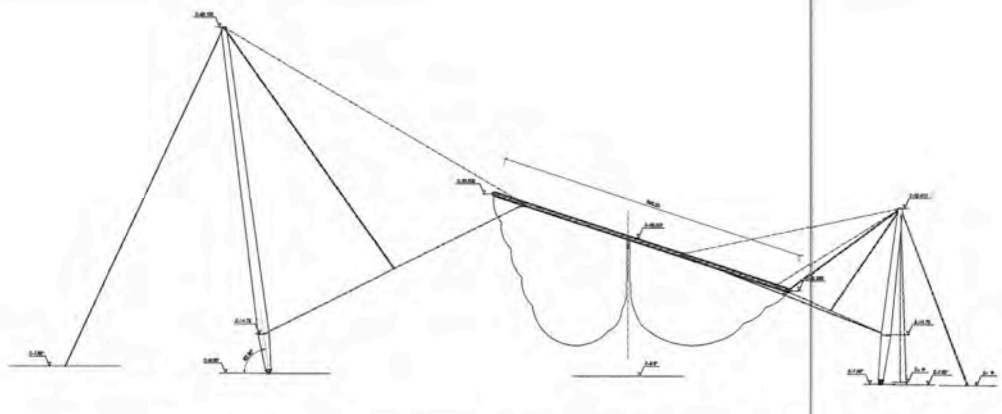
$$\sin(\beta) == \frac{dr}{ds}$$

and the meridian slope is given by

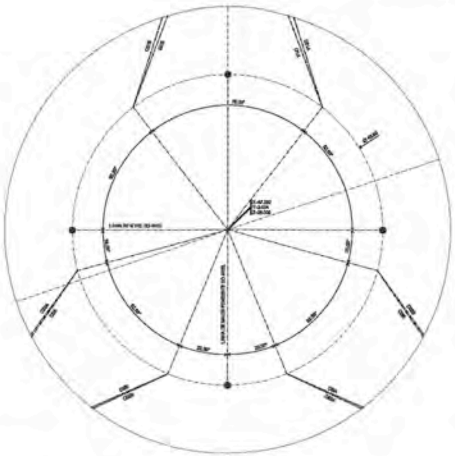


3 IN AND OUT BAITED NET SECTION
SCALE: NTS

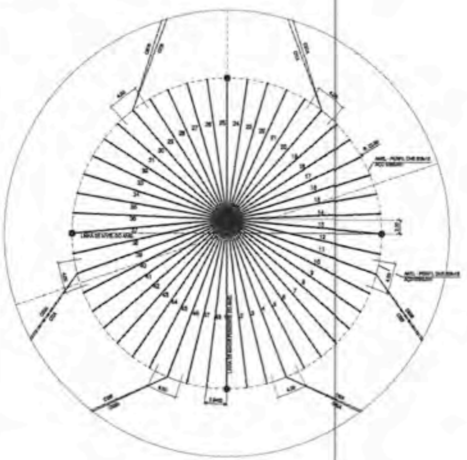
2 TRIPLE BAITED NET SECTION
SCALE: NTS



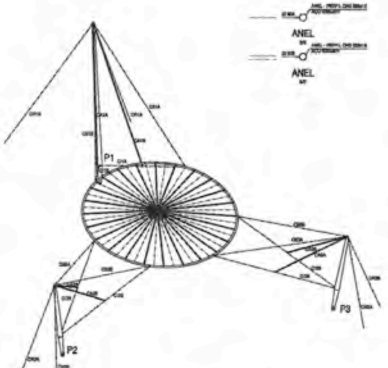
VISTA POR UM PLANO PARALELO AO PLANO VERTICAL QUE CONTÉM A LINHA DE MAIOR PENDENTE DO ANEL



ANEL - VISTA PLANIFICADA
(raios não representados)



RAIOS - VISTA PLANIFICADA



PERSPECTIVA

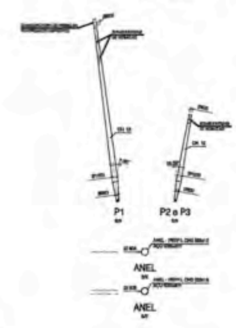
CABOS - CARACTERÍSTICAS

CABOS	TIPO	DIÂMETRO (mm)	[illegible]	[illegible]
DE RETENÇÃO CR		40	1500	180
SUPERIORES CS1		40	1500	180
SUPERIORES CS2/CS3		24	500	58
INFERIORES CI		24	500	58
RAIOS		13	170	19
AUXILIARES CA		13	170	19

Fu - VALOR CARACTERÍSTICO DA CARGA DE ROTURA

CABO	[illegible]
C1A	25
C1B	25
C2A	50
C2B	125
C3A	125
C3B	50

CABO	(kN)
CR1A	330
CR1B	330
CR2A	200
CR2B	240
C3A	240
C3B	200



MATERIAIS:

Pré-Esforço dos Raios (kN)				
CABOS - RAIO	1ª Fase	2ª Fase	3ª Fase	Total
1 a 13, 38 a 48	10	—	—	10
15 a 37	10	10	—	20
14 a 17 e 35 e 36	10	10	5	25
19 a 21 e 33 e 32	10	10	—	20
22 a 29	10	—	—	10

- COMPRIMENTOS TEÓRICOS DOS CABOS

CABO	(m)
CA1A	43,361
CA1B	43,361
CA2A	24,557
CA2B	25,258
CA3A	25,250
CA3B	24,887
C1A	44,390
C1B	44,382
C2A	28,003
C2B	37,763
C3A	37,763
C3B	38,033
CR1A	37,533*
CR1B	37,878*
CR2A	37,437*
CR2B	37,351*
CR3A	37,381*
CR3B	37,379*
CI1A	53,396
CI1B	53,396
CI2A	[illegible]
CI2B	41,857
CI3A	41,857
CI3B	[illegible]

* - CONFIRMAR EM OBRA APÓS IMPLANTAÇÃO DAS FUNDAÇÕES

Polis - Matosinhos

afassociados

Escultura na Praça Cidade S. Salvador

Estruturas

Definição geométrica da estrutura

S/E 1/250

1572 00 02 00 01 02 PE01

Portugal

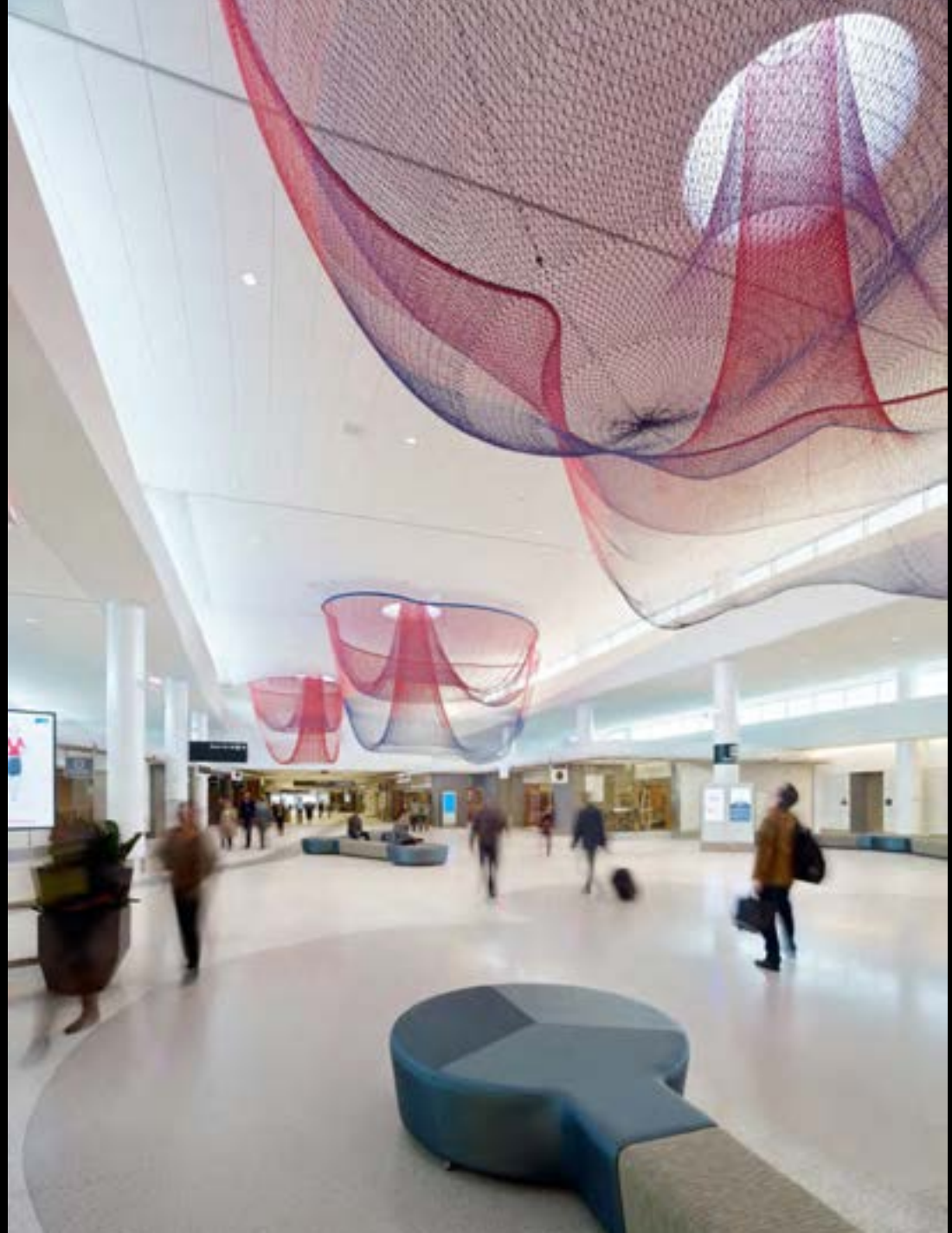
Portugal, officially the Portuguese Republic, is a country located in Southwestern Europe, on the Iberian Peninsula. It is the westernmost country of mainland Europe, and is bordered by the Atlantic Ocean to the west and south and by Spain to the north and east. Apart from continental Portugal, the Portuguese Republic holds sovereignty over the Atlantic archipelagos of Azores and Madeira, which are autonomous regions of Portugal. Source: wikipedia.org

The Sea Anemone I by Mário Eloi Castro



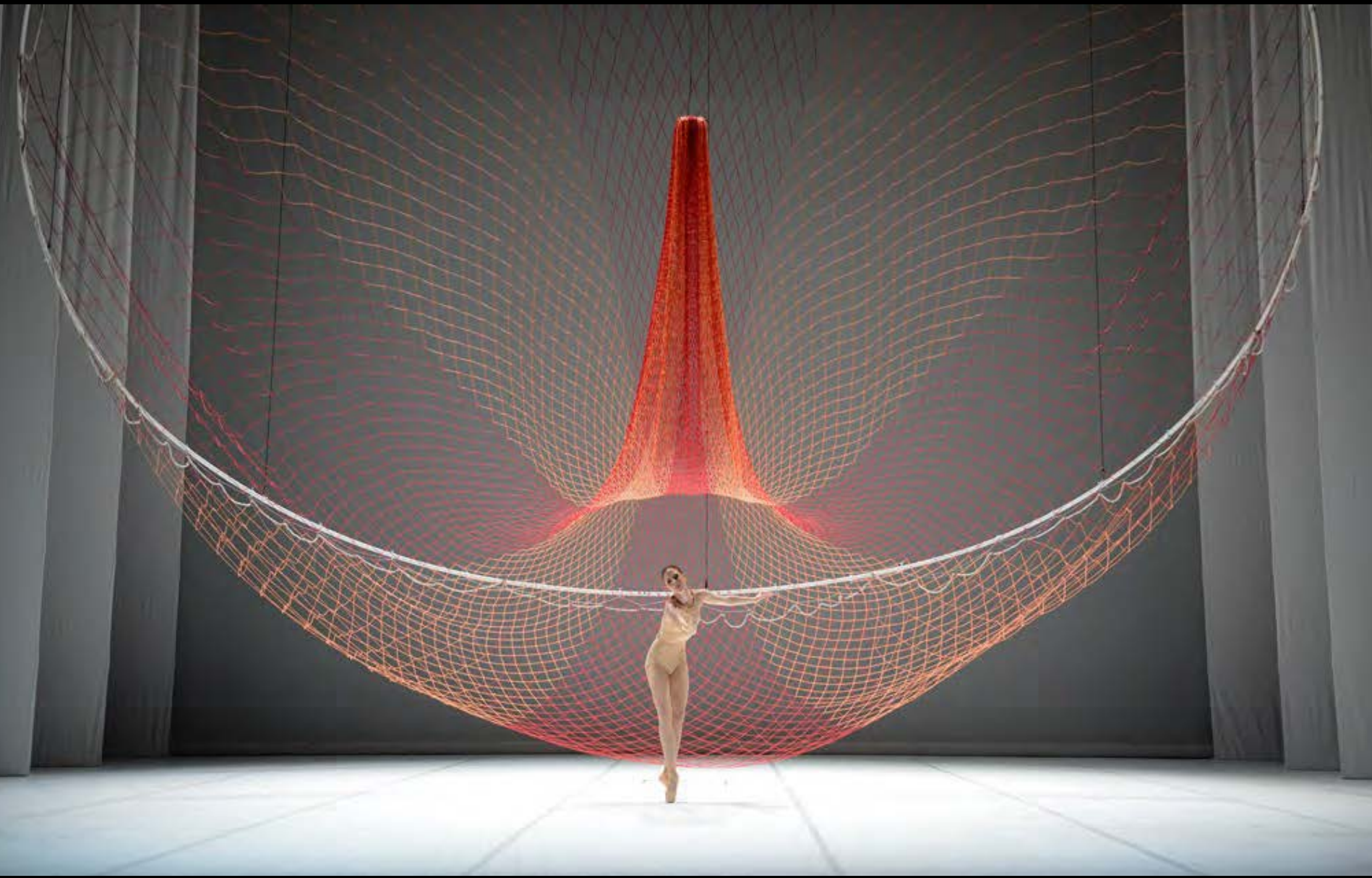


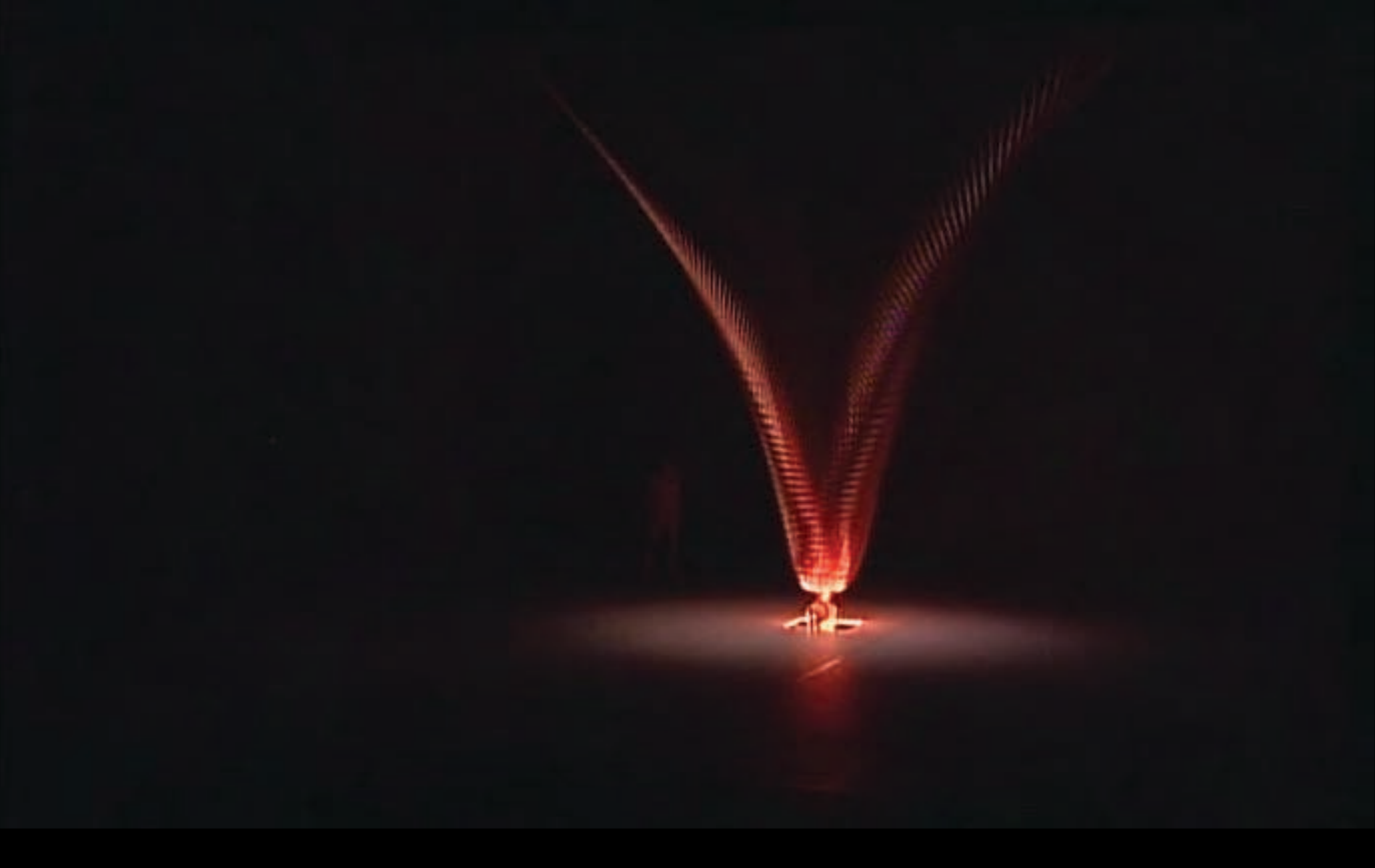



YMCA

Experimentation

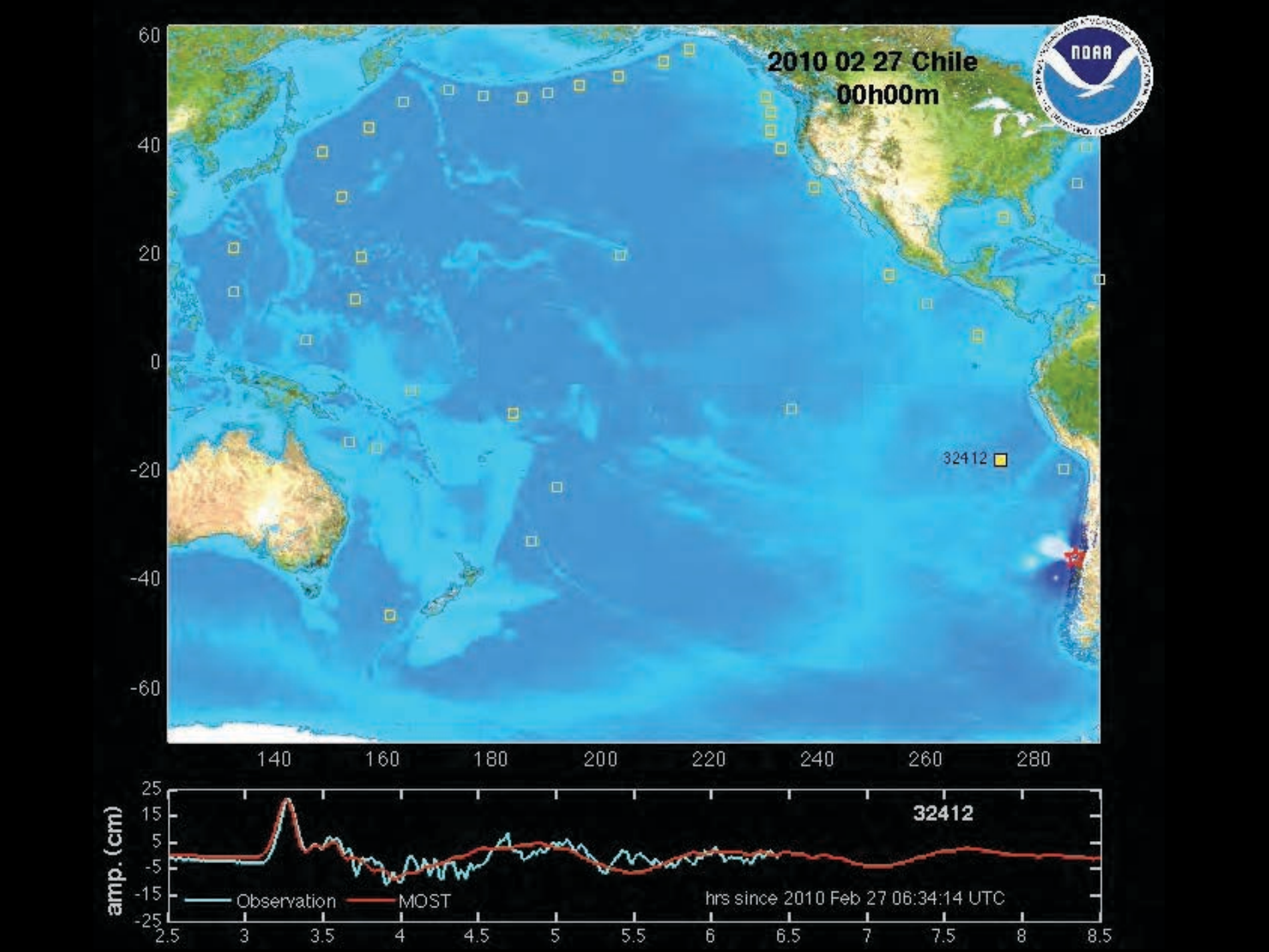




Meaning

Countries of the Americas

Antigua & Barbuda
Argentina
Bahamas
Barbados
Belize
Bolivia
Brazil
Canada
Chile
Colombia
Costa Rica
Cuba
Dominican Republic
Ecuador
El Salvador
Grenada
Guatemala
Guyana
Haiti
Honduras
Jamaica
Mexico
Nicaragua
Panama
Paraguay
Peru
St. Kitts & Nevis
St. Lucia
St. Vincent & The Grenadines
Suriname
Trinidad & Tobago
Uruguay
United States of America
Venezuela


2010 02 27 Chile
00h00m
NOAA
32412
60
40
20
0
-20
-40
-60
140
160
180
200
220
240
260
280
32412
amp. (cm)
25
15
5
-5
-15
-25
Observation
MOST
hrs since 2010 Feb 27 06:34:14 UTC
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4
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5
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6
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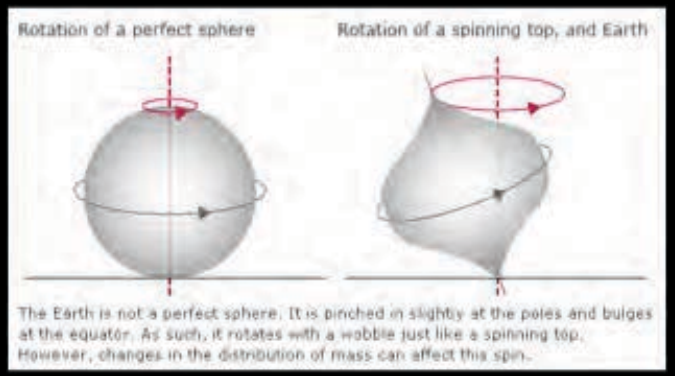
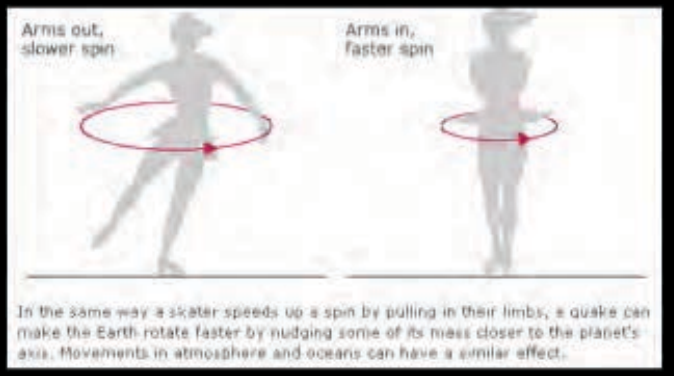
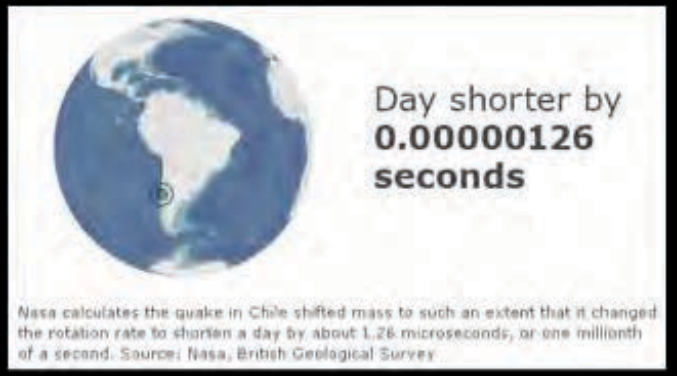
7
7.5
8
8.5



The Earth is not a perfect sphere. It is pinched in slightly at the poles and bulges at the equator. As such, it rotates with a wobble just like a spinning top. However, changes in the distribution of mass can affect this spin.

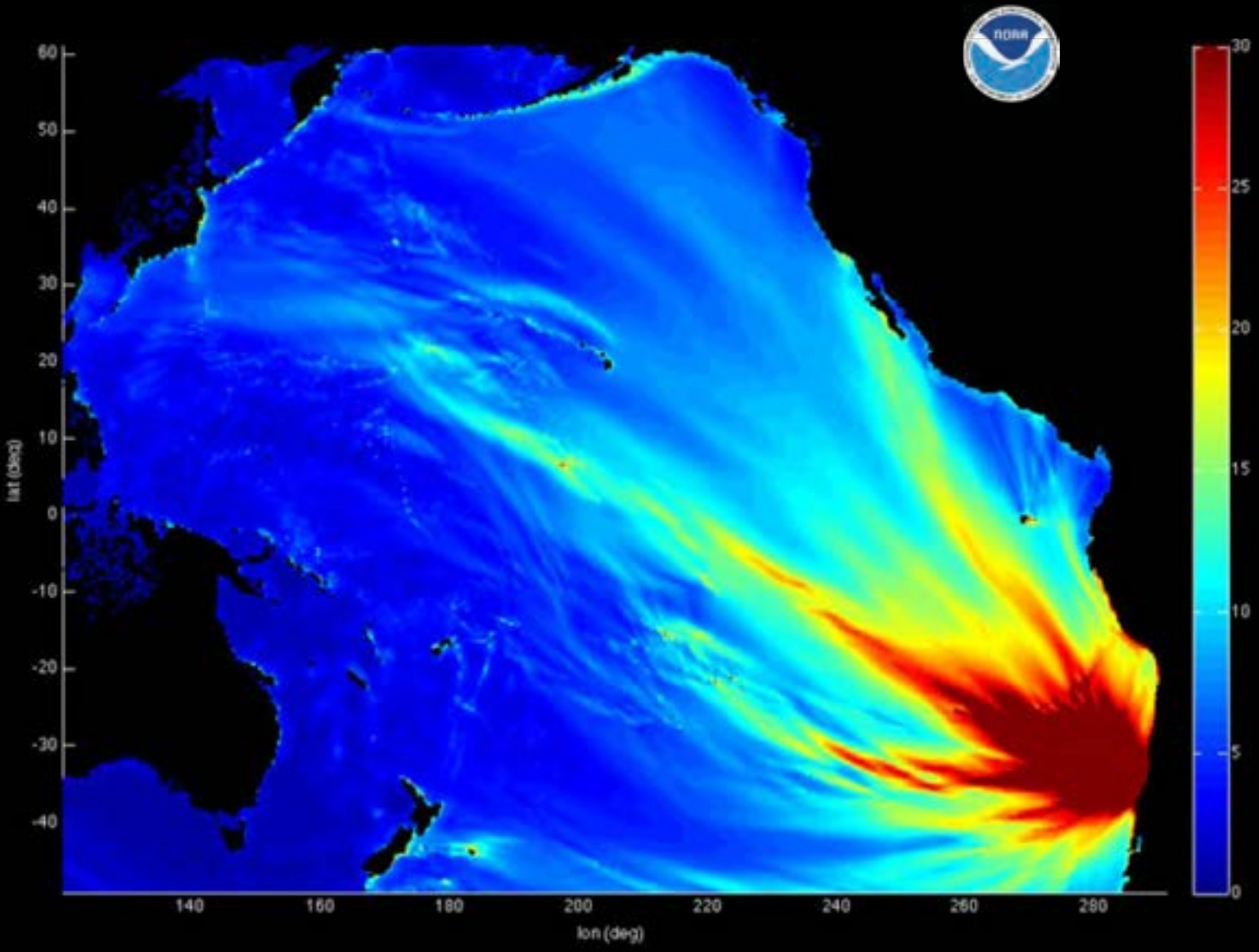


In the same way a skater speeds up a spin by pulling in their limbs, a quake can make the Earth rotate faster by nudging some of its mass closer to the planet's axis. Movements in atmosphere and oceans can have a similar effect.

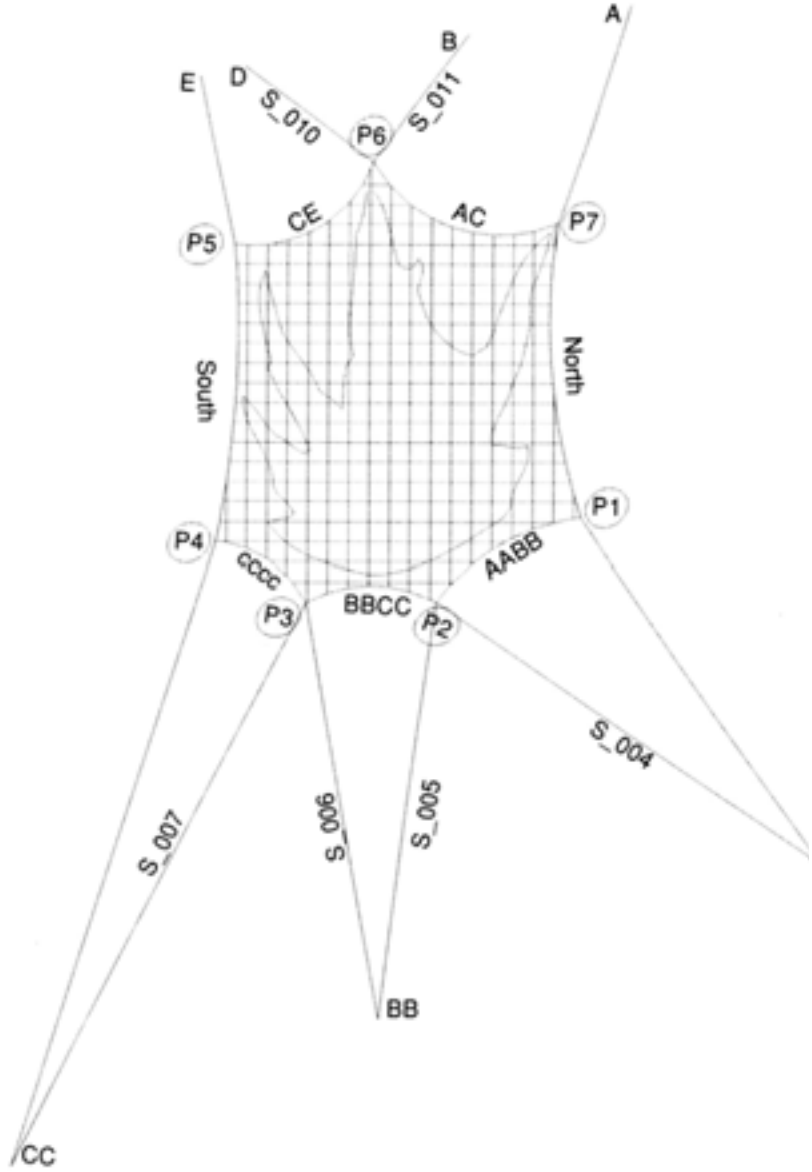


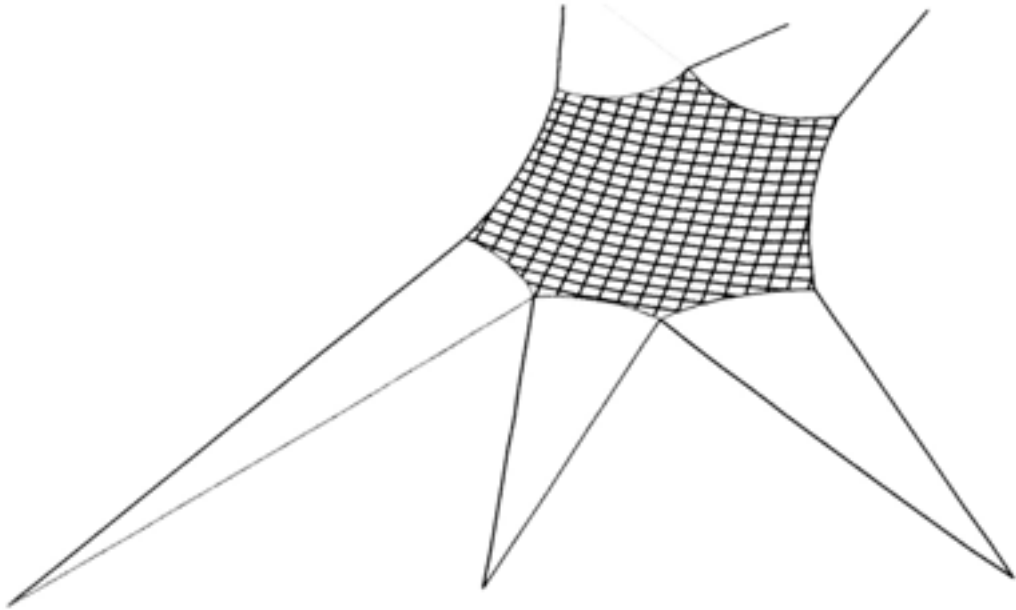
Nasa calculates the quake in Chile shifted mass to such an extent that it changed the rotation rate to shorten a day by about 1.26 microseconds, or one millionth of a second. Source: Nasa, British Geological Survey

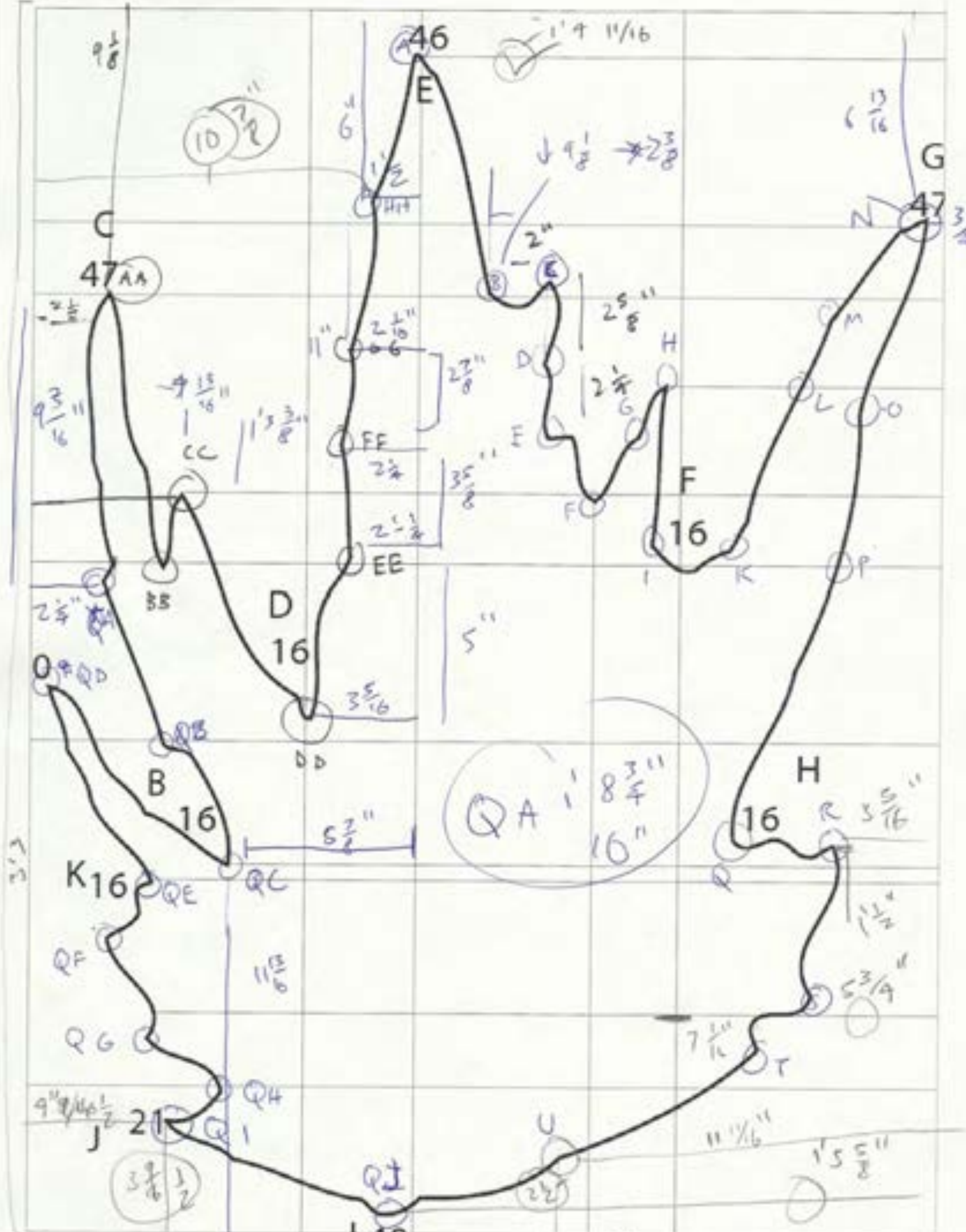
National Oceananic and Atmospheric Administration



Chile 2010 Maximum Amplitude (cm)


A
B
E
D
S_010
S_011
P6
CE
AC
P7
P5
South
North
P1
P4
CCCC
AABB
P3
BBCC
P2
S_004
S_007
S_006
S_005
BB
CC





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QA
QB
QC
QD
QE
QF
QG
QH
5"

Sydney

Amsterdam


Amsterdam, 2013

Singapore

Prague

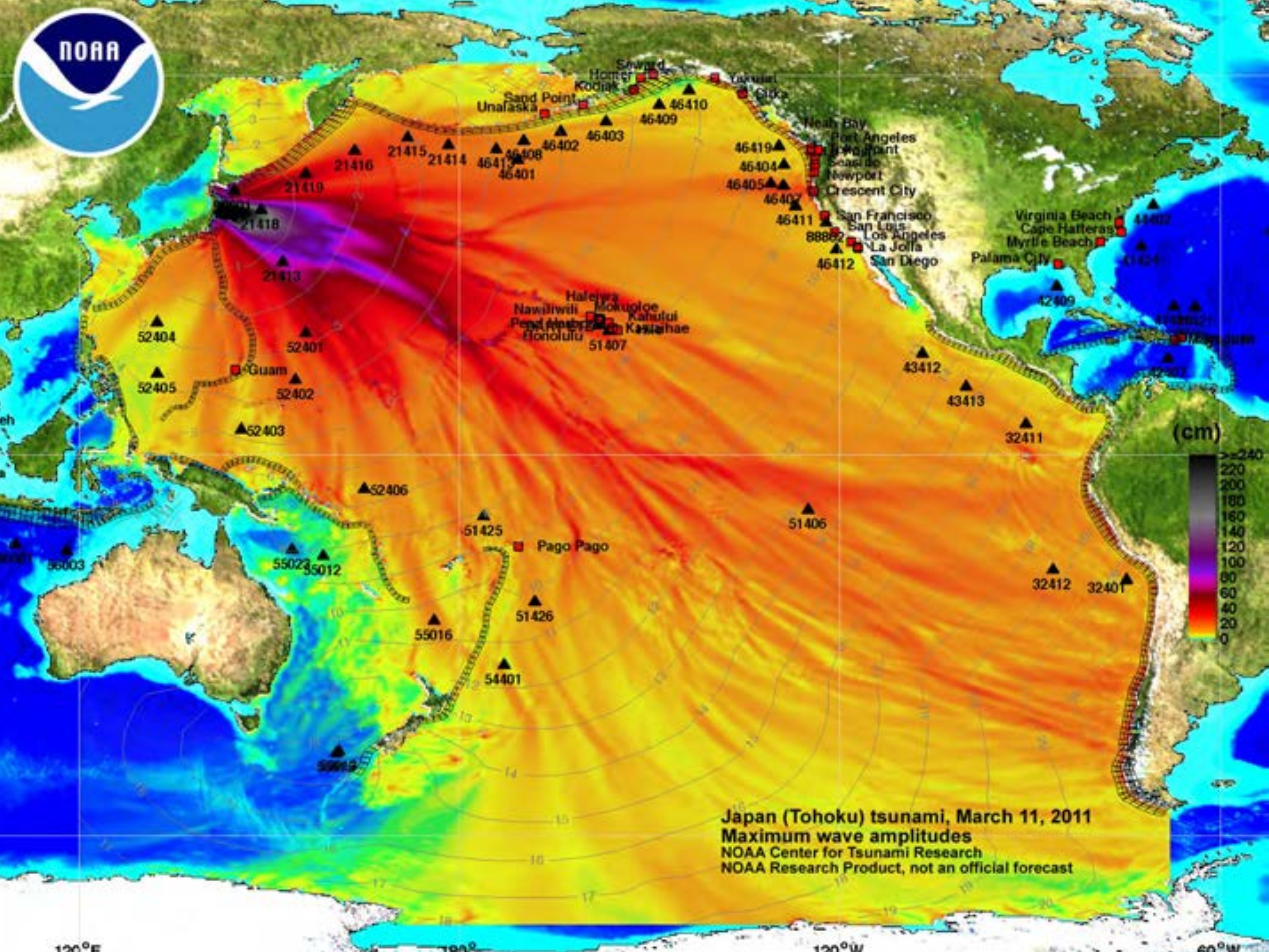
Shanghai

Santiago, Chile

Montreal

Montreal

Hong Kong


Japan (Tohoku) tsunami, March 11, 2011
Maximum wave amplitudes
NOAA Center for Tsunami Research
NOAA Research Product, not an official forecast
(cm)
>=240
220
200
180
160
140
120
100
80
60
40
20
0
Seward
Homer
Kodiak
Sand Point
Unalaska
Yakutat
Sitka
Neah Bay
Port Angeles
Seaside
Newport
Crescent City
San Francisco
Los Angeles
La Jolla
San Diego
Virginia Beach
Cape Hatteras
Myrtle Beach
Haleiwa
Mokuoloe
Nawiliwili
Kahului
Honolulu
Guam
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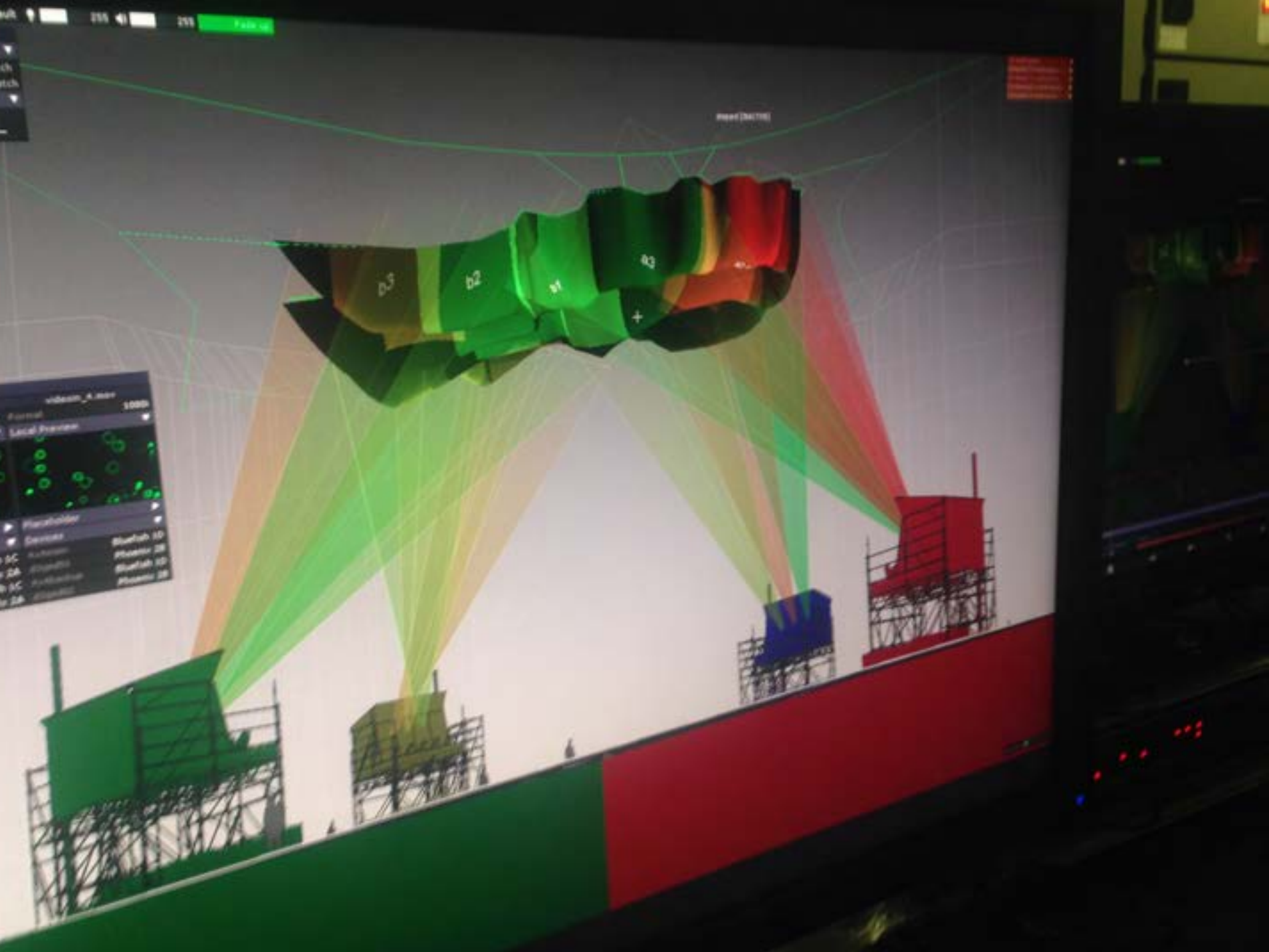
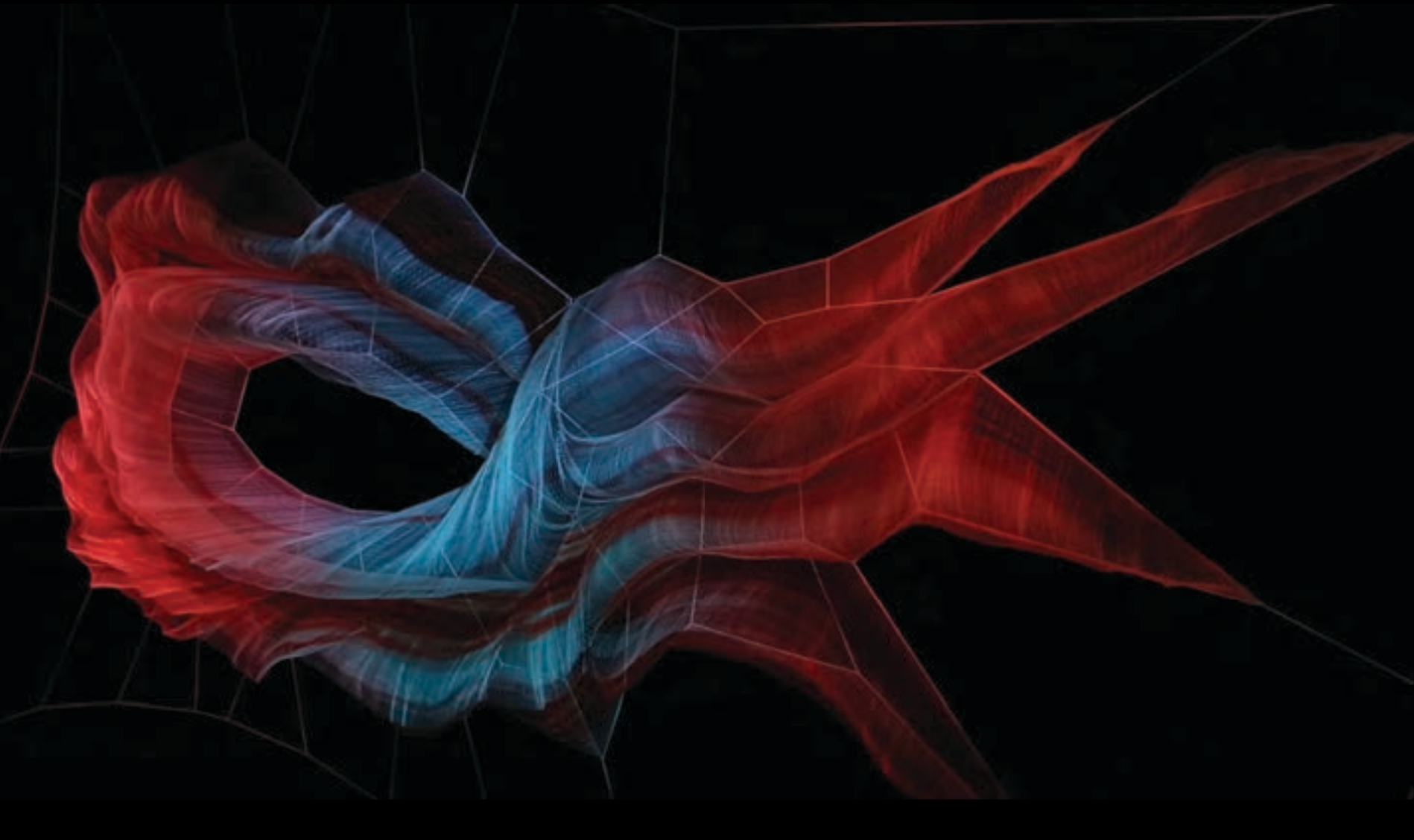
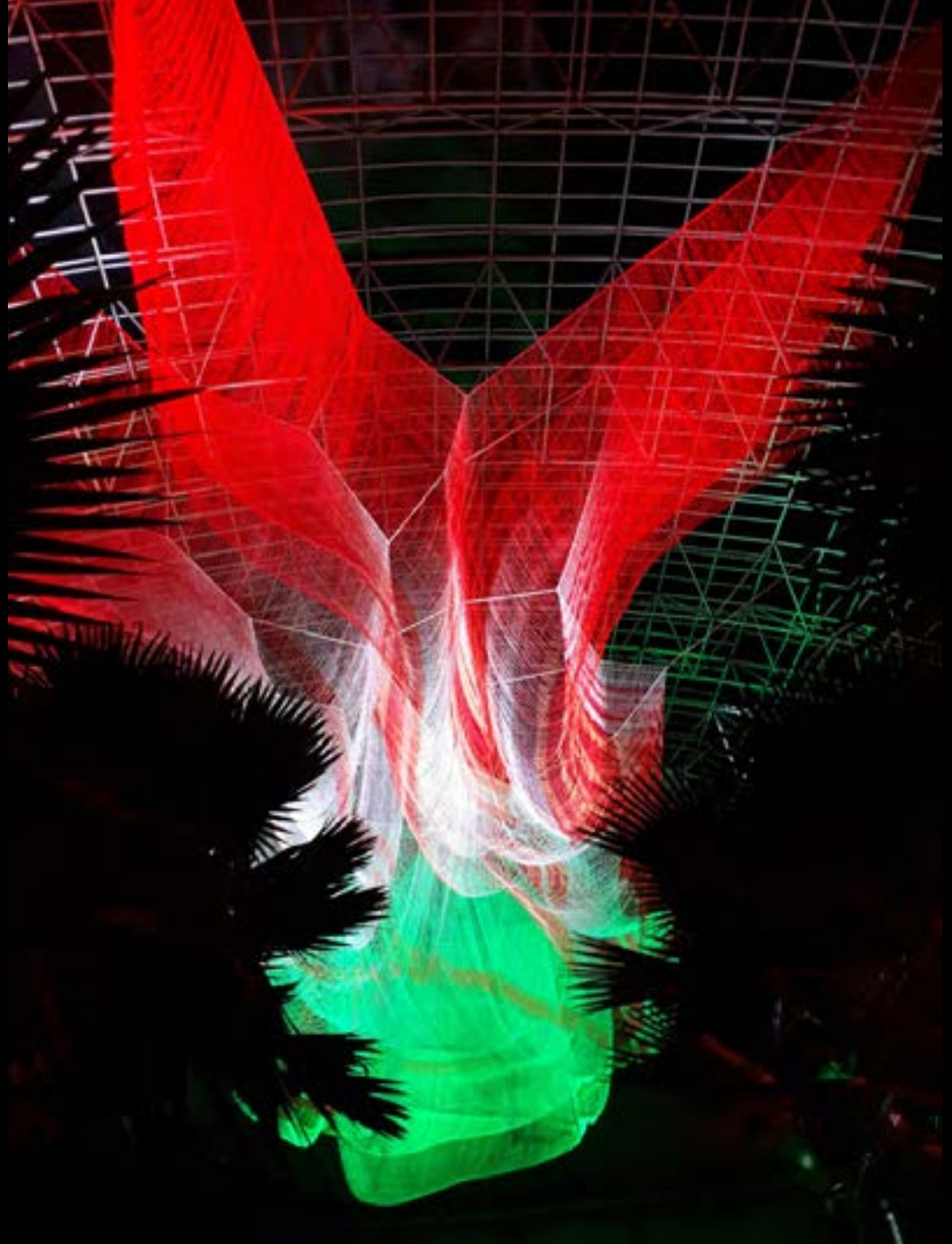
42409


ARUP

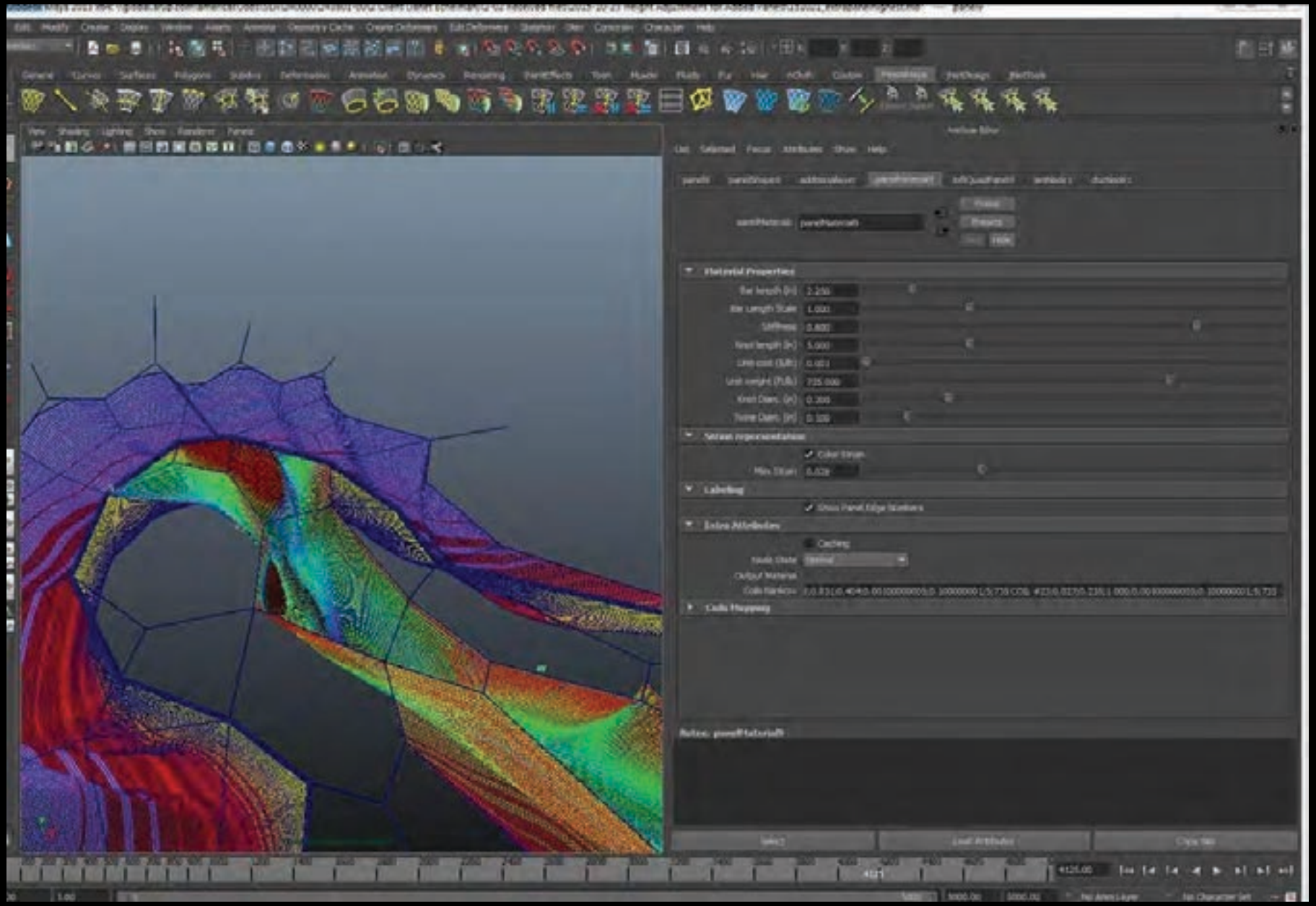

b3
b2
b1
q3

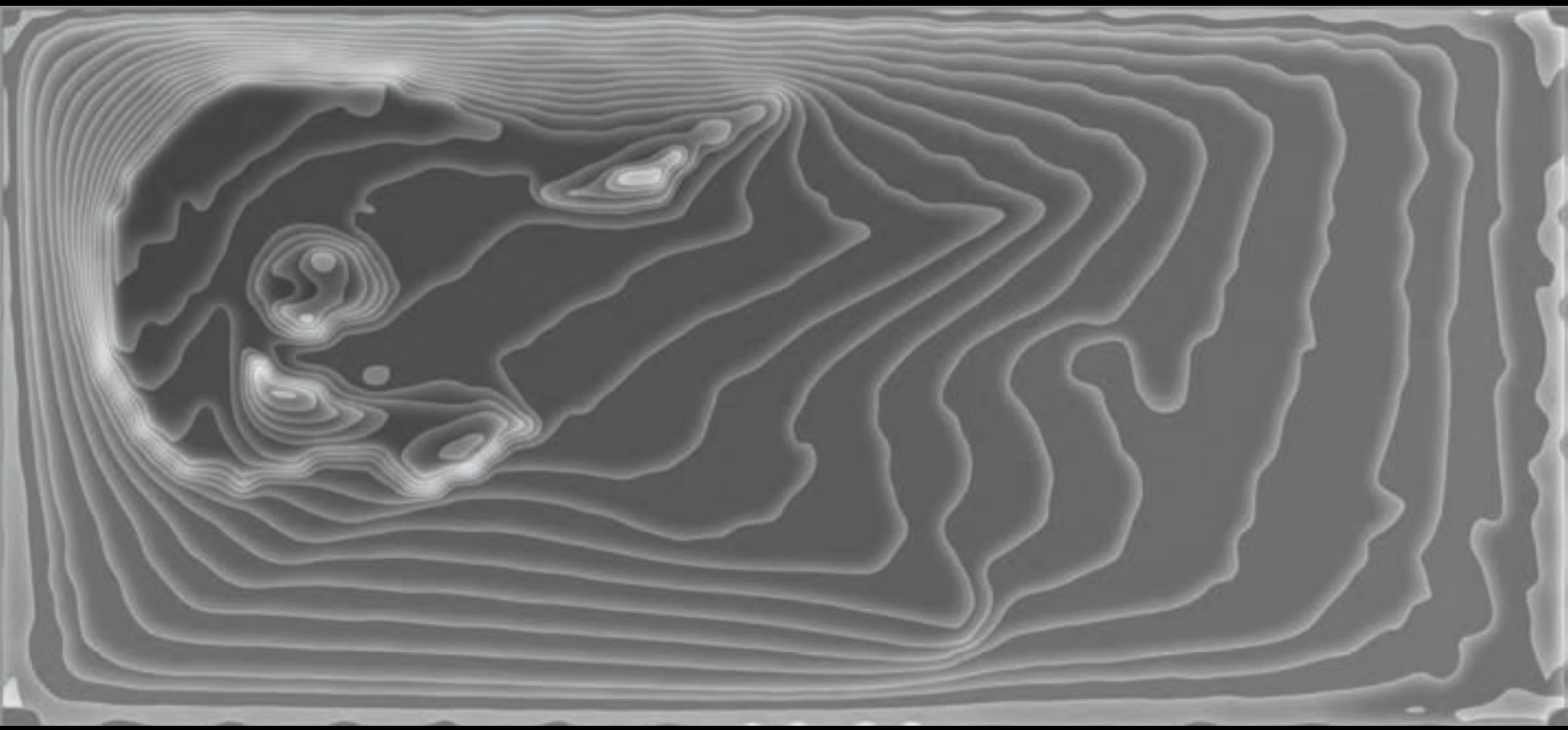




Mexico City


EMAAR





michelleobama
Renwick Gallery...

FOLLOWING

49.5k likes 3d

michelleobama The First Lady and the #NordicVisit spouses enjoyed a bit of WONDER today at the @Smithsonian's #RenwickGallery.

load more comments

suxiaoqiankite Its beautiful

clyeardie We visited there last fall! Loved the museum□

whitelion857 That is breathtaking!

kayden319 @katyanngilmore this reminds me of your amazing art!!

katyanngilmore @kayden319 yes, huge fan of Janet echelman ! □

sararuthee @katyanngilmore at first glance I thought this was yours ;)

mjshanahan20 Wow

jasonwaskey @ewaskey why haven't we seen this?

Add a comment...

dnlreynolds
Renwick Gallery

FOLLOW

janet_echelman, felemaye, witkoochocinco, lethalshooter, ardamarge, drlovegrove, arehmet, shutterproofphotography and aluinsqui like this

17h

dnlreynolds Fishnet gazing at Janet Echelman's light-shifting Japan tsunami, which mirrors the map of energy released across the Pacific Ocean after the 2011 natural disaster.#renwickgallery

Add a comment...

valeasciutti FOLLOW

stephijvm, marwahselia, elenairrera, tommyandlottie, shopcocomarie, marshawilia and juanalacontenta like this 12h

valeasciutti Melting with art, as we become part of the exhibition #renwickgallery #washingtondc

Add a comment...

The Washington Post

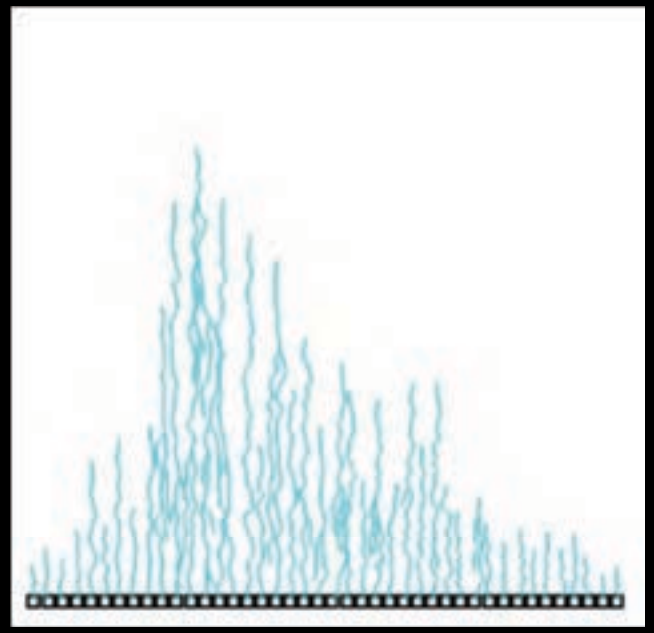
Lifestyle

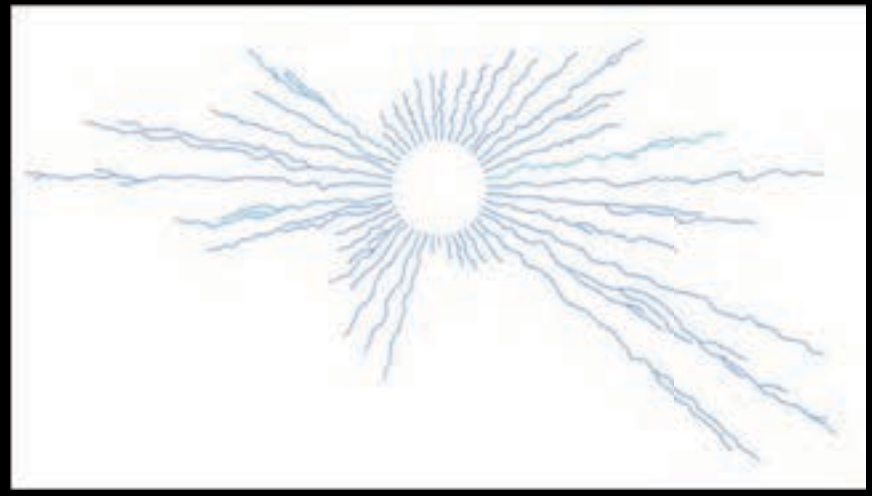
The stunning art luring Instagrammers to the Renwick

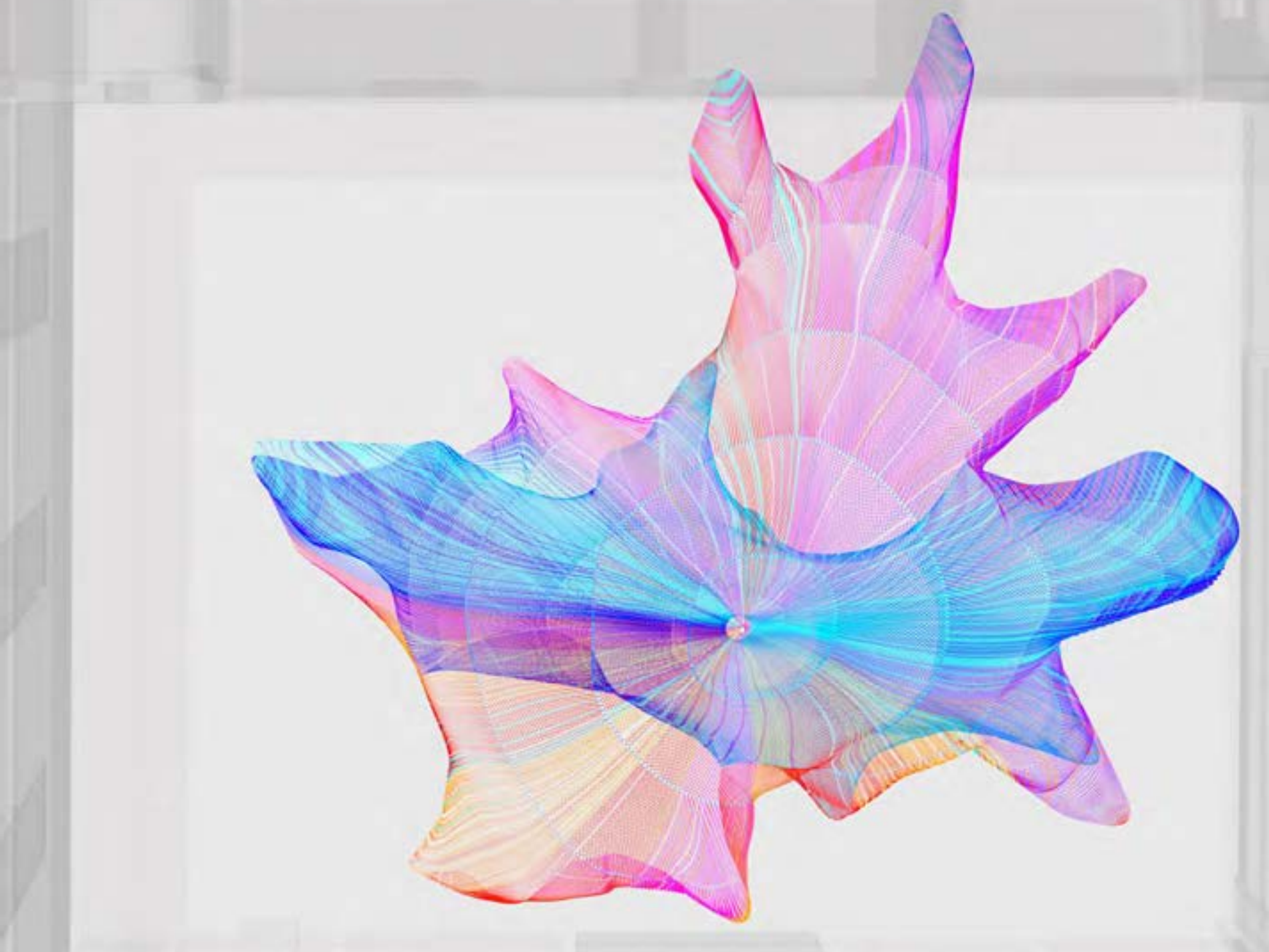
Some visitors lie on the floor to view Janet Echelman's suspended mesh sculpture, which depicts the energy levels released across the Pacific Ocean during the March 2011 earthquake and tsunami in Japan. (Ishani Sharma)

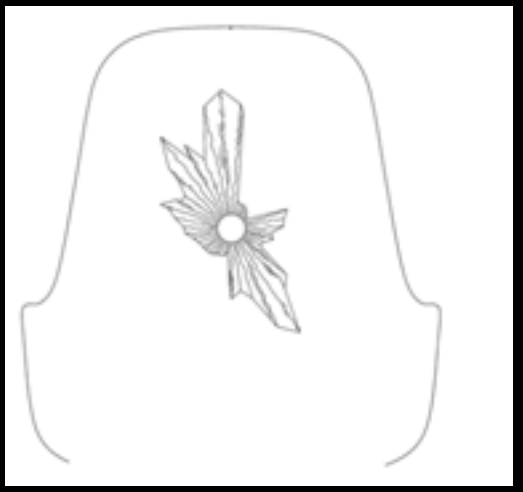
PANORAMIC PLAN OF THE PRINCIPAL

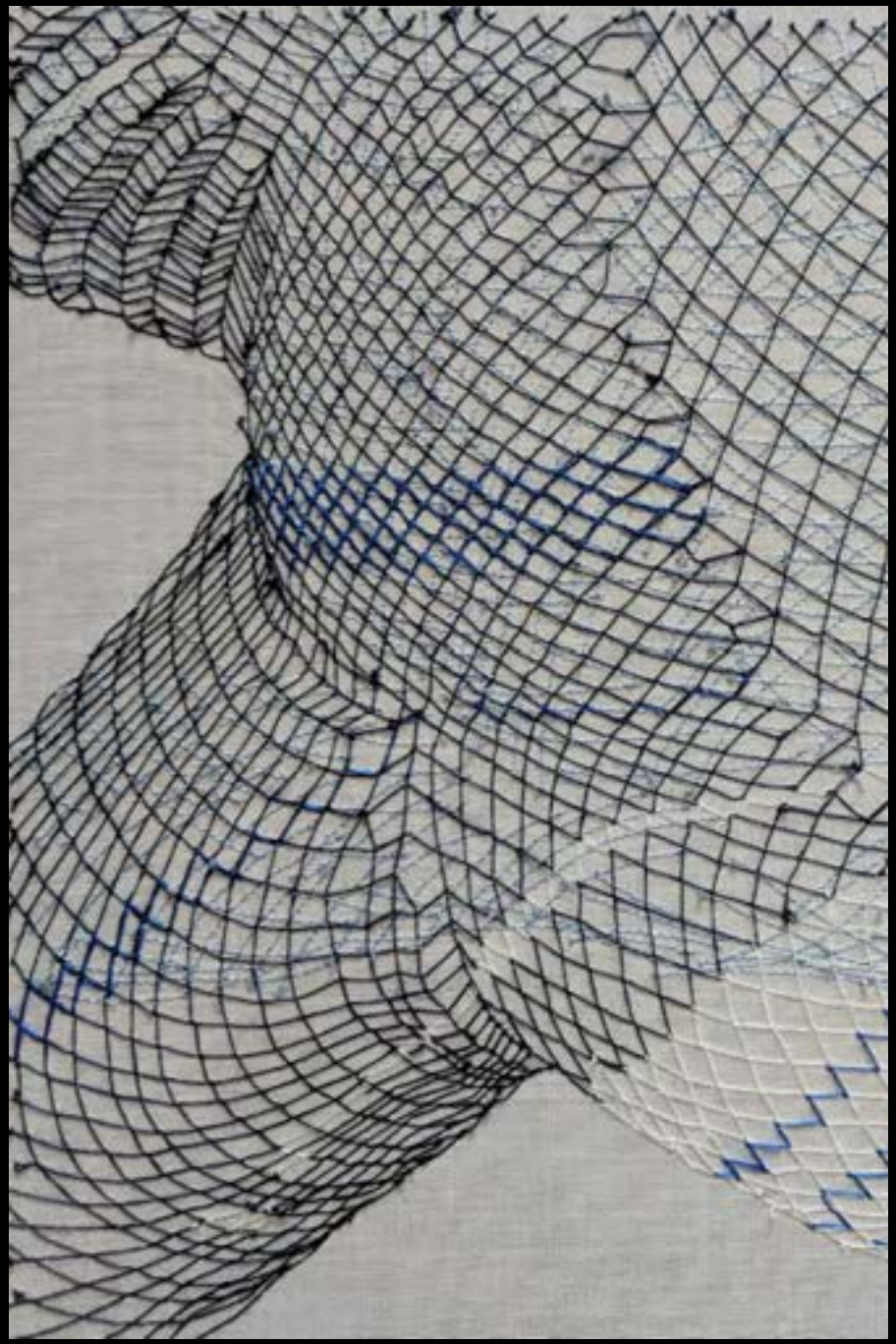
RIVERS AND LAKES.

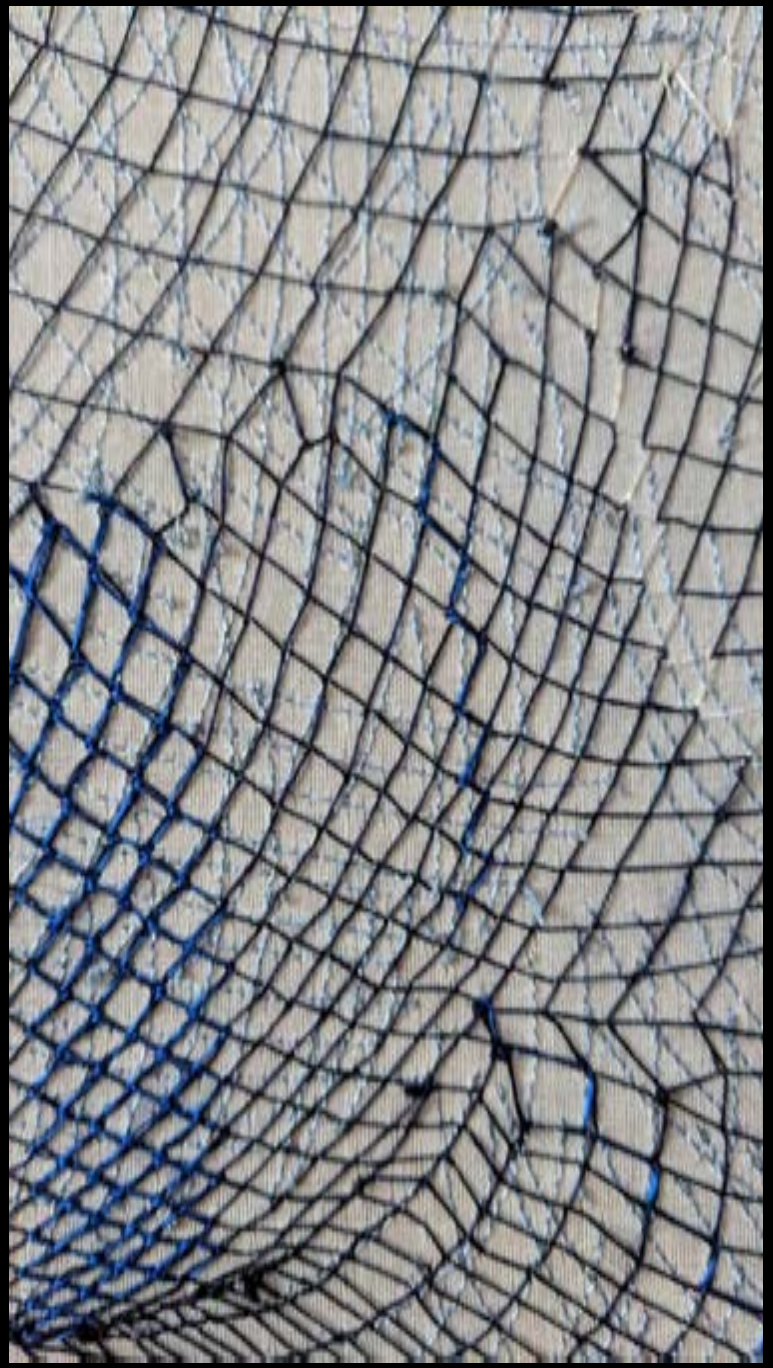


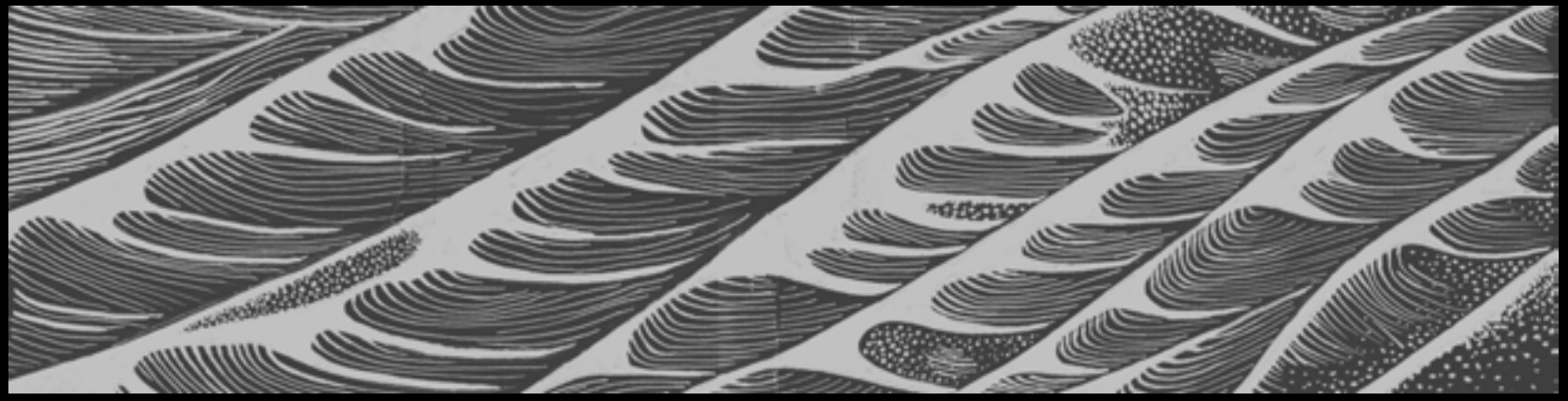


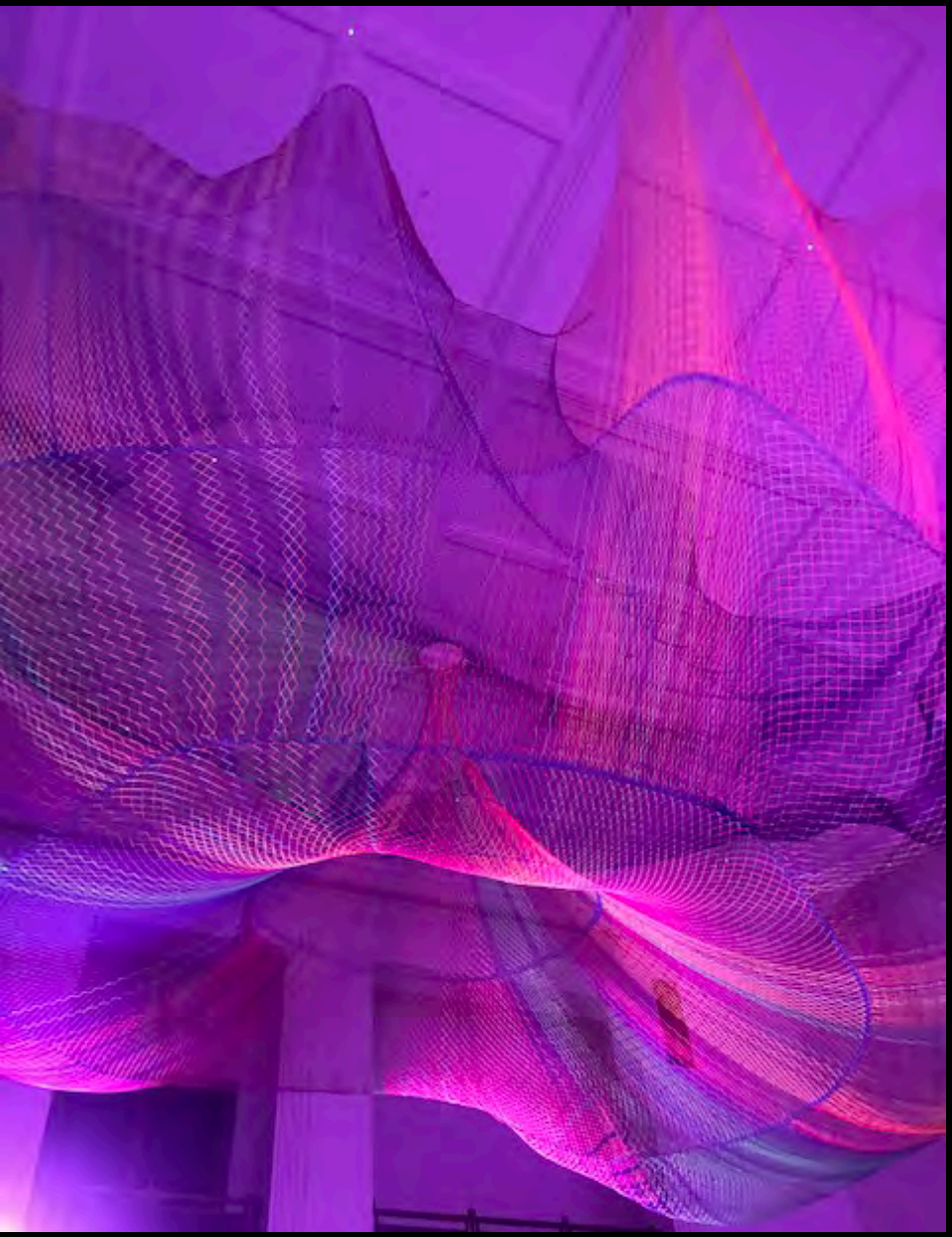


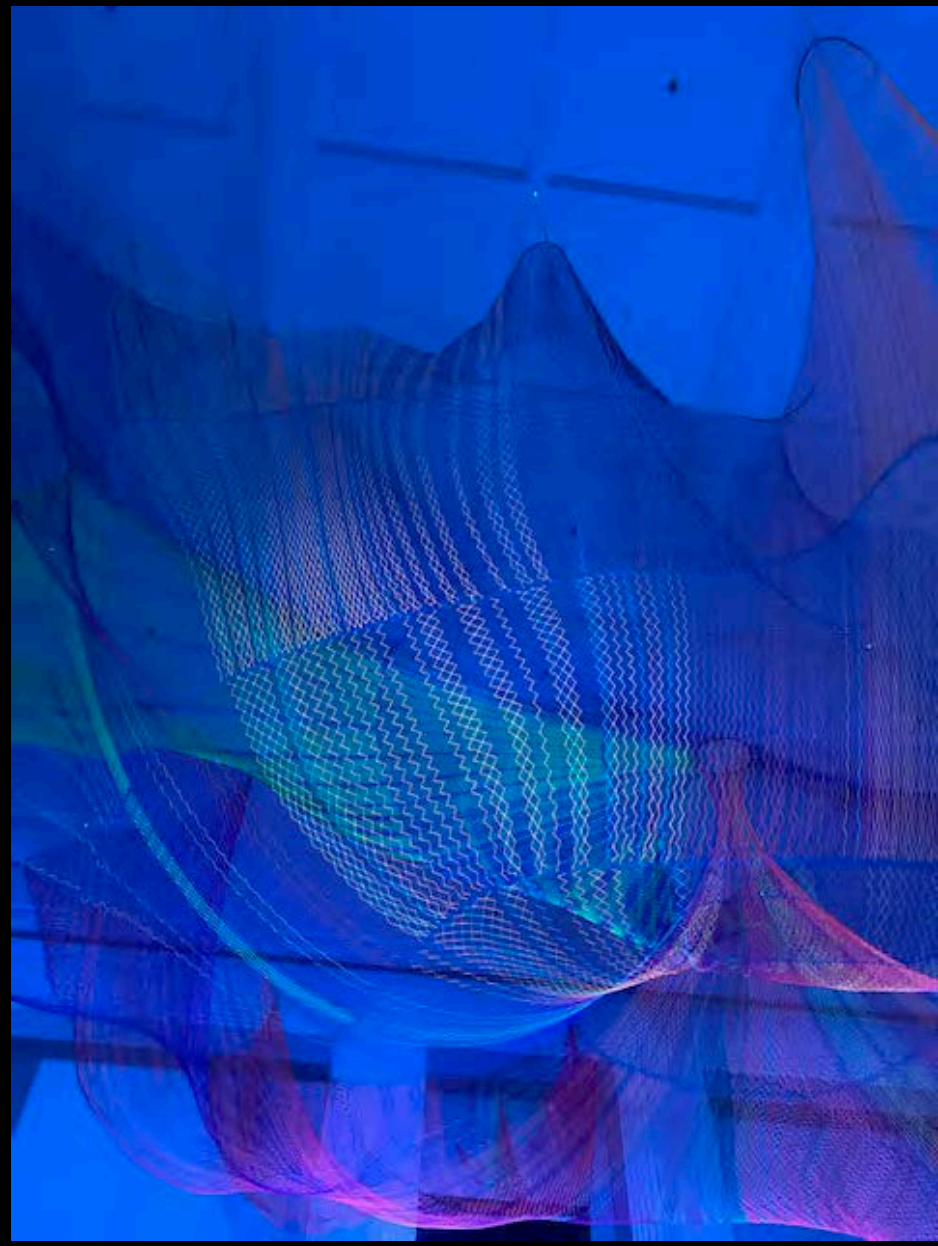




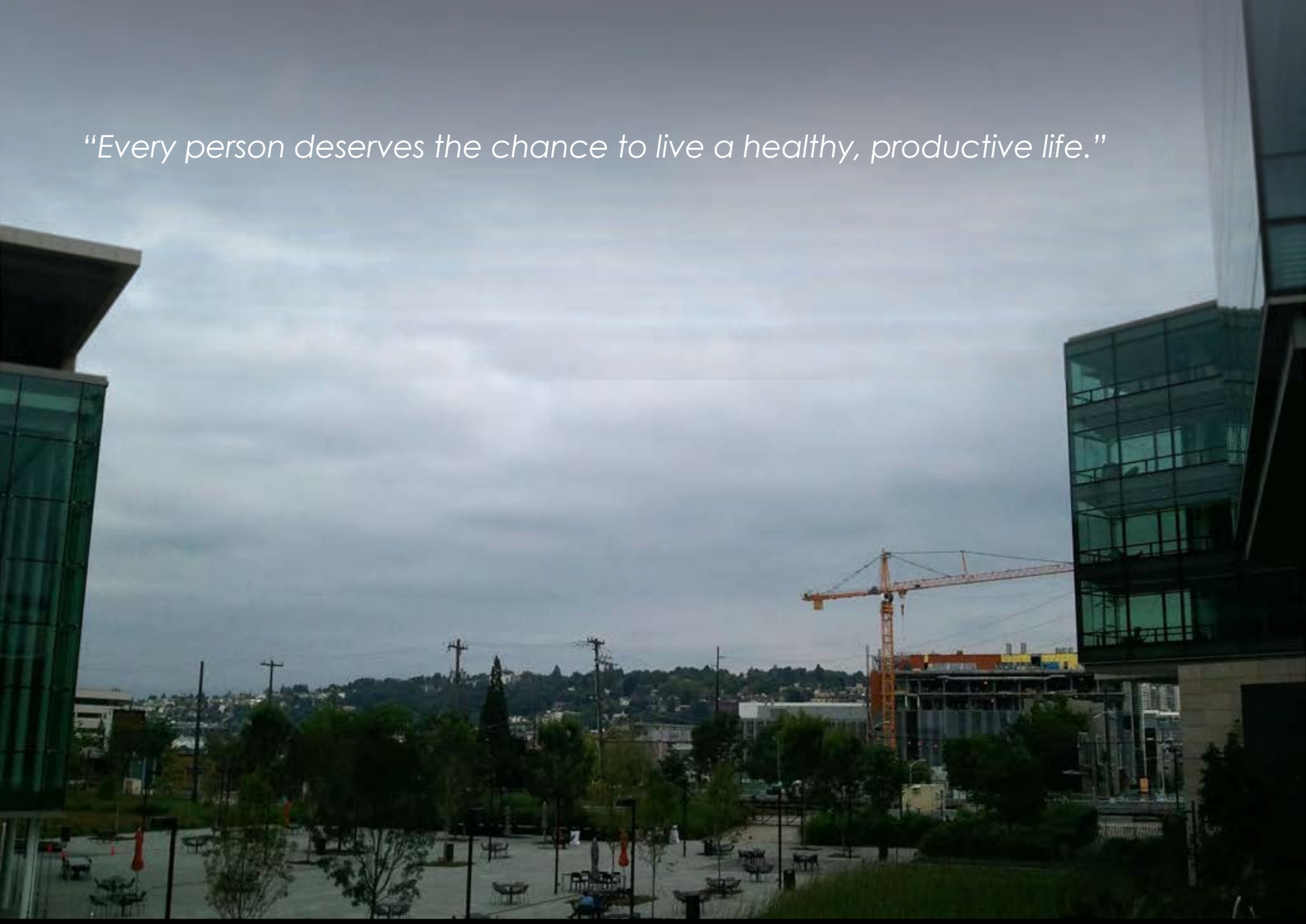






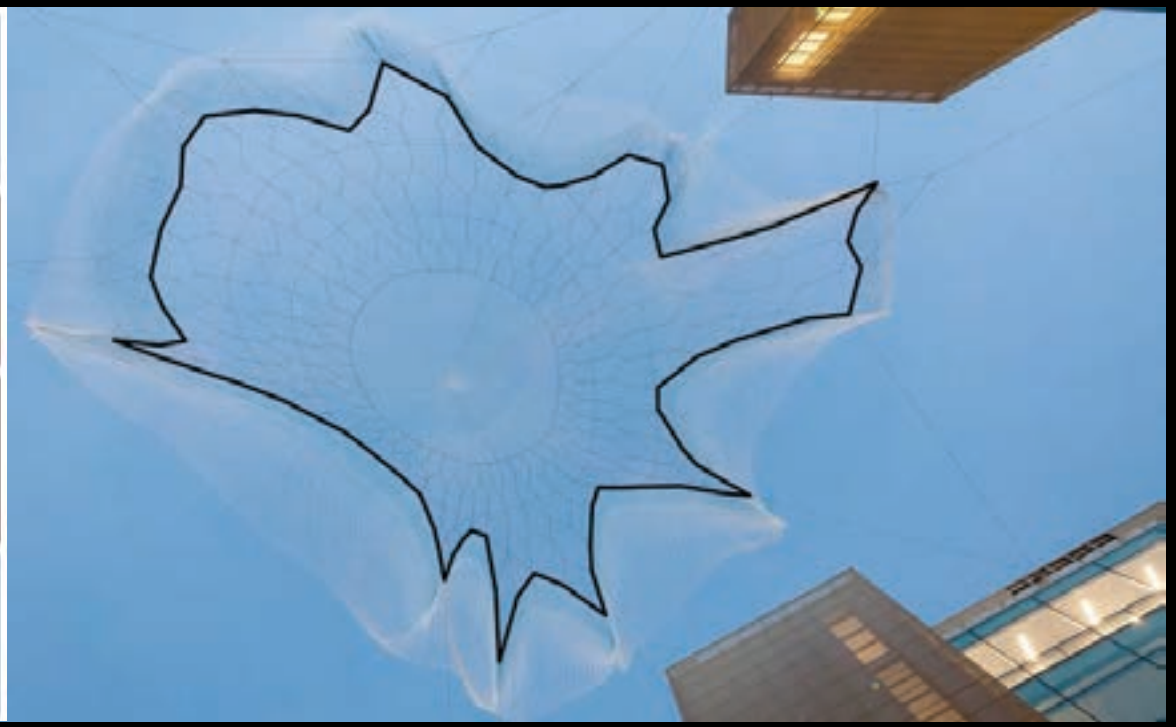


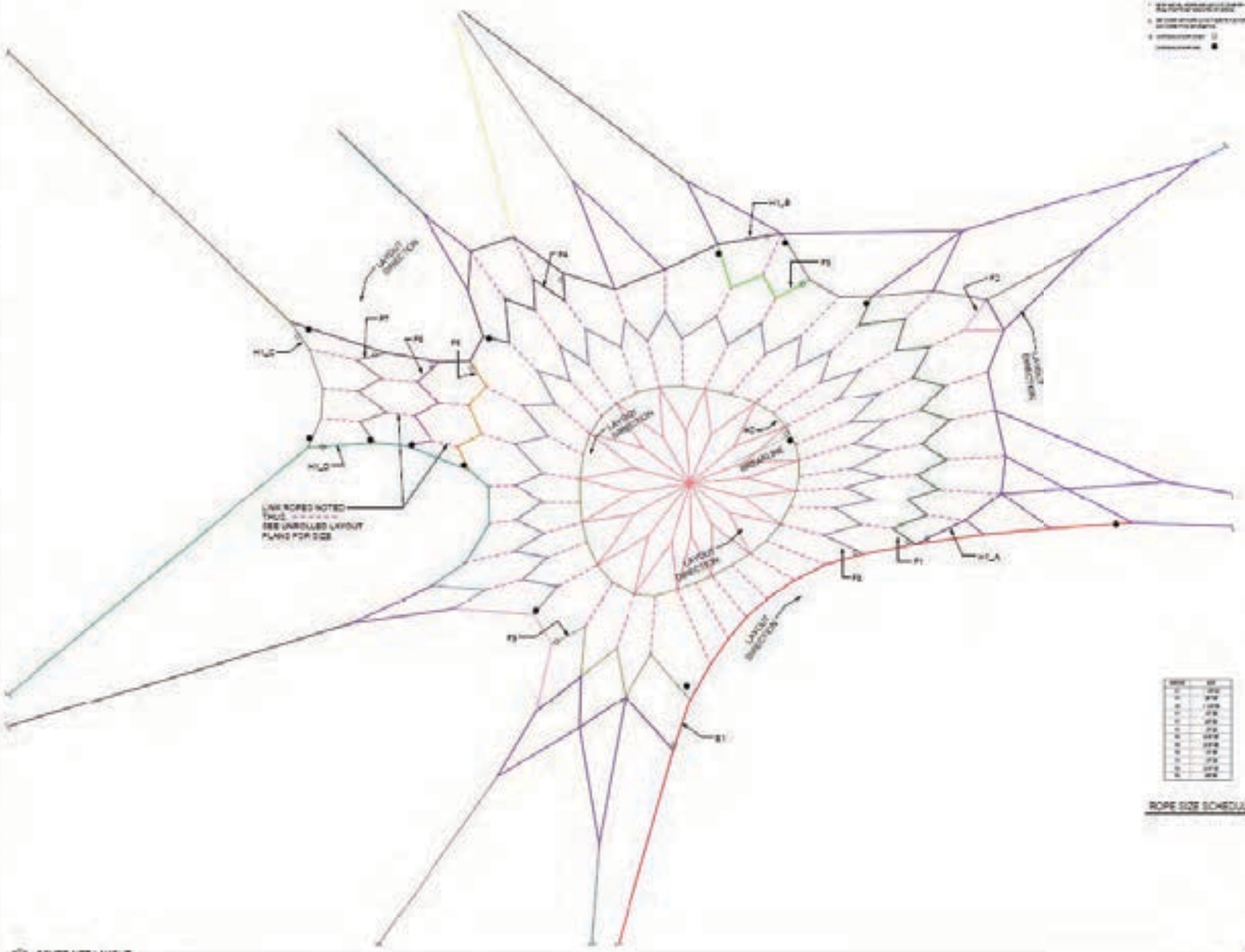
"Every person deserves the chance to live a healthy, productive life."



The Bill & Melinda Gates Foundation, Seattle

Time	7:00	7:05	7:10	7:15	7:20	7:25	7:30	7:35	7:40	7:45	7:50	7:55	8:00	8:05	8:10	8:15	8:20
Saturation	47	47	47	47	47	47	47	45	44	46	46	46	47	45	45	44	45

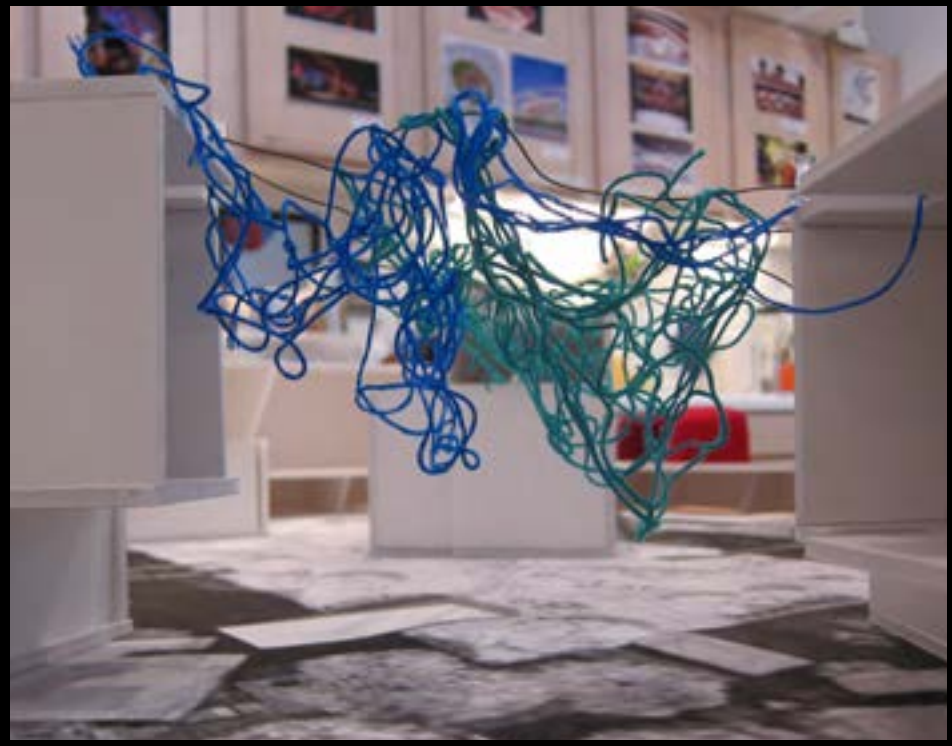


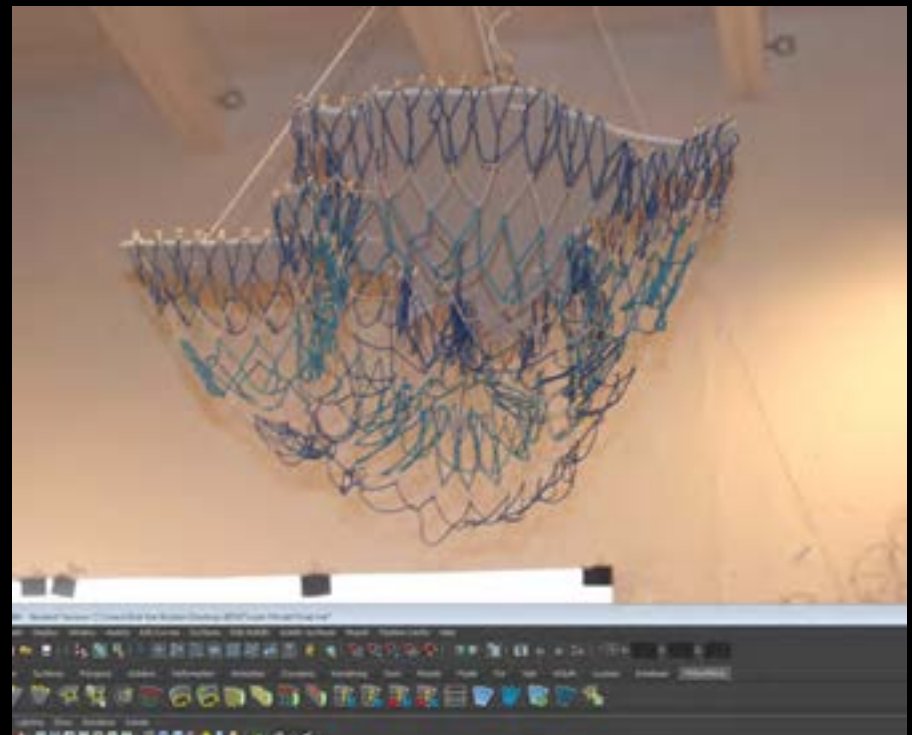


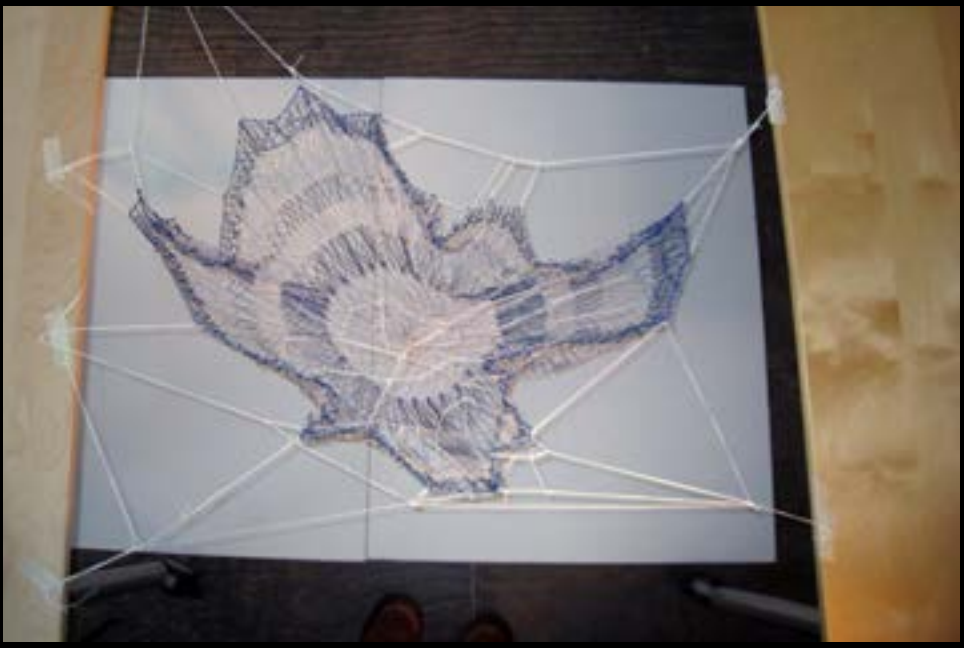
ROPE SIZE SCHEDULE

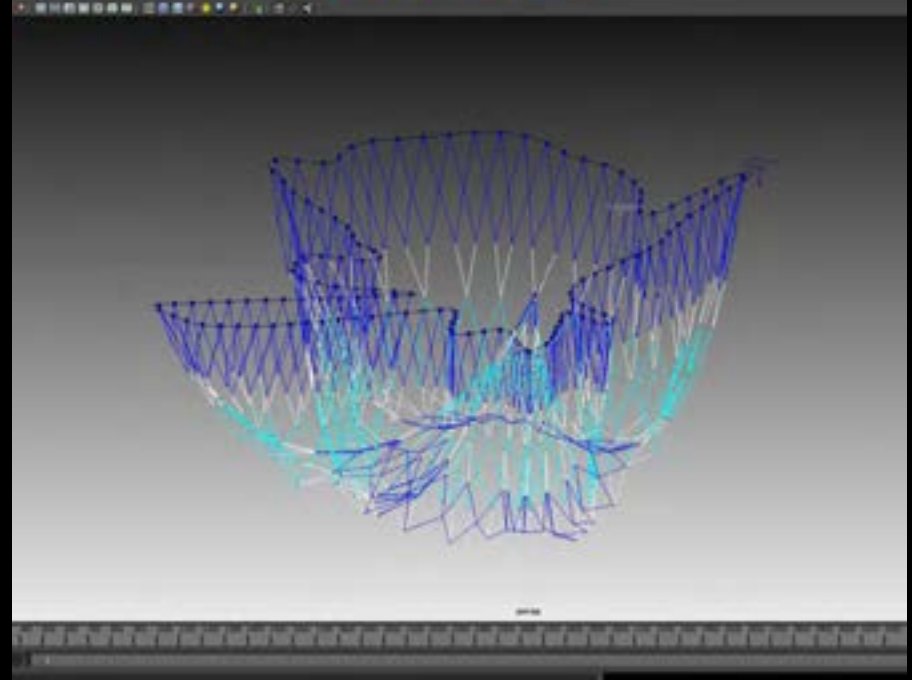
1 COVER NET LAYOUT
SCALE

ARUP









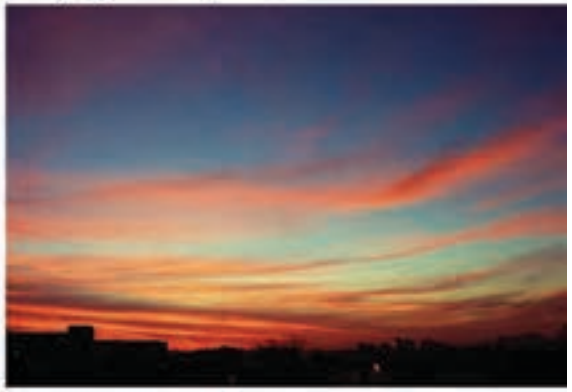
Washington DC - 4:11am PST

Seattle - 6:15am PST

Beijing - 3:18pm PST

New Delhi - 5:55pm PST

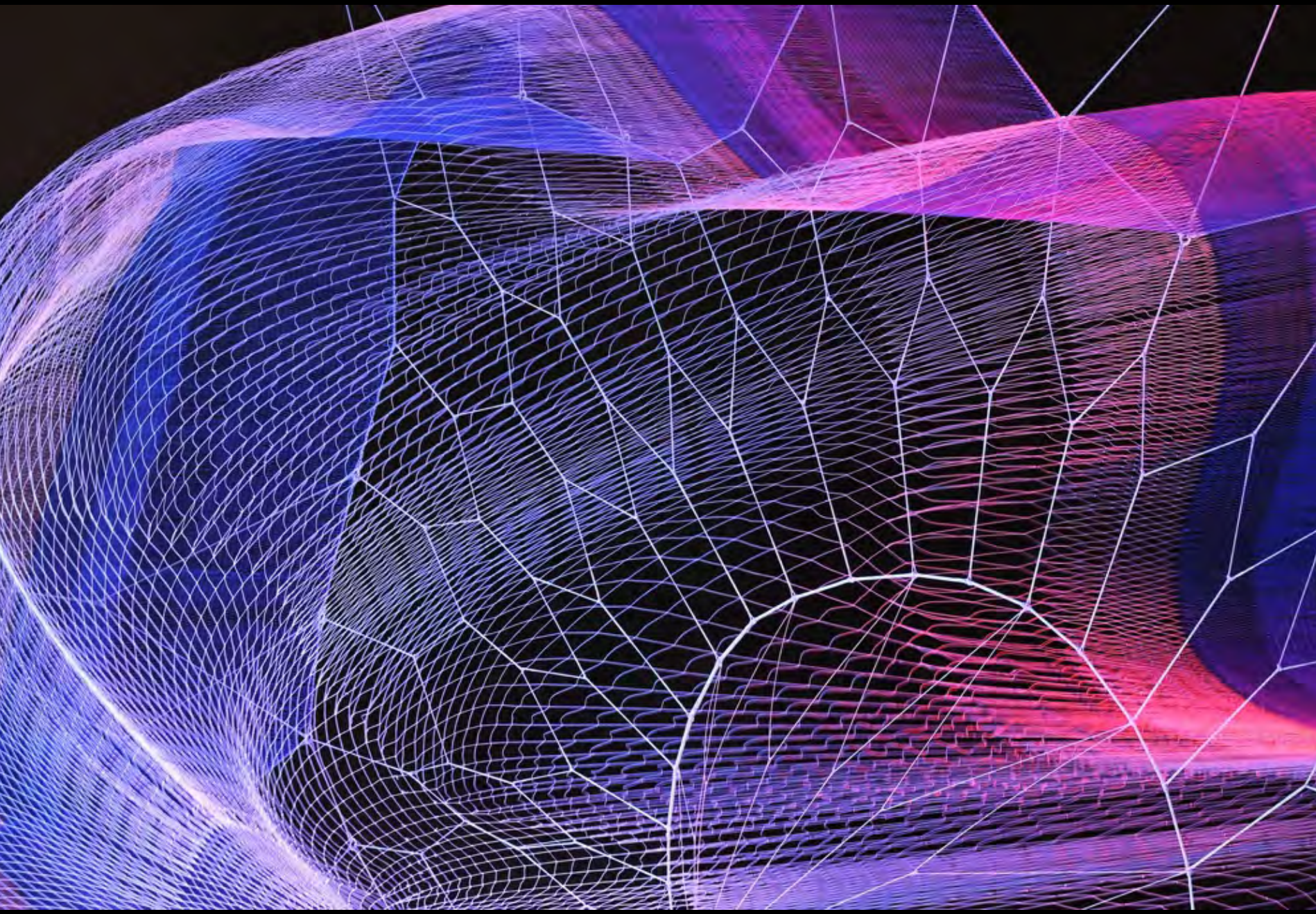
Addis Ababa - 10:29pm PST



London - 11:02pm PST

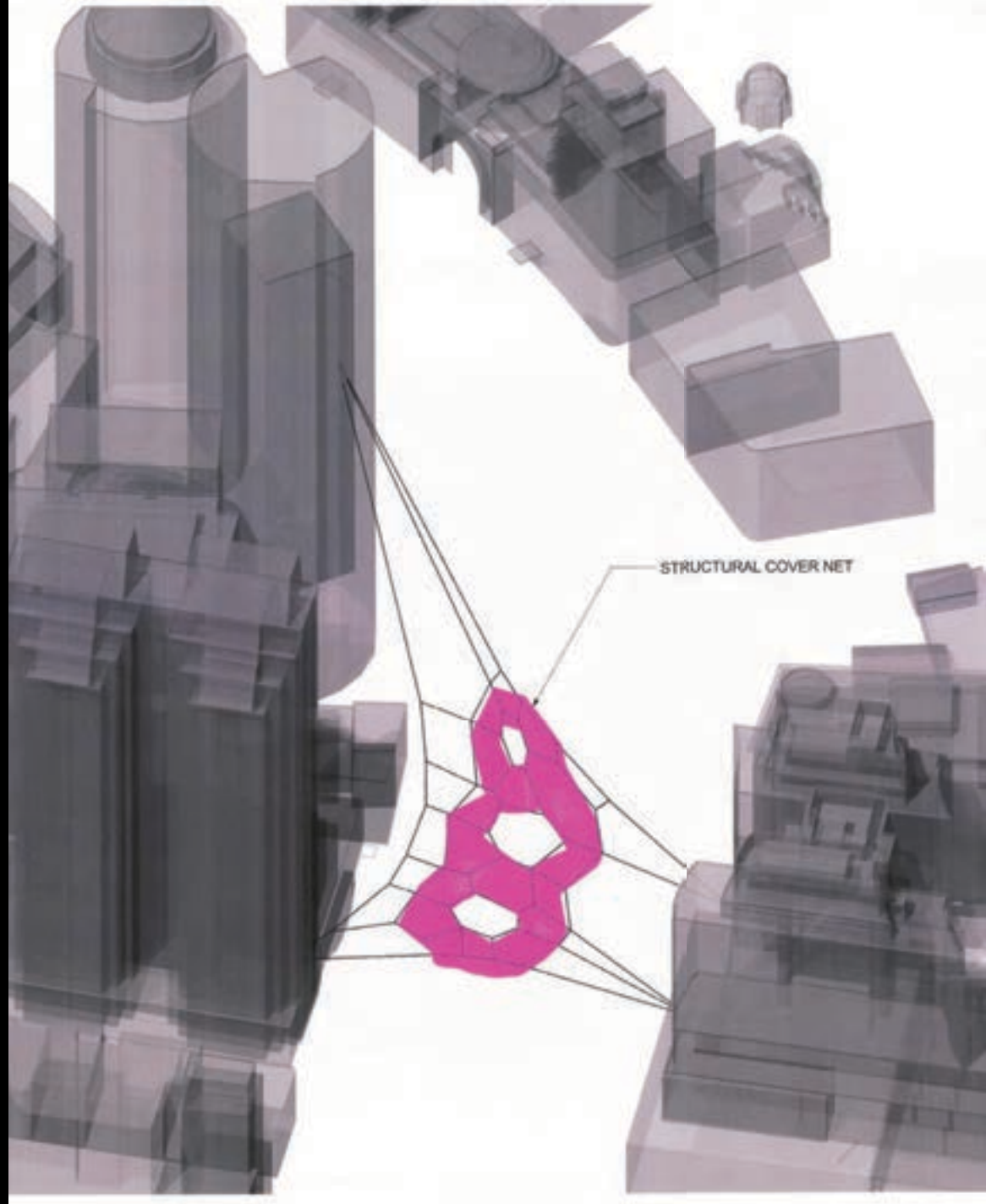

ADDIS ABABA

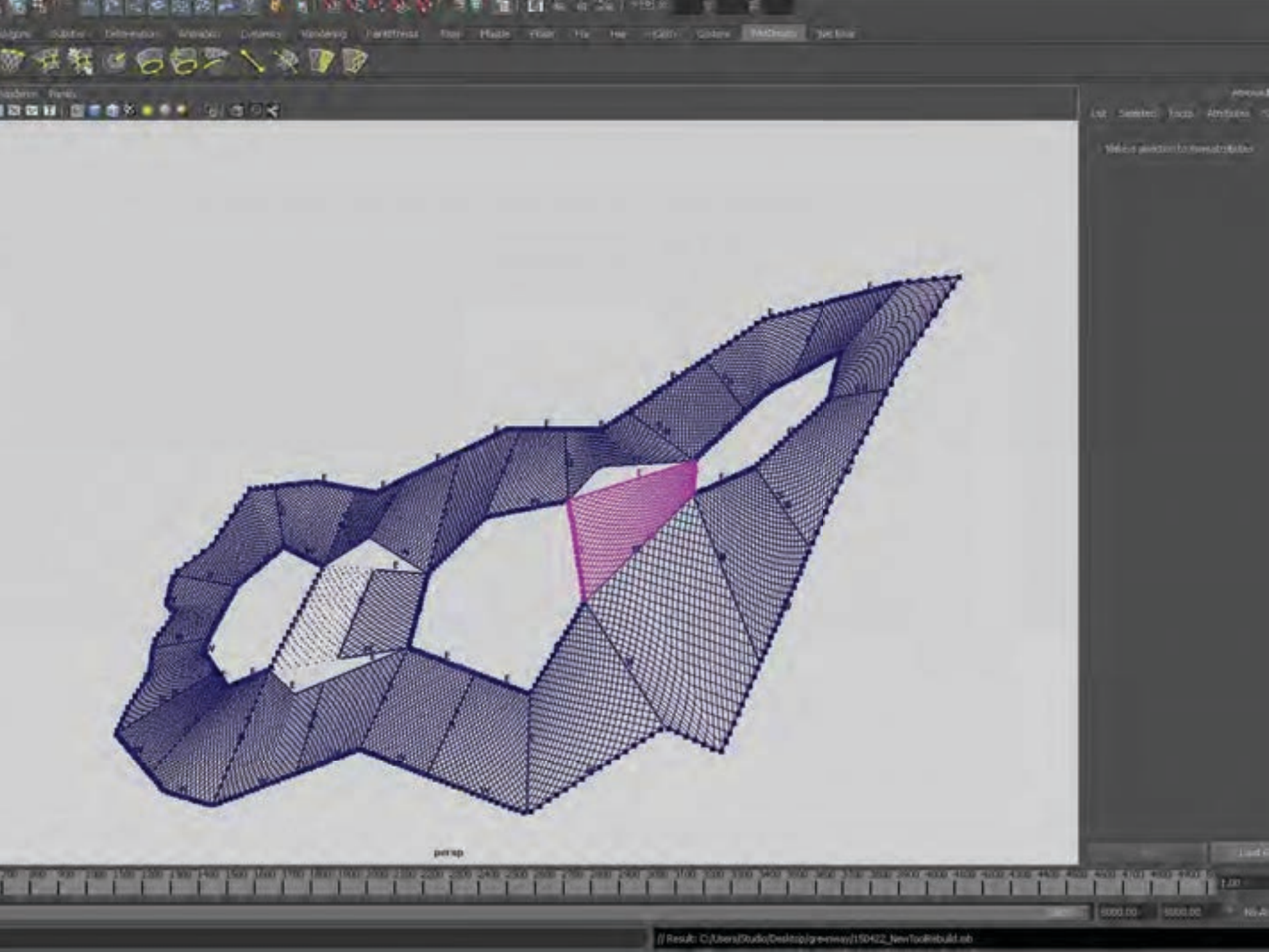

ARUP



History

TRIMOUNTAIN.

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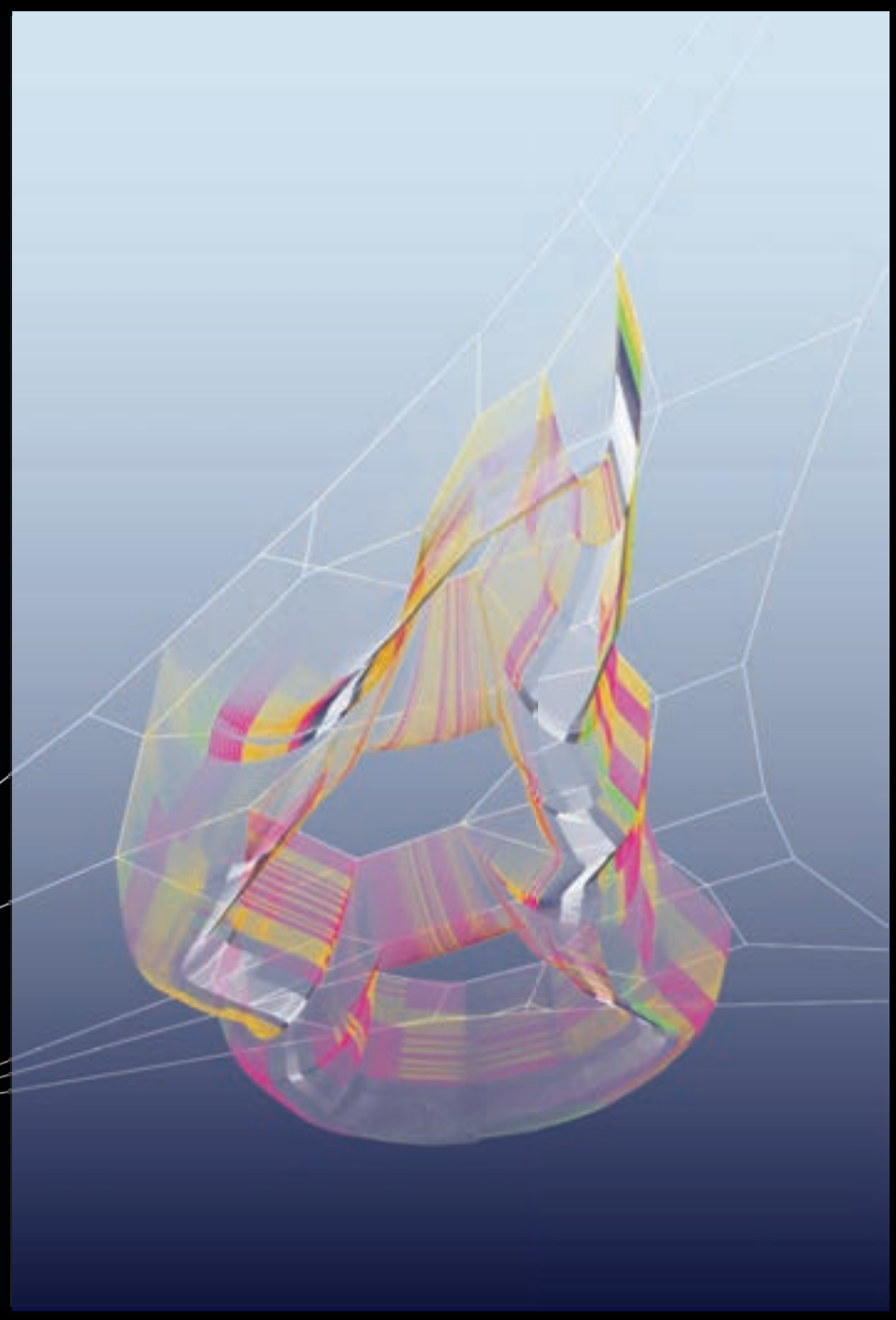


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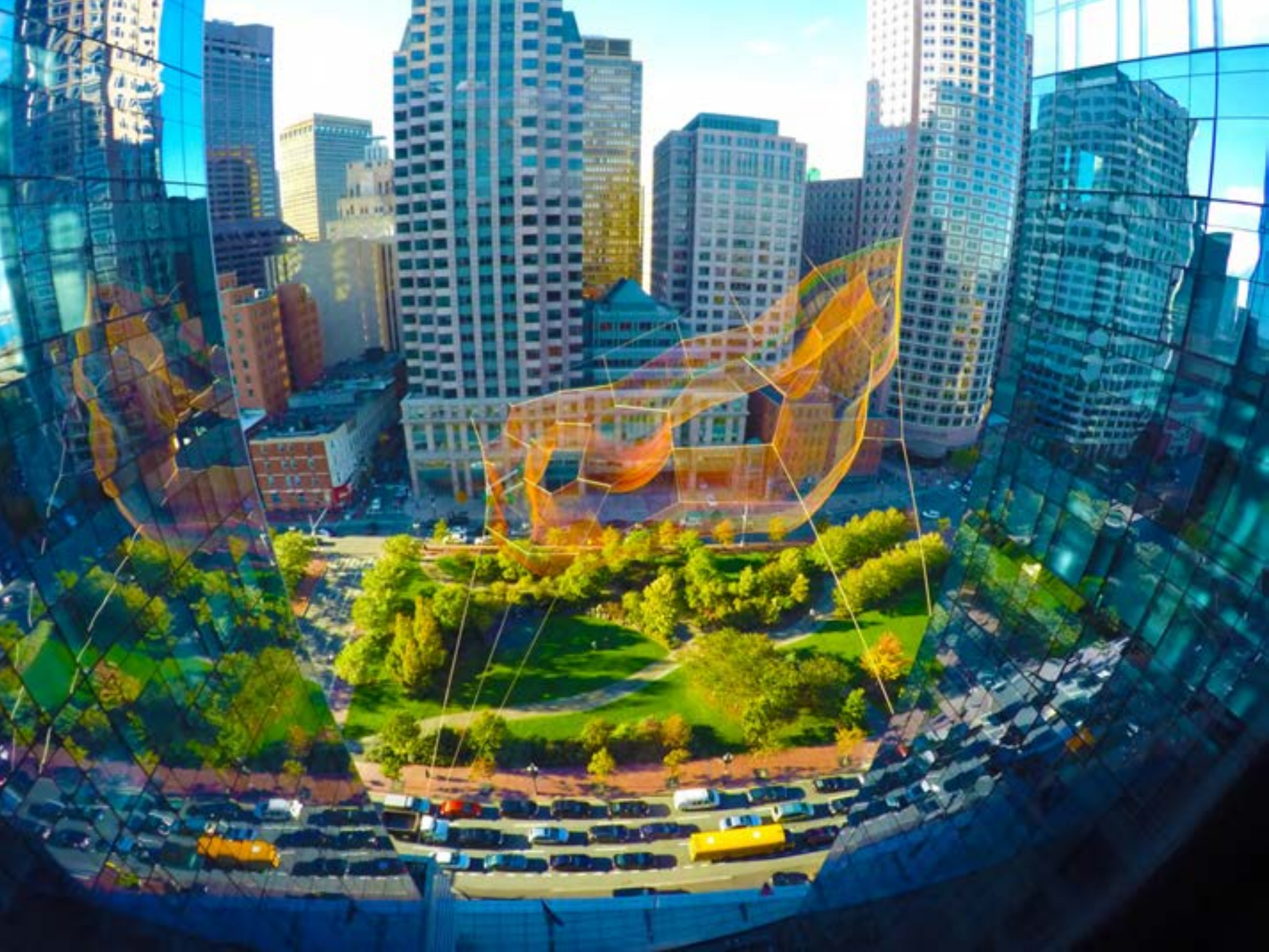
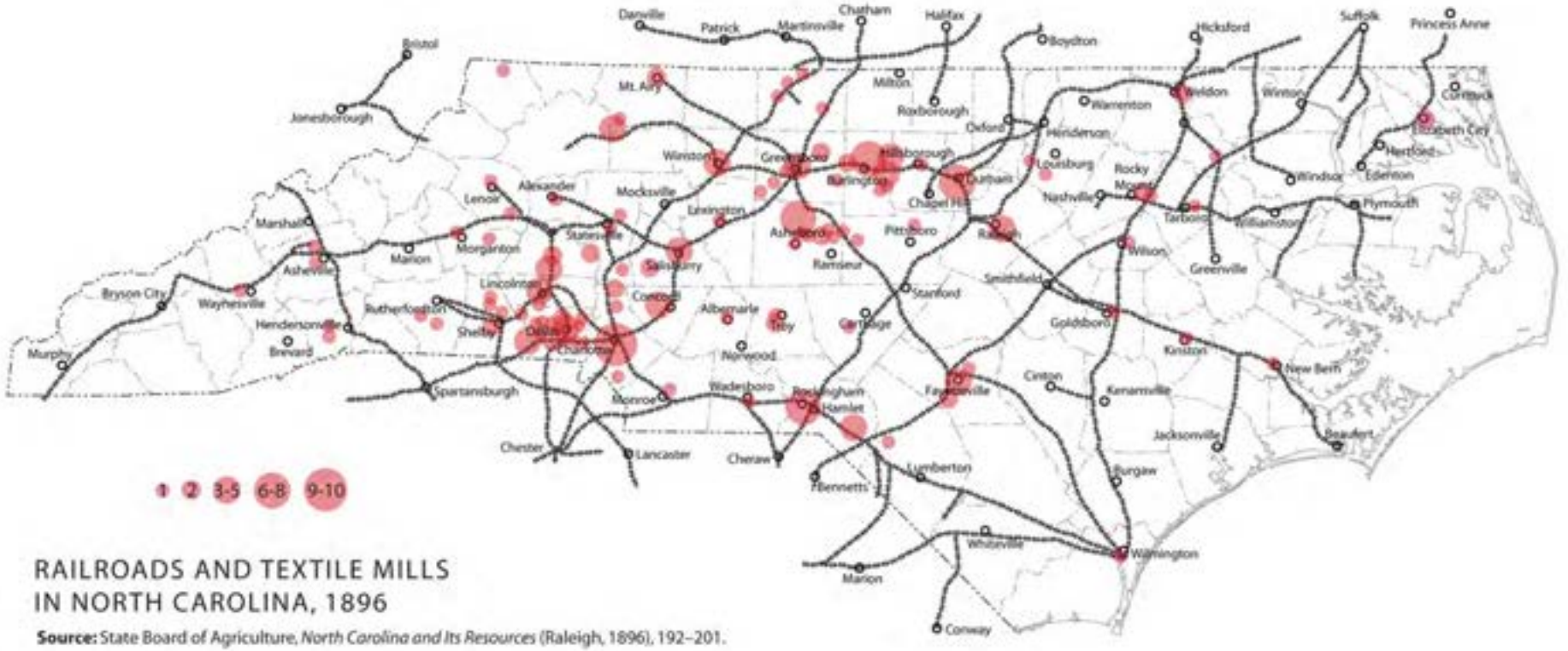
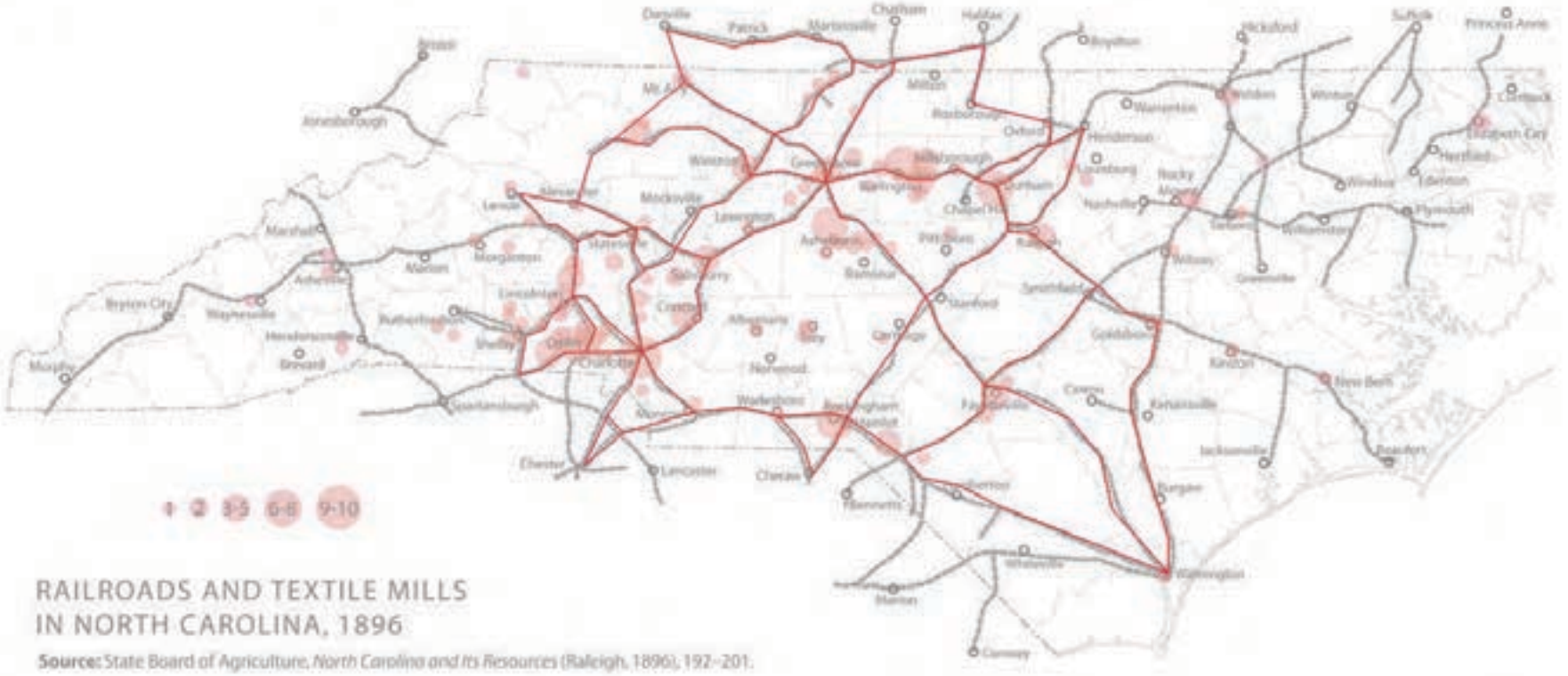




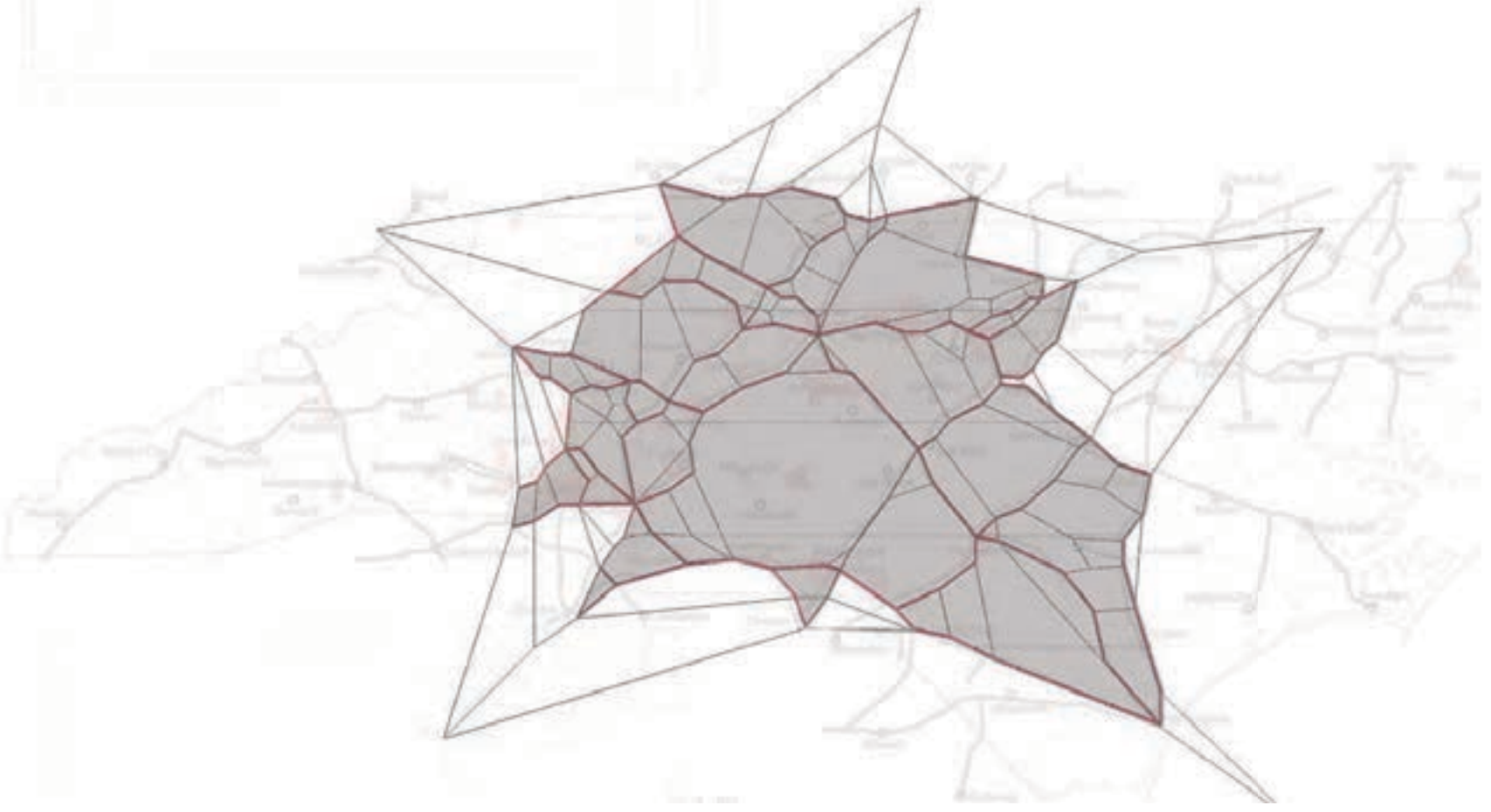
RAILROADS AND TEXTILE MILLS IN NORTH CAROLINA, 1896

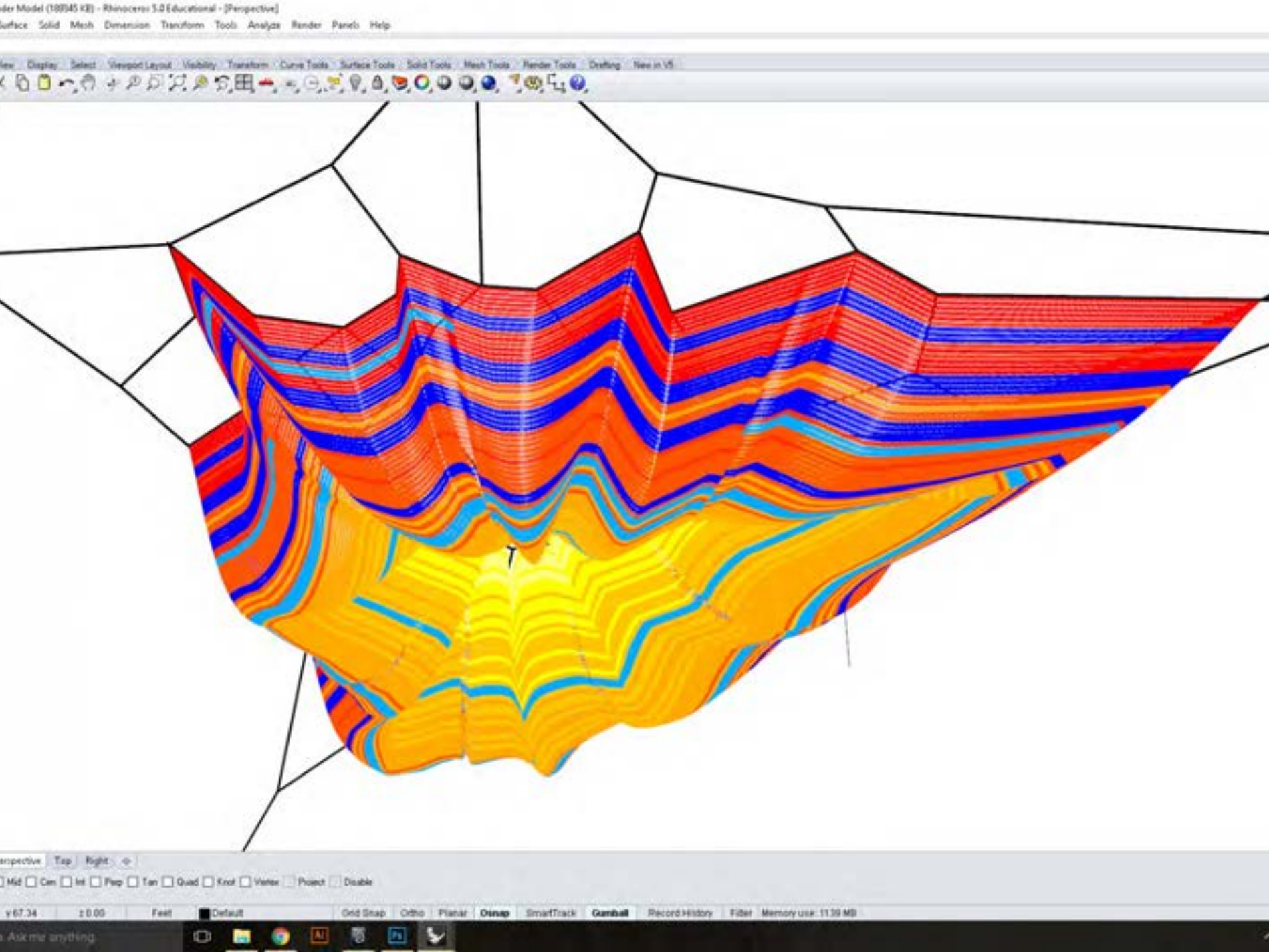
Source: State Board of Agriculture, *North Carolina and Its Resources* (Raleigh, 1896), 192–201.



RAILROADS AND TEXTILE MILLS
IN NORTH CAROLINA, 1896

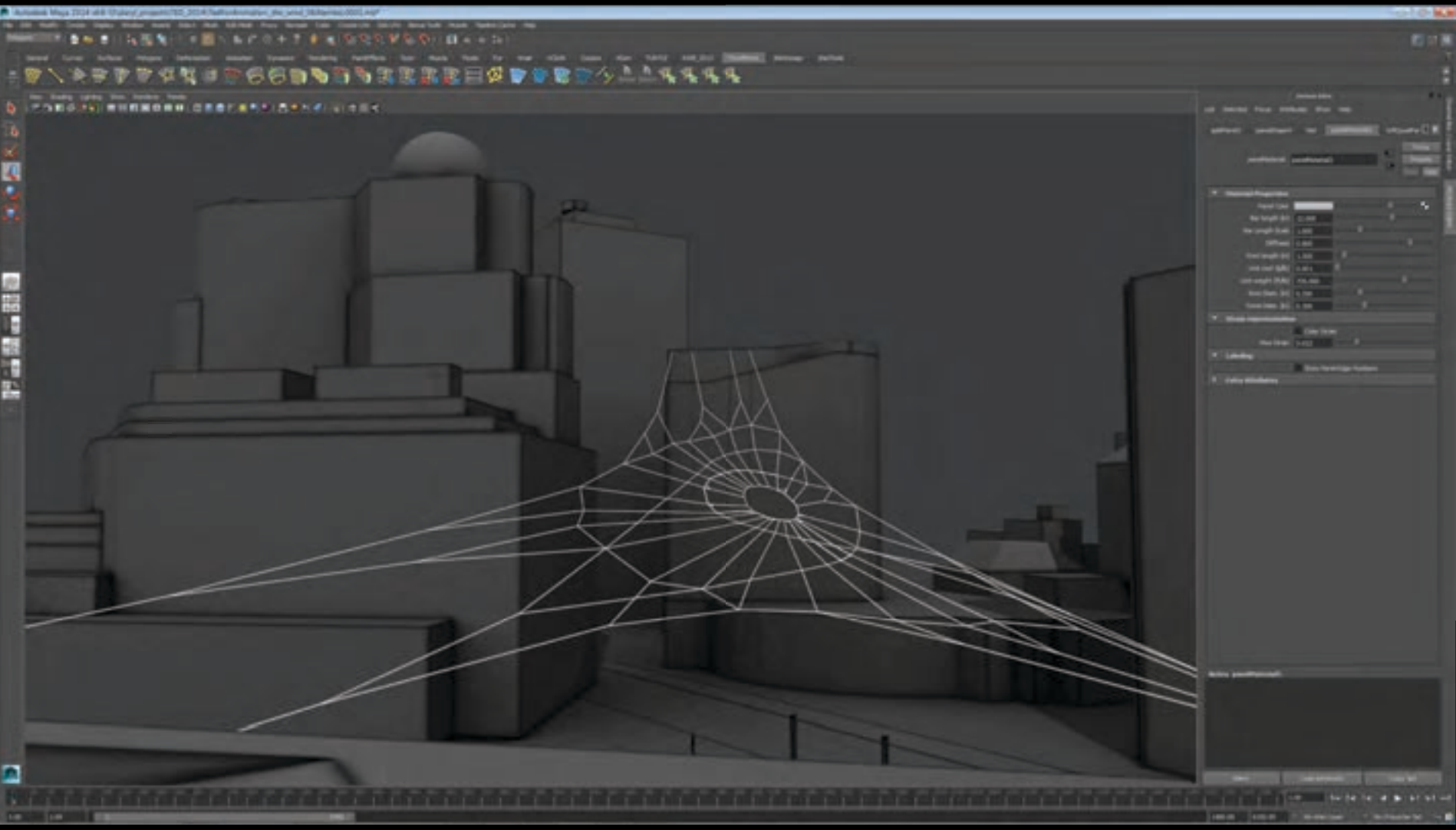
Source: State Board of Agriculture, *North Carolina and Its Resources* (Raleigh, 1896), 192–201.

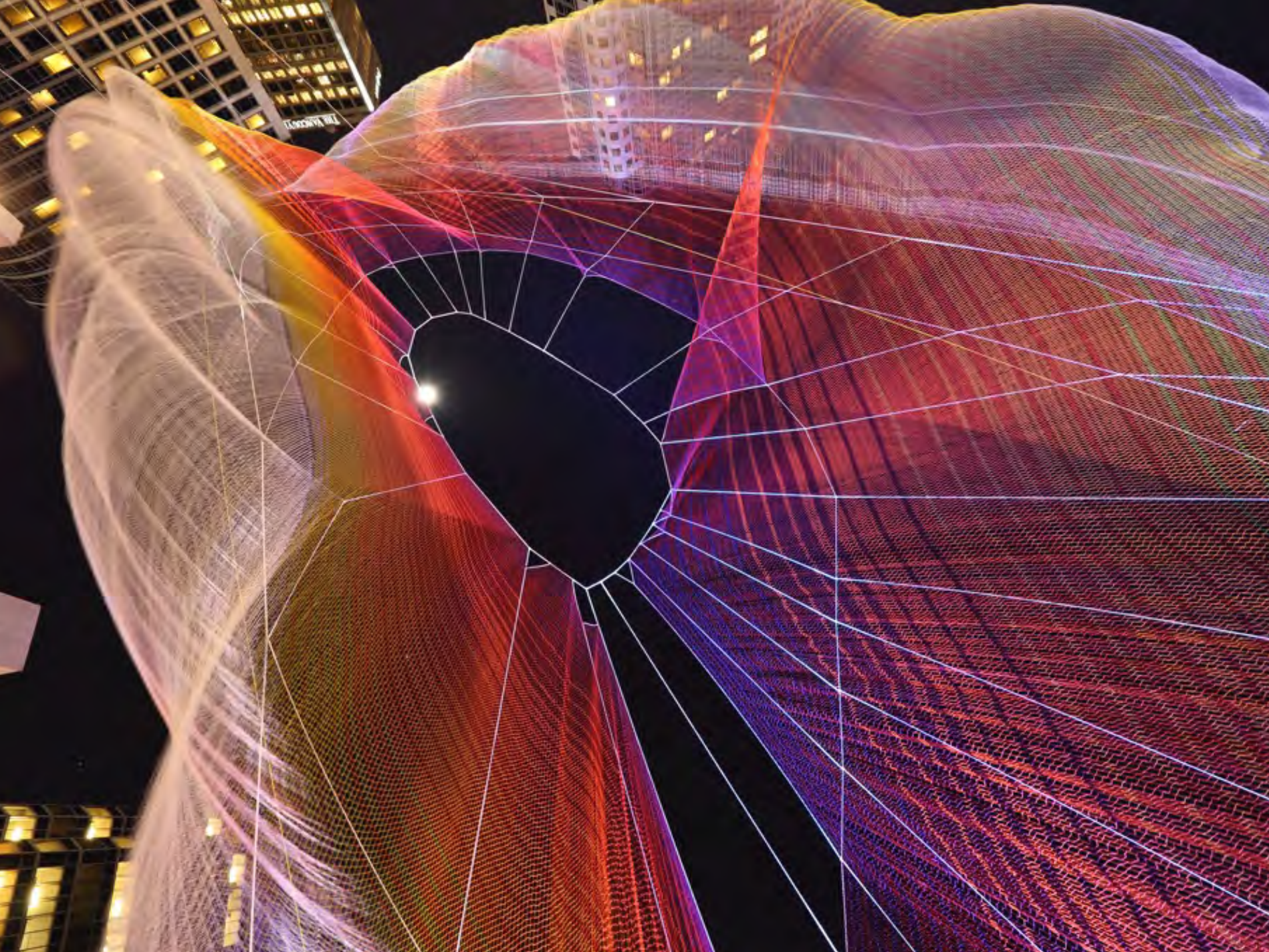


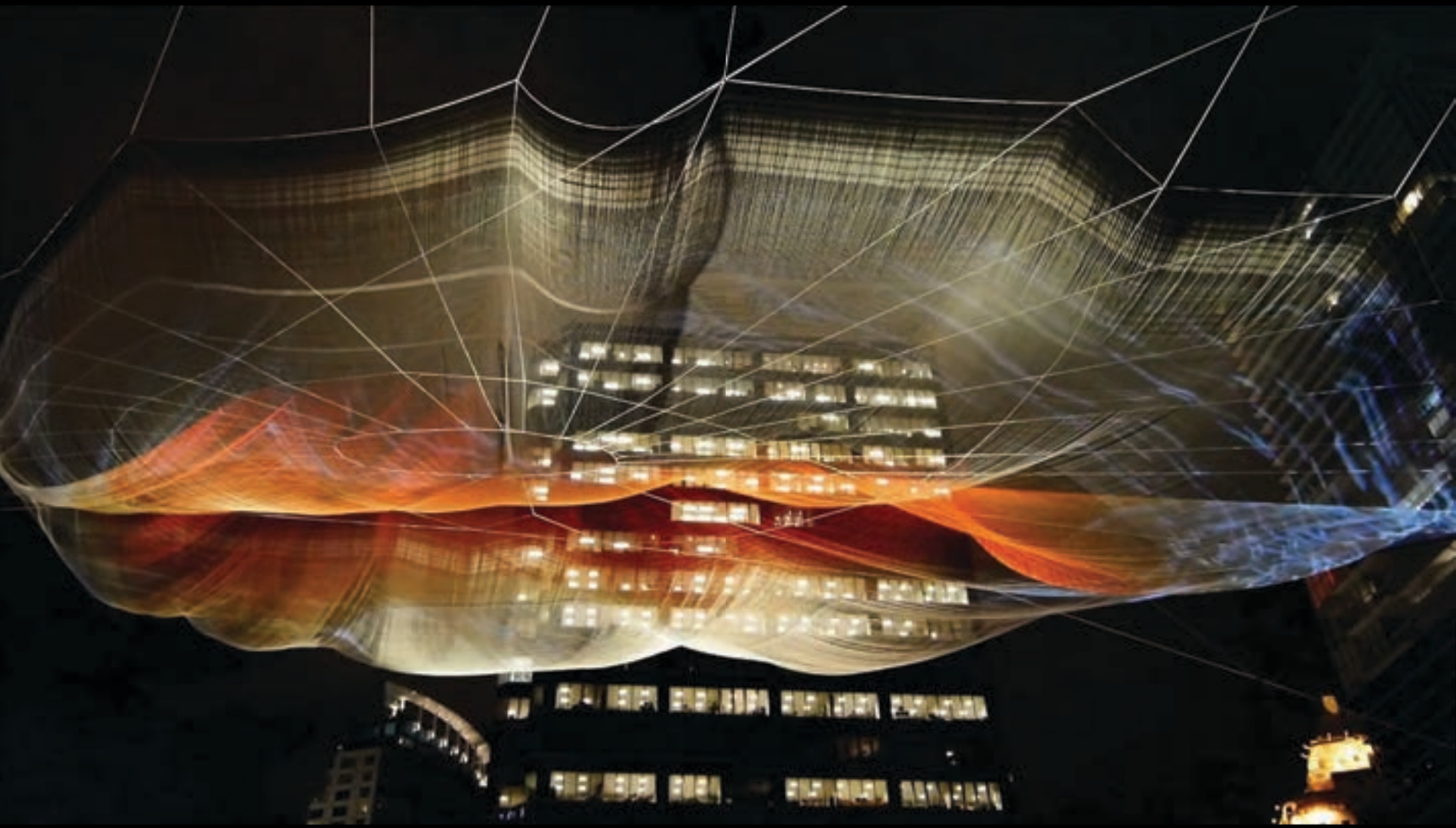

der Model (188345 KB) - Rhinoceros 5.0 Educational - [Perspective]
Surface Solid Mesh Dimension Transform Tools Analyze Render Panels Help
Display Select Viewport Layout Visibility Transform Curve Tools Surface Tools Solid Tools Mesh Tools Render Tools Drafting New in V5
erspective Top Right
Mid Cen Int Perp Tan Quad Knot Vertex Project Disable
y 67.34 z 0.00 Feet Default Grid Snap Ortho Planar Osnap SmartTrack Gumball Record History Filter Memory use: 1139 MB
Ask me anything

One Hour

Participation

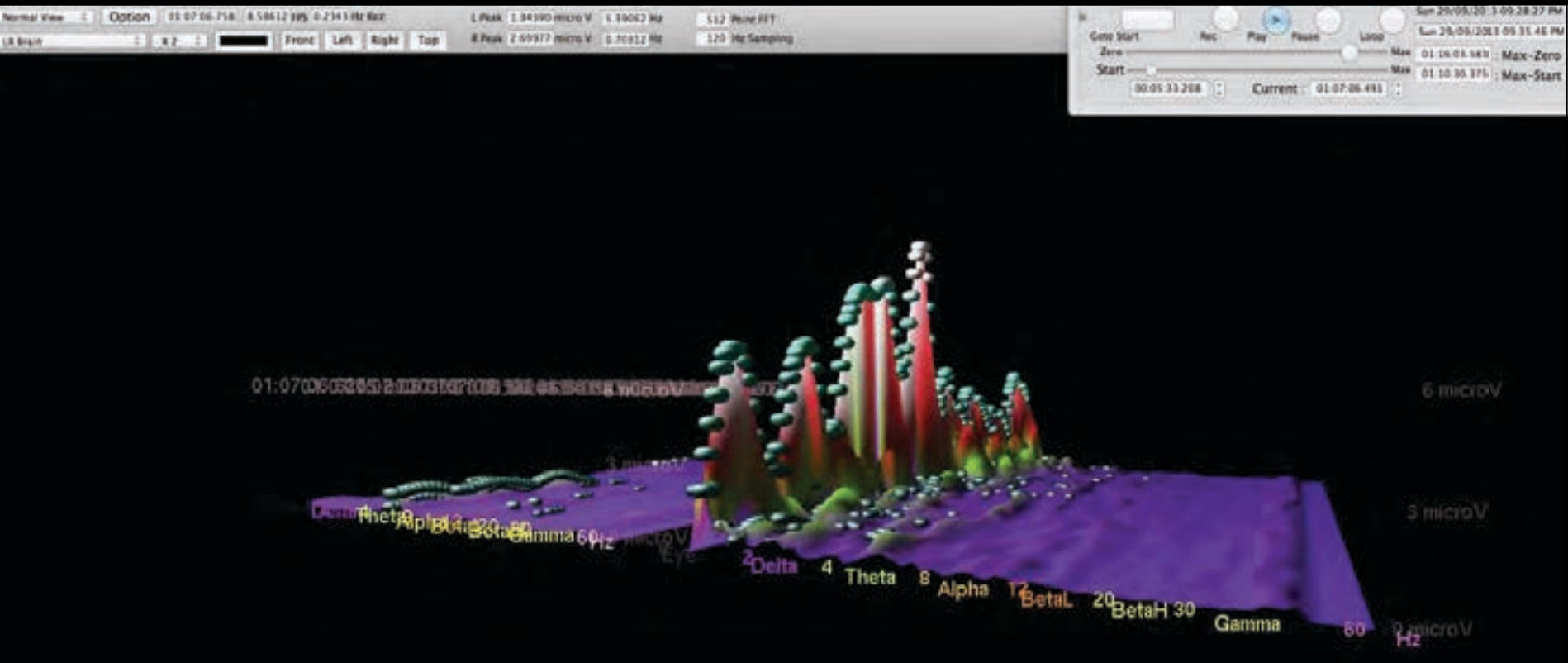


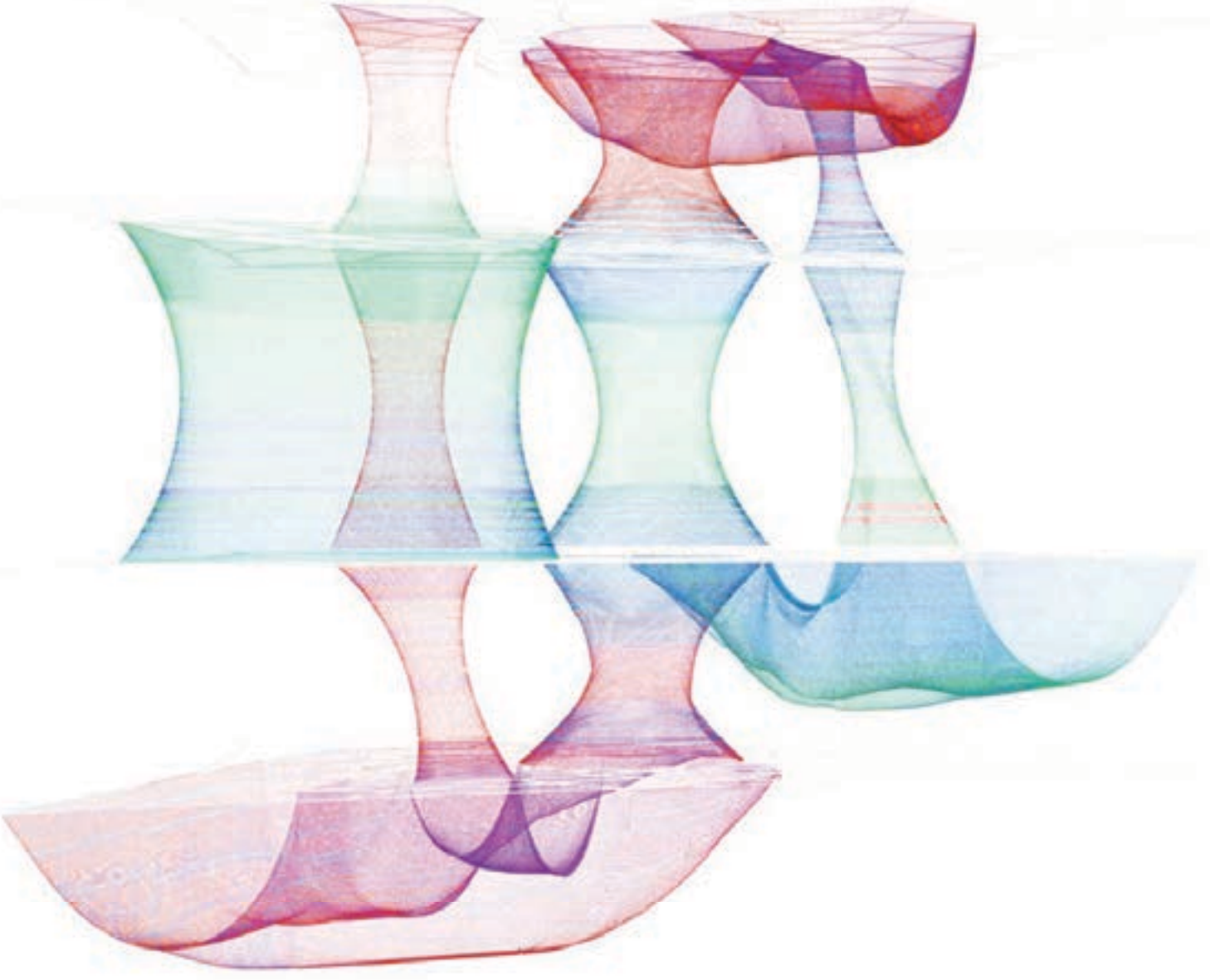


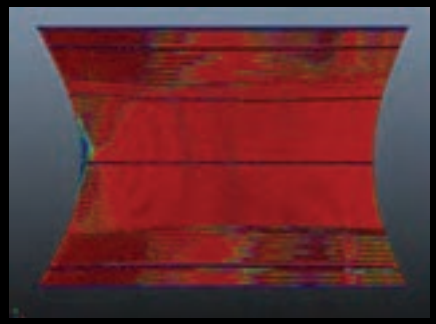


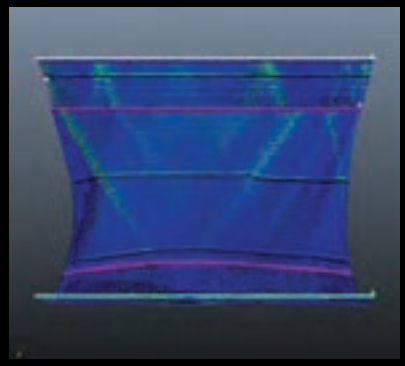
New Challenges

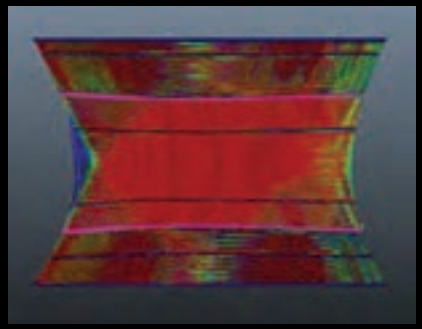
SOM, Sunset Strip, West Hollywood California

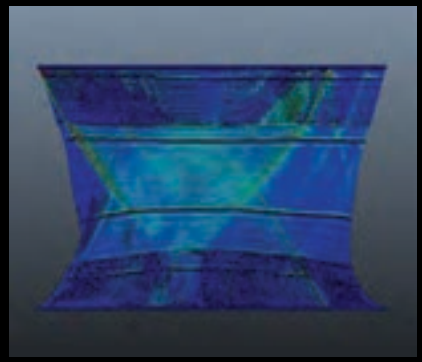

Option
Front
Left
Right
Top
Rec
Play
Pause
Loop
Max-Zero
Max-Start
Current
6 microV
3 microV
0 microV
2 Delta
4 Theta
8 Alpha
12 BetaL
20 BetaH 30
Gamma
60
Hz

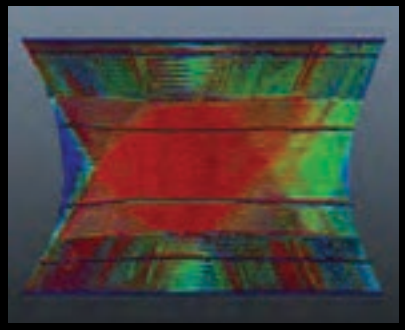


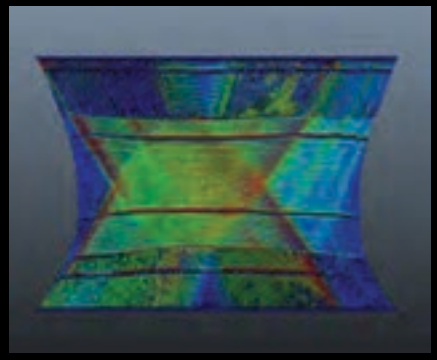


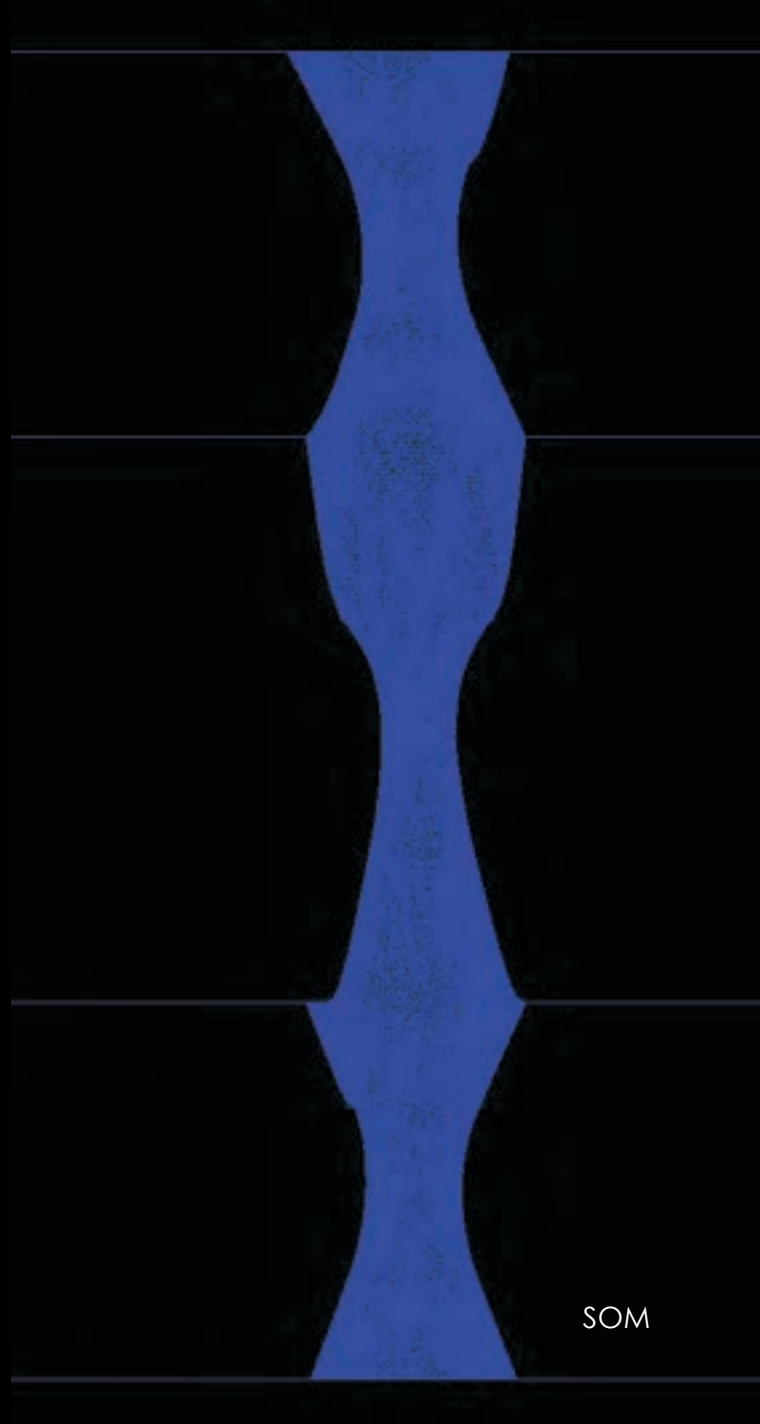








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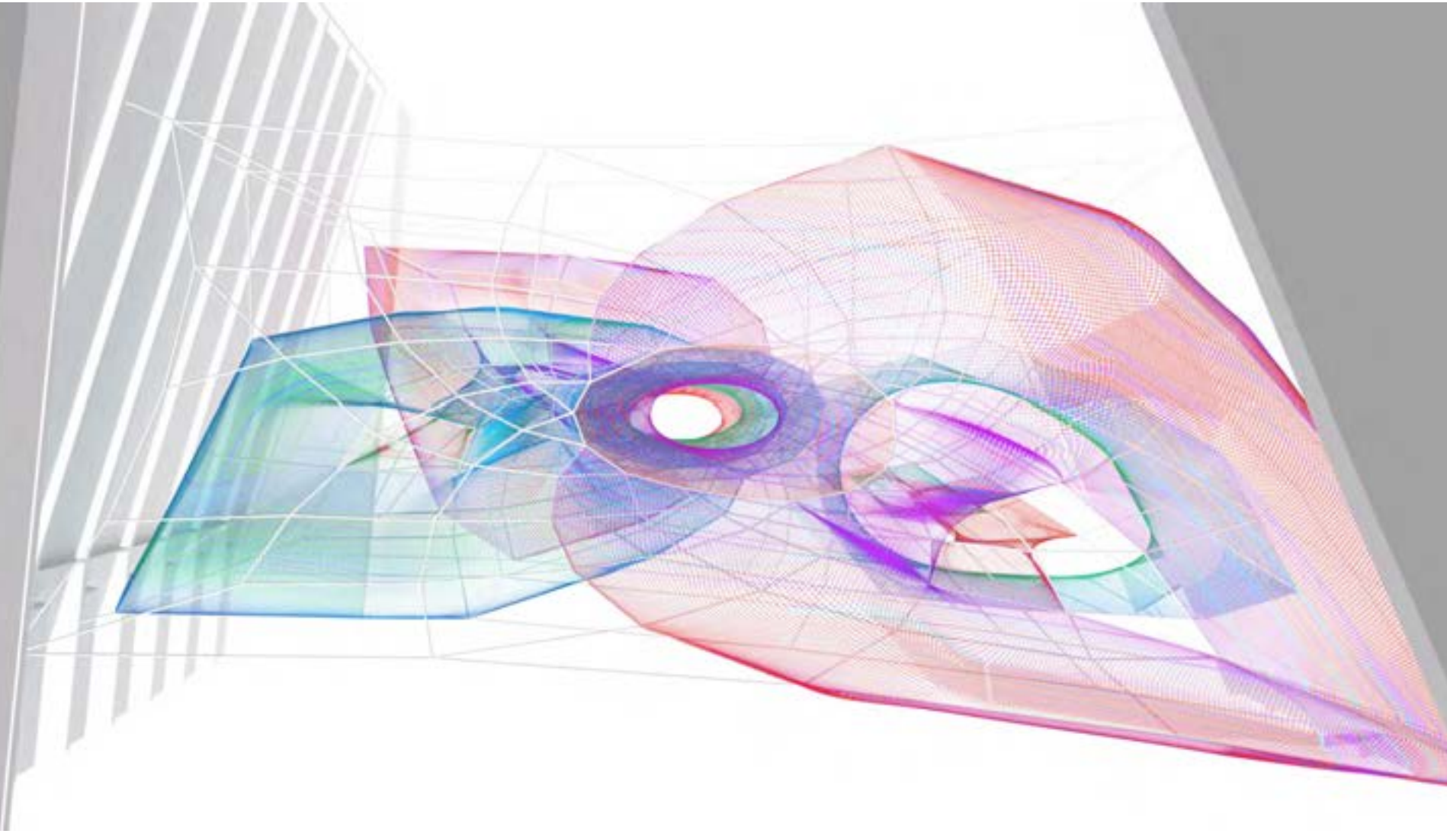
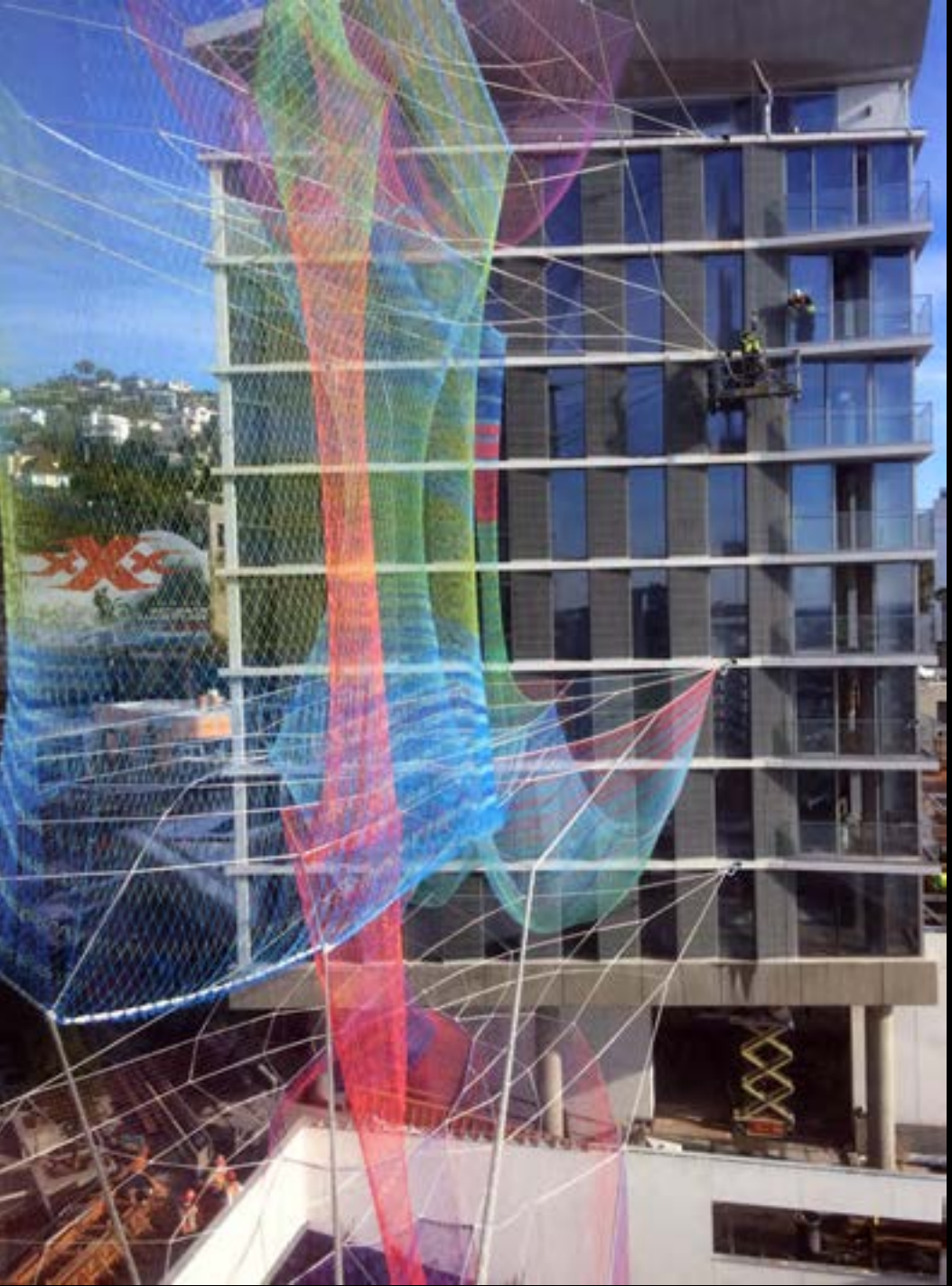
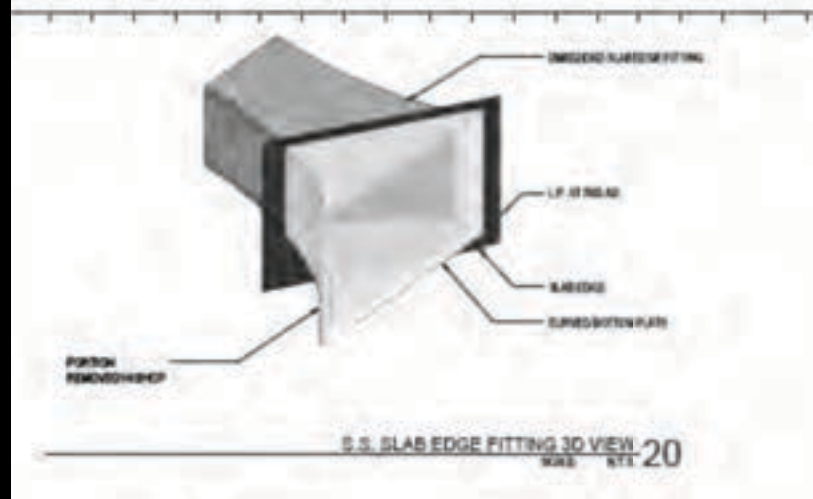
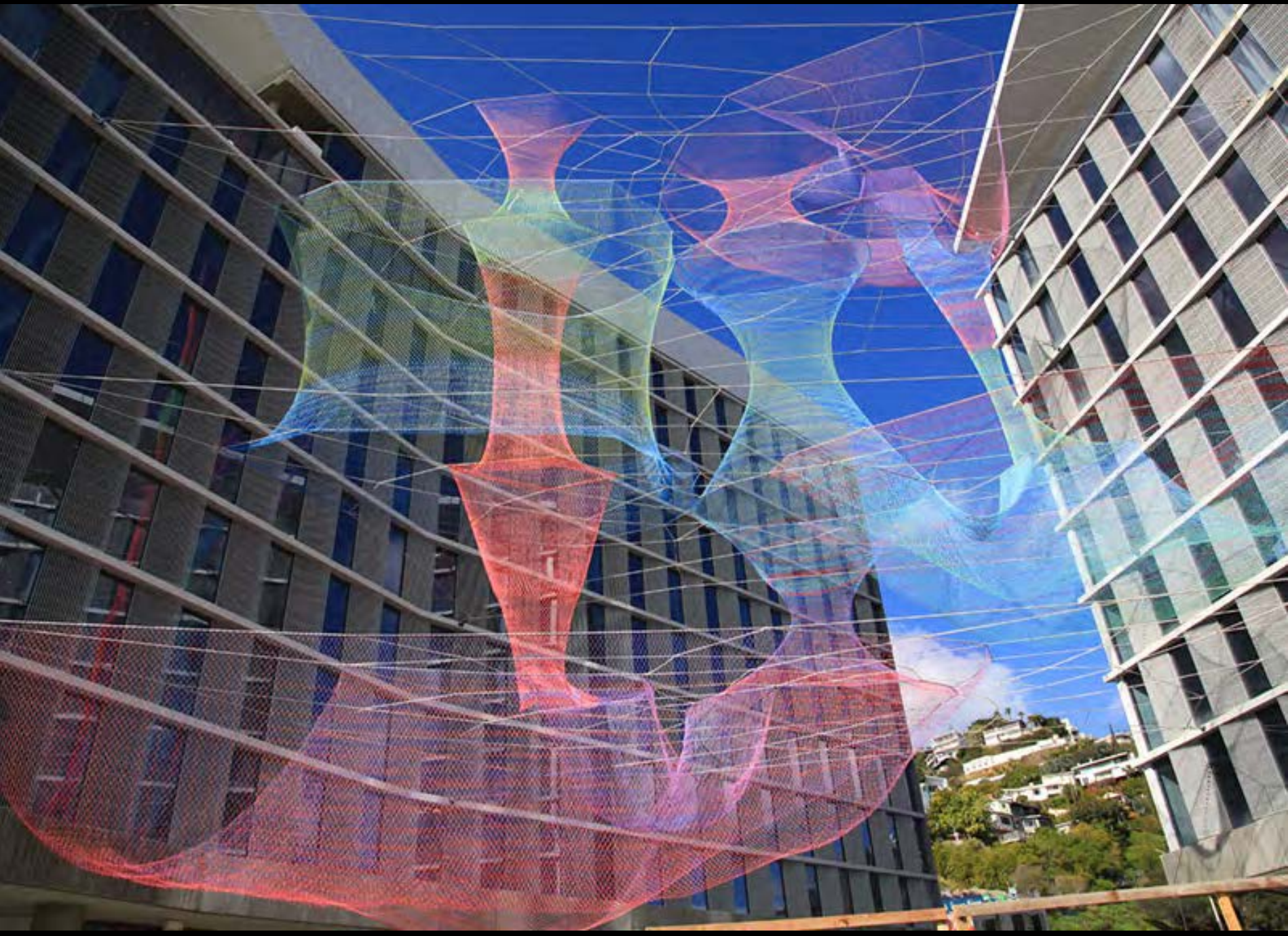
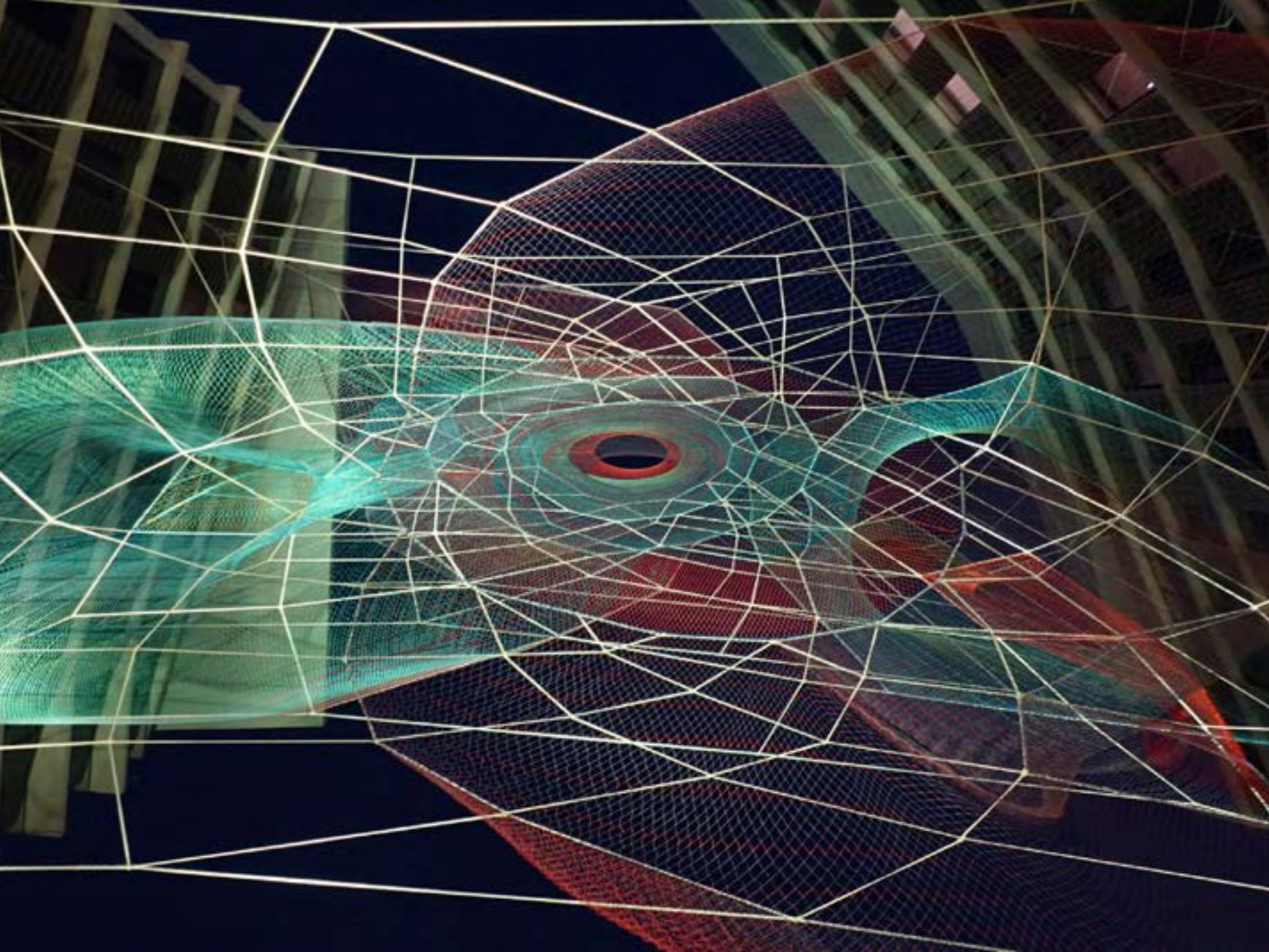




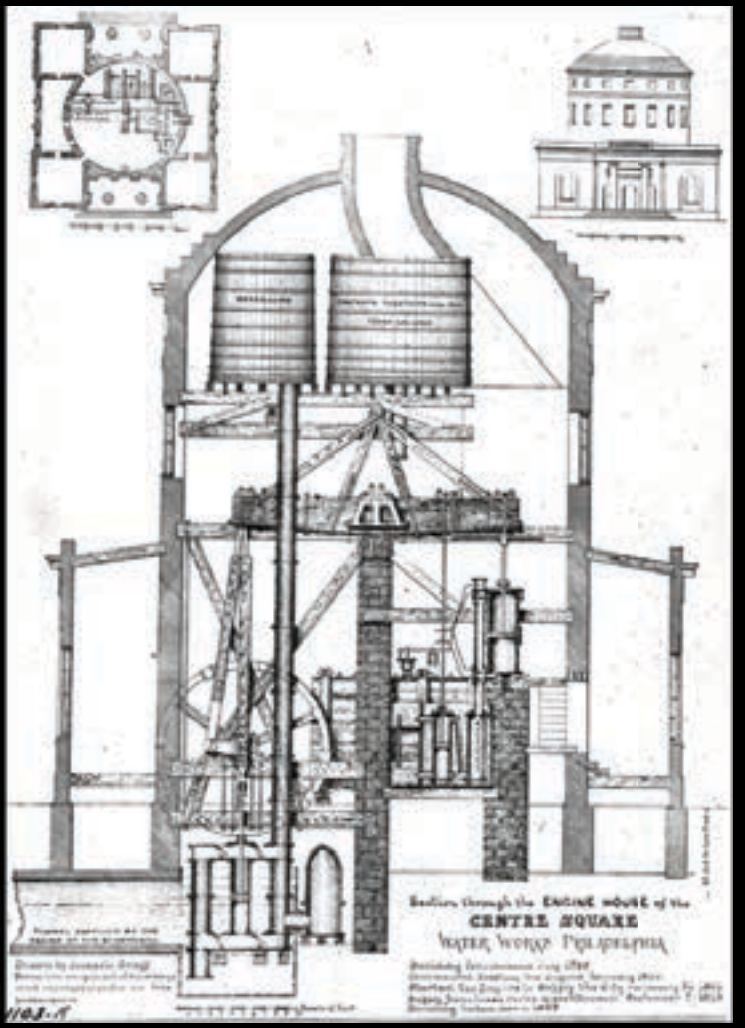

S.S. SLAB EDGE FITTING 3D VIEW
20






West Hollywood, CA, 2017

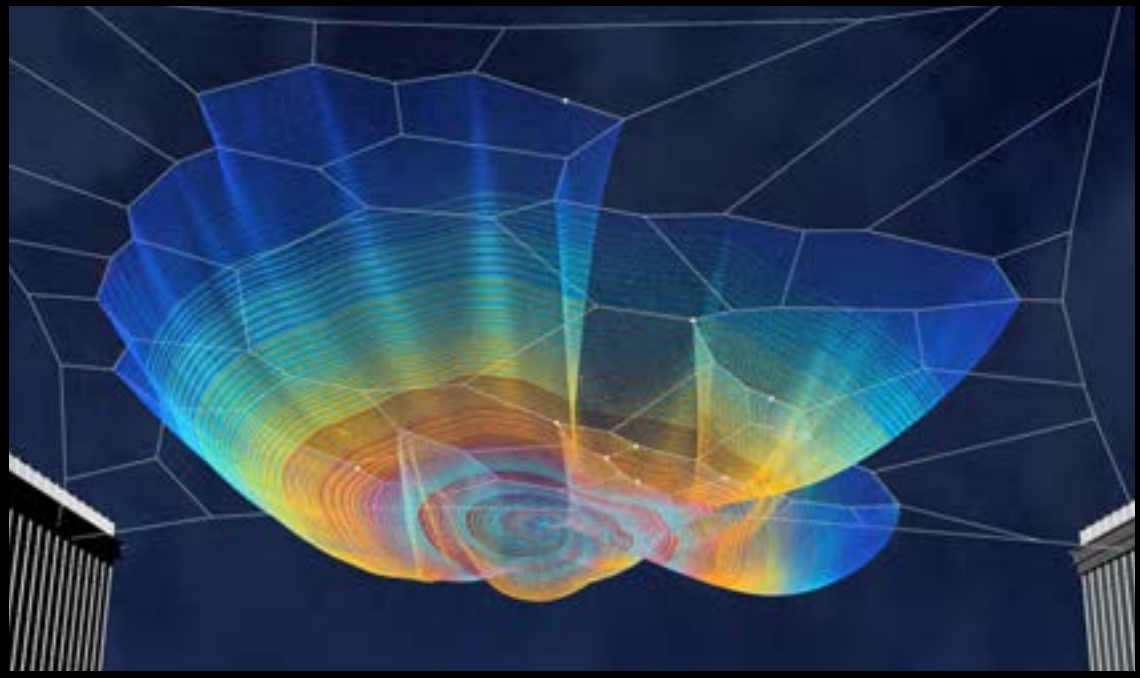
1801 Water Works




MAULE'S SEEDS
THE MAULE SEED CATALOG

MARK ROTHKO

A RETROSPECTIVE




TO AUSTIN

“Be patient toward all that is unsolved in your heart and to try to love the questions themselves like locked rooms and like books that are written in a very foreign tongue. Do not now seek the answers, which cannot be given you because you would not be able to live them. And the point is, to live everything. Live the questions now. Perhaps you will then gradually, without noticing it, live along some distant day into the answer.”

-Rainer Maria Rilke

Team Sport

Studio Team:
David Feldman, Melissa Henry, Daniel Zeese, Jamie Li, Daniel Smith, Lillian Rodriguez, Cam Chateauneuf, Yoonjee Koh, Lyza Baum, Lucca Townsend, Mieke Prins, Melanie Peterson, Rachel Newsam, Becky Borlan, Drew Raines, Daniel Lear, Yan Yan Mao, Jack Pace, Nathaniel Stanton, Ian Keough, John Neal, Steve Gregory, Les Powers

Amsterdam:
Amsterdam Light Festival Felix Guttmann Frans van Konijnenburg, David JansenAllen Ortega, Henry Lewsley, Rogier van der Heide, Floriaan Ganzevoort
Klaas Fopma, Laura Taylor, Janus van den Eijnden

Boston:
The Rose Kennedy Greenway Conservancy: Laura Jasinski, Linda Jonash, Jesse Brackenbury, Jodi Wolin, Lucas Cowan, Michael Nichols. Arup: Clayton Binkley, Patrick McCafferty, Michael Shearer, John Hand, Jake Wayne, Brian Stacy. Autodesk: Rick Rundell, Rod Recker. Shawmut Design & Construction: Micah O'Neil, Chad Grimshaw. Daniel Marr & Son, Lumenpulse.

Denver:
City of Denver, John Hickenlooper, Erin Trapp
Denver Office of Cultural Affairs, Kendall Peterson, Pauline Herrera, Brooke Jones. Denver Art Museum, Chris Jahn, Mark Drummond Davis, Charles Keyes, Shane McCormick. NASA Jet Propulsion Laboratory, Richard Gross. NOAA Center for Tsunami Research, Christopher Moore. Mike Mancarella, Joseph Gann, Shubie Gomez, Jason Kalotchny, Peter Bergman, Sanford Kwinter

Greenboro:
Engineering: ARUP: Clayton Binkley
Lighting: Focus Lighting
Photography: Lynn Donovan, Joshua Spitzig

India:
Fulbright Scholarship Board
United States-India Educational Foundation (USIEF)

London:
Engineering: ARUP: Clayton Binkley
Lighting and Interactivity: ArtAV
Festival Production: Artichoke
Photography and Videography: Emma Peter, Bruce Petschek

Matosinhos/Porto:
Portugal Ministry of the Environment, City of Matosinhos, Eduardo Souto Moura, Rui Furtado, Jose Maria Lastra, Joao Ferrand, Madrid: ARCO, Feria de Madrid, Charles Fager, Florence Lynch, Christopher Sachs

Madrid:
Engineering: ARUP: Clayton Binkley
Festival Production and Lighting: Madrid Destino
Photography and Videography: Joao Ferrand

Montreal:
Les Quartier de Spectacles

Philadelphia:
Center City District of Philadelphia, Paul Levy
Laurie Olin, Susan Weiler, Richard Roark, Chris Landau. Nadine Nemec, Chris Cookn, Dave Sola, Ross Peterson, John Rogers, Brian Stacy, Andrew Sachs

Phoenix:
City of Phoenix Office of Arts and Culture, Ed Lebow, Raphael Ngotie, Kyle Peyton, Jeff Fulks, John Casadei, Ron Rice, Allen Ortega, Henry Lewsley
Jay Hicks, Jeff Bentz, Brandon Sobiech, Chad Atterbury, Paul Deeb, Patrick McCafferty

San Diego:
Clayton Binkley, Allan Wenzler, Bill Loundquist, Mistyka Rodriguez, Mike Linn, Joey Branam, Cameron Chateneuf, Joey Branam, Adobe, SO Events, and Arup Engineering.

Richmond:
City of Richmond Public Art Program, Eric Fiss, Doug Shearer, Christina Lazar-Schuller, Ted Townsend, Joost Bakker, Vance Harris Joe Fry, Christopher Phillips, Emma Lotto Derek Ratzlaff,Karen Henry, Barbara Cole, Peter Smith, Joseph Scott, Tom Kelmartin, Laura Geiman

San Francisco:
Public Architecture & Planning (San Diego)
Gensler, Buro Happold, Peter Heppel, Speranza, Lam Partners, Zoll Design

Santa Monica:
Susan Weiler, Richard Roark, Ben Monette,Dan Rome, Zach Alterman, Martyn Claes, James Schipper, Mark Flaisher, Clayton Binkley, Partic McCafferty, Simon Rees, Eddie Diaz, Santa Monica Public Works.

Santiago, Chile:
Hecho en Casa

Seattle:
Bill and Melinda Gates Foundation, Lynn Perkins, Richard, Norma,, Biran Stacy, Clayton Binkley

Singapore:
Martin Professional Pte. Ltd., Kurihara Kogyo Co., Ltd.
Urban Redevelopment Authority (URA), Singapore

Shanghai:
Enginerring: Peter Heppel Associates (Paris)
Festival Production and Lighting: Kaleidoscale Marcom

Sydney:
Powerhouse Museum: Joanne Delzoppo, Peter Morton, Lindie Ward, Leonie Jones, Marinco Kojdanovski
City of Sydney: Glenn Wallace, Gillian Minervini, Bridget Smyth, Jeremy Sparks, Harry Partridge, Partridge Partners (Sydney), David Gleig, Cairellie

Vancouver:
Google Data Arts Team: Doug Fritz, Aleksandar Rodic, Jono Brandel, Max Hawkins, Chris Delbuck, Hyun Ji Bae, Sabah Kosoy, Valdean Klump, Jenny Ramaswamy, Clem Wright, Arup: Clayton Binkley, Hans-Erik Blomgren, Patrick McCafferty, John Hand, Cormac Deavy, Glotman Simpson: Rob Simpson, Andrew Seeton, Autodesk: Jeff Kowalski, Peter Boyer, Matt Jezyk, Graphics eMotion: Hassan Aziz, Julien Abril, Frank Dufaux, Olivier Delahousse, Louis Fortin; Kinetic Lighting: James Schipper, Geoffrey Galper

Vilnius:
Europas Parkas Open Air Museum of the Centre of Europe, Gintaras Karosas

Washington, D.C., Renwick Gallery:
The Smithsonian American Art Museum
Engineering: ARUP: Clayton Binkley, Patrick McCafferty
Lighting: ARUP: Brian Stacy, Jake Wayne, Robbie Hayes
Photography: Brian Stacy, Ron Cogswell

West Hollywood:
CIM, SOM San Francisco: Alessandro Beghini, Nicole Wang
Art Consultant: Marc Pally Lighting: Francis Krahe & Associates , Walter Berry
Photohtaphy: Daniel Zeese, Nicole Wang

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