

Expanded Archives of Digital Culture

Matthew Allen

Harvard University & University of Toronto

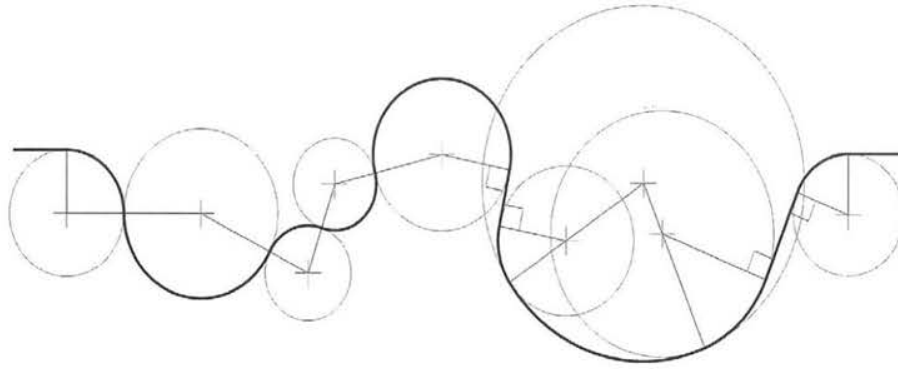


Figure 10:
 An example of a composite curve using the same logic of regional definition and tangency as the ellipse described in Figure 5. Each section of the composite curve is defined by a fixed radius. The connection between radial curve segments occurs at points of tangency that are defined by a line connecting the radii. Perpendicular to these lines, straight line segments can be inserted between the radial curves.

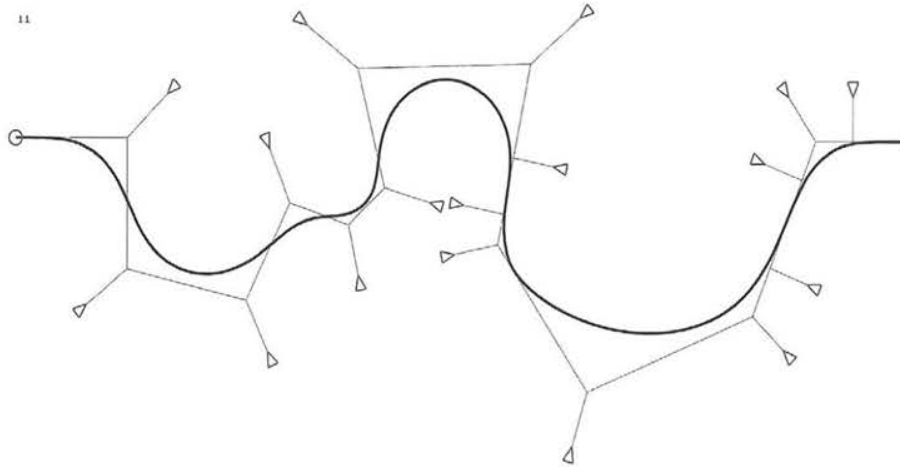
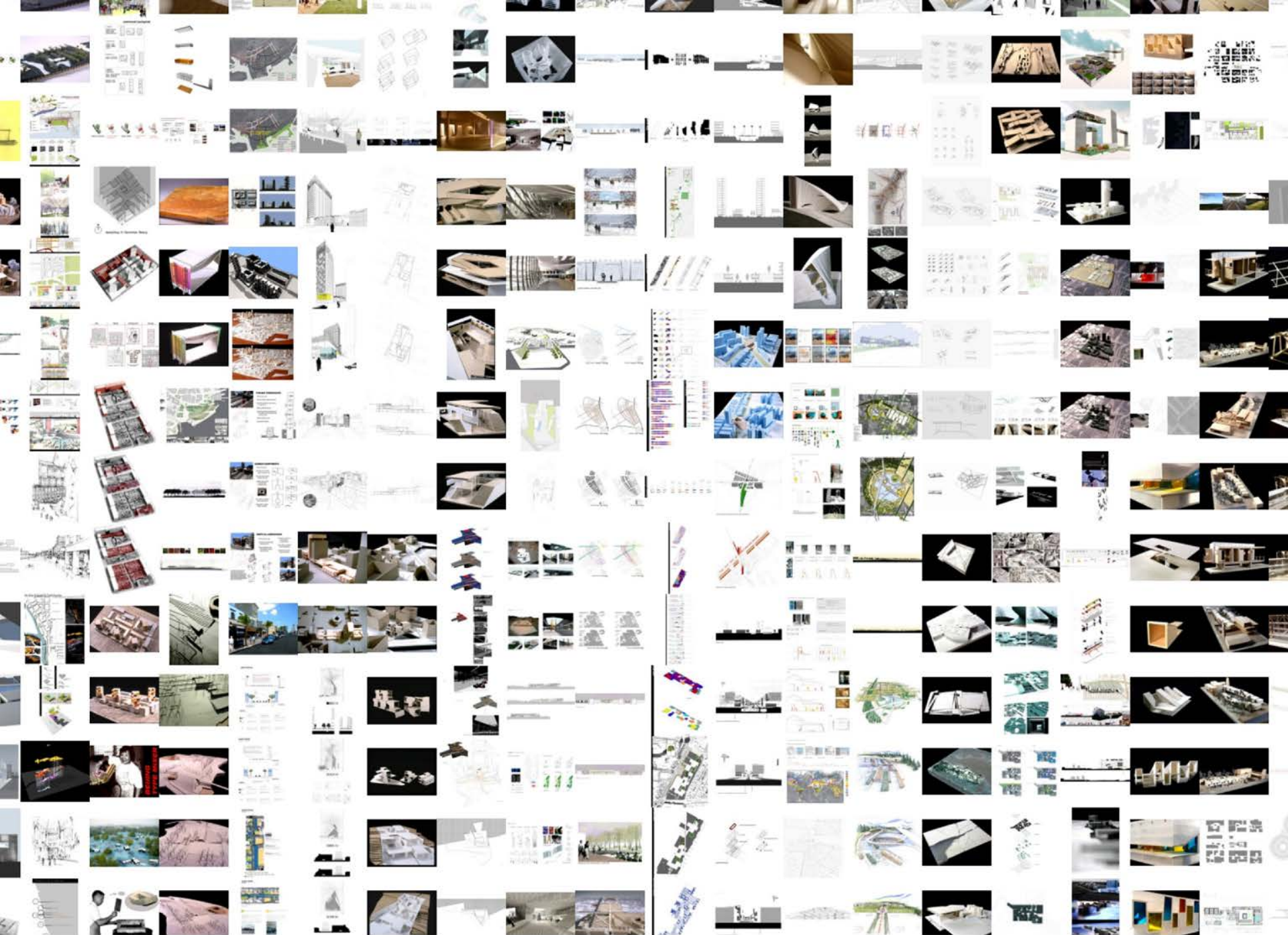


Figure 11:
 A similar curve described using spline geometry, in which the radii are replaced by control vertices with weights and handles through which the curved spline flows.



Harvard Graduate School of Design student work

StudioWorks_Data_20140113.xlsx - Excel

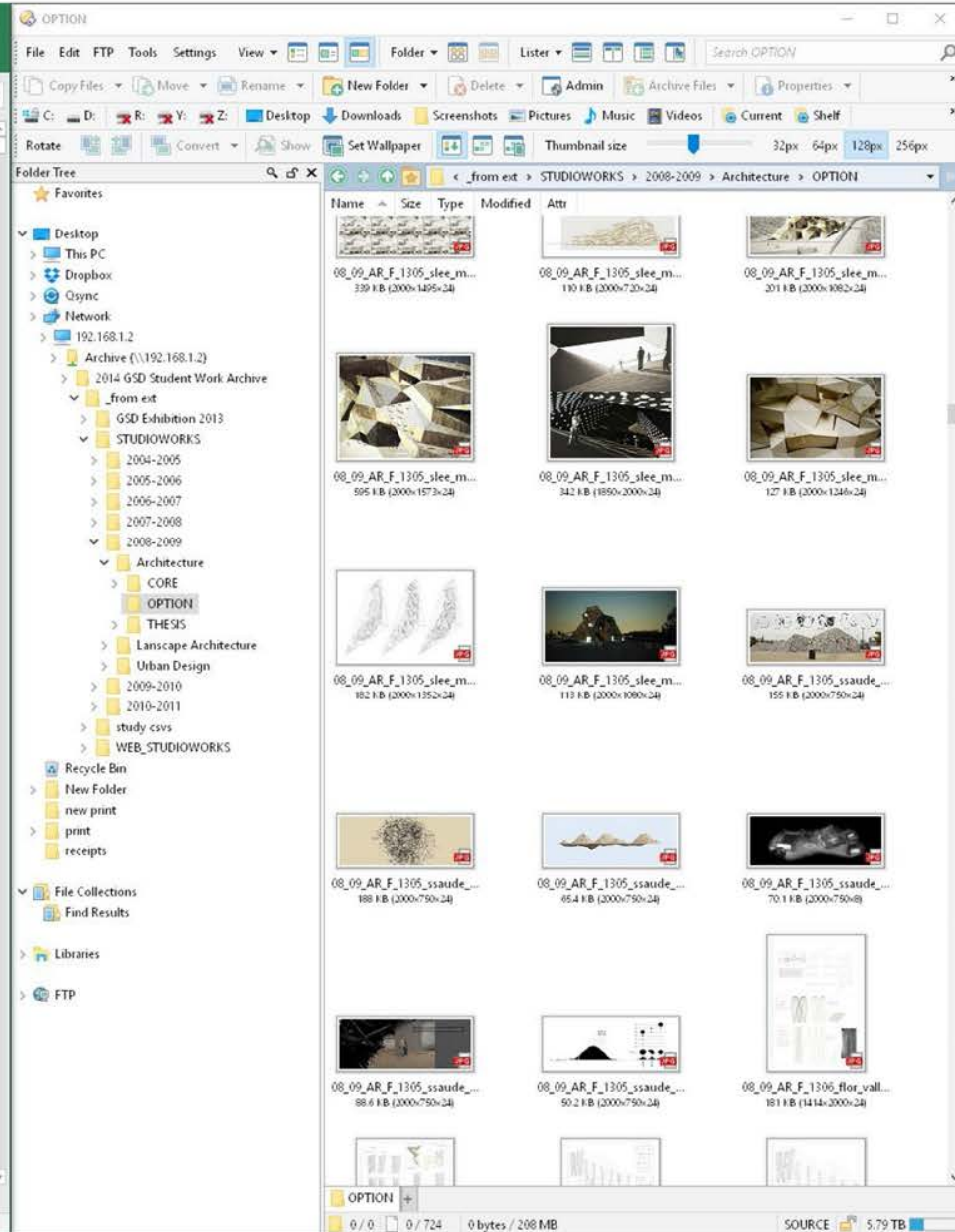
File Home Insert Page Layout Formulas Data Review View ACROBAT Tell me... Matthew Allen Share

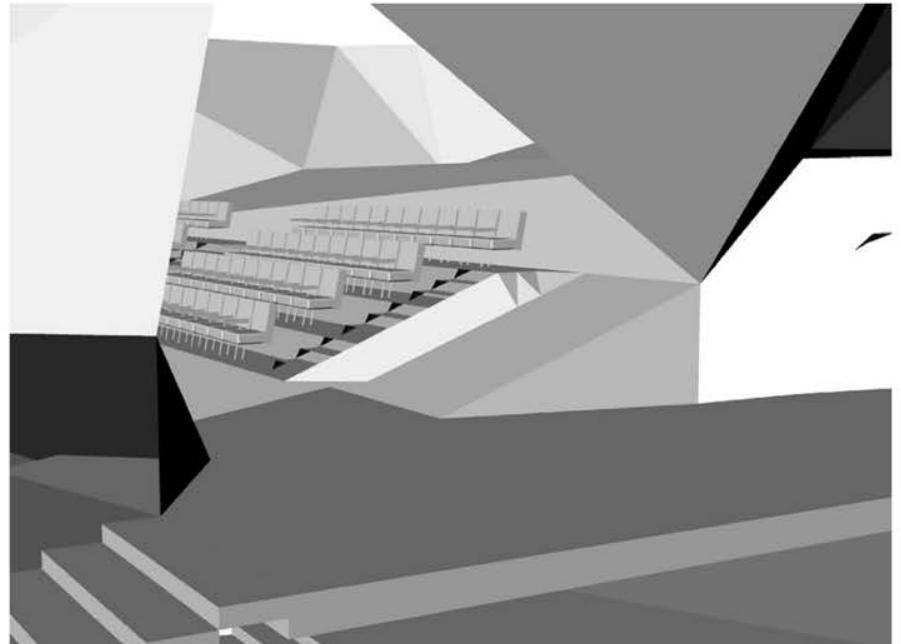
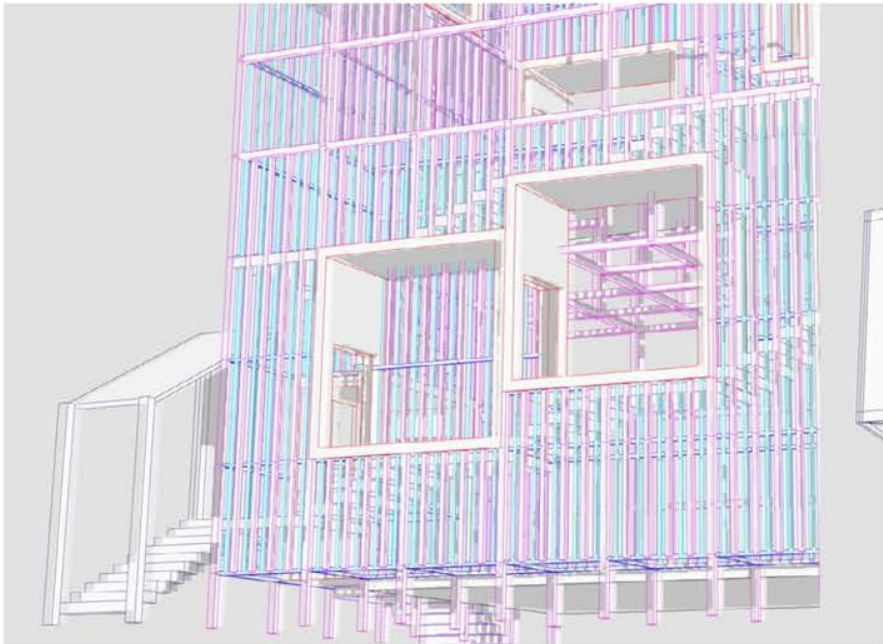
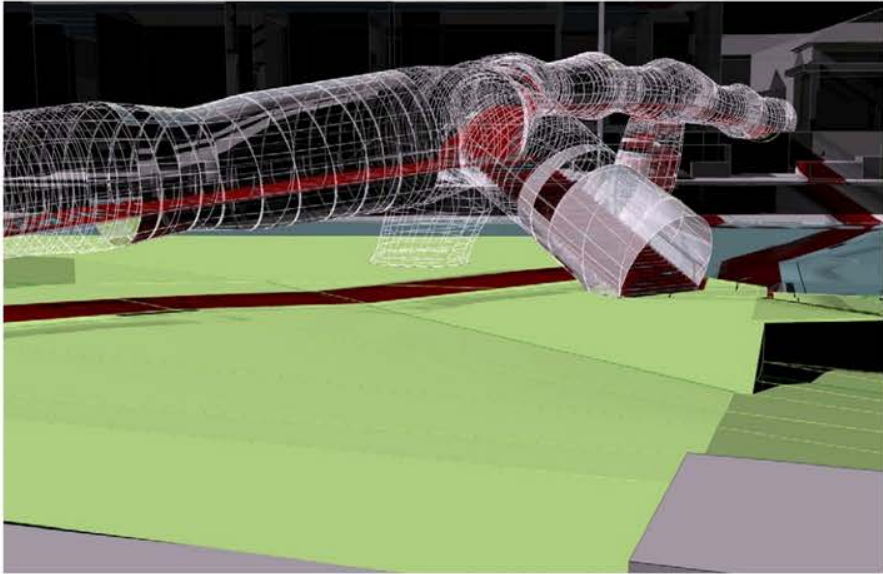
H25 Darell Fields, John Bass, Vincent James, Laura Miller, Gary Rohrbacher, Sarah Whiting

	G	H	I	J	L	M	
1	Year/Term	Faculty	Dept	Opti	ID#	Work Title	Work Descripti
2	FALL 2003	Toshiko Mori	A	T	5134	East Elevation	
3	FALL 2003	Toshiko Mori	A	T	5135	Plans of Plans of Level 1,2,3 and 4	Office Floor an
4	FALL 2003	Toshiko Mori	A	T	5136	Plans of Level 7 and 8	Level 7 Gallery
5	FALL 2003	Toshiko Mori	A	T	5137	Plans of Level 9 and 11	Level 9 Lounge
6	FALL 2003	Toshiko Mori	A	T	5138	Section East-West	
7	FALL 2003	Toshiko Mori	A	T	5139	Perspective from the street	Looking East Fr
8	FALL 2003	Toshiko Mori	A	T	5140	Perspective Walking Down on Bowery Street	Looking South
9	FALL 2003	Toshiko Mori	A	T	5143	Research	Mission
10	FALL 2003	Toshiko Mori	A	T	5144	Gallery Typologies and Boundary Conditions	
11	FALL 2003	Toshiko Mori	A	T	5145	Interior Perspective	Lobby View
12	FALL 2003	Toshiko Mori	A	T	5146	Interior Perspective	Cyber Cafi View
13	FALL 2003	Toshiko Mori	A	T	5147	Interior Perspective	Lobby Grand St
14	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1744	Model	
15	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1850	XL2: Urban Islands	
16	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1851	LL Analyzing Urbanism	
17	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1852	M1 Blocks	
18	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1853	M1 Blocks	
19	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1854	M2 in between	
20	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1855	M3 semi public/semi private zones	
21	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1856	D2 Diagram	
22	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1857	D3 Diagram	
23	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1858	D6 Diagram	
24	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1859	P6 Partial Plan 44'	
25	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1860	P10 Unit Plans	
26	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1861	Sections	
27	SPR 2002	Laura Miller, Gary Rohrbacher, Sarah	A	C	1862	Elevations	
28	FALL 2001	Joseph MacDonald, Ashley Schafer, Ron	A	C	1756	Regional Sport Facilities. Final model	
29	FALL 2001	Joseph MacDonald, Ashley Schafer, Ron	A	C	1757	Regional Sport Facilities. Wall section	
30	FALL 2001	Joseph MacDonald, Ashley Schafer, Ron	A	C	1758	Regional Sport Facilities	
31	FALL 2001	Joseph MacDonald, Ashley Schafer, Ron	A	C	1759	Regional Sport Facilities. Site Plan	
32	FALL 2001	Joseph MacDonald, Ashley Schafer, Ron	A	C	1760	Regional Sport Facilities. Plan	
33	FALL 2001	Joseph MacDonald, Ashley Schafer, Ron	A	C	1761	Regional Sport Facilities. Plan	
34	FALL 2001	Joseph MacDonald, Ashley Schafer, Ron	A	C	1762	Regional Sport Facilities. Surface migration diagram	
35	FALL 2001	Alejandro Aravena	A	O	1765	Penalolen. Shanty town area in Santiago	
36	FALL 2001	Alejandro Aravena	A	O	1766	Penalolen. Shanty town area in Santiago	
37	FALL 2001	Alejandro Aravena	A	O	1767	Density. Extended urban carpet housing	
38	FALL 2001	Alejandro Aravena	A	O	1768	Elevation	
39	FALL 2001	Alejandro Aravena	A	O	1769	Interior Perspective. Working and living	
40	FALL 2001	Alejandro Aravena	A	O	1770	Perspective View in to communal courtyard	
41	FALL 2001	Alejandro Aravena	A	O	1771	Church, Shop.	

Sheet1 Sheet2 Sheet3

Ready 100%





Harvard Graduate School of Design student work

When the GSD Designed Software

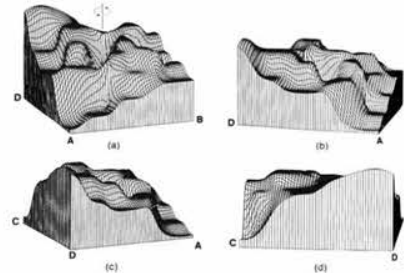
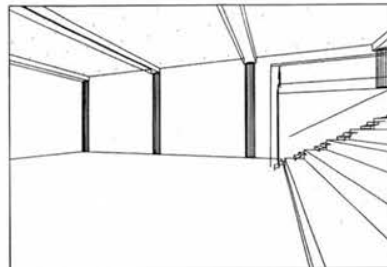
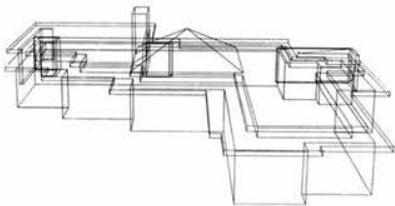
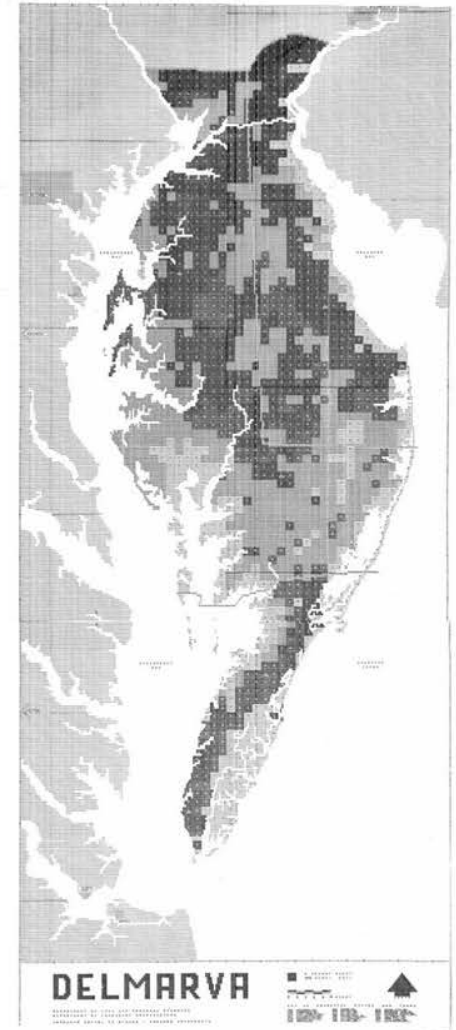
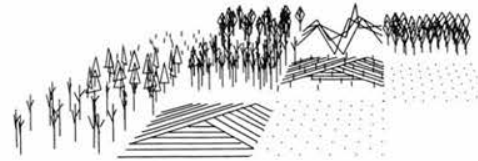
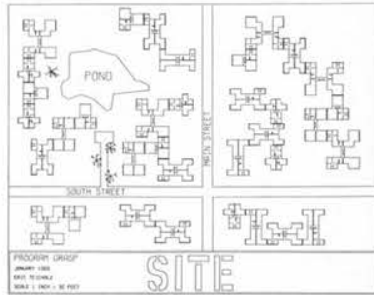
*experiments in computer vision,
1965-1991*

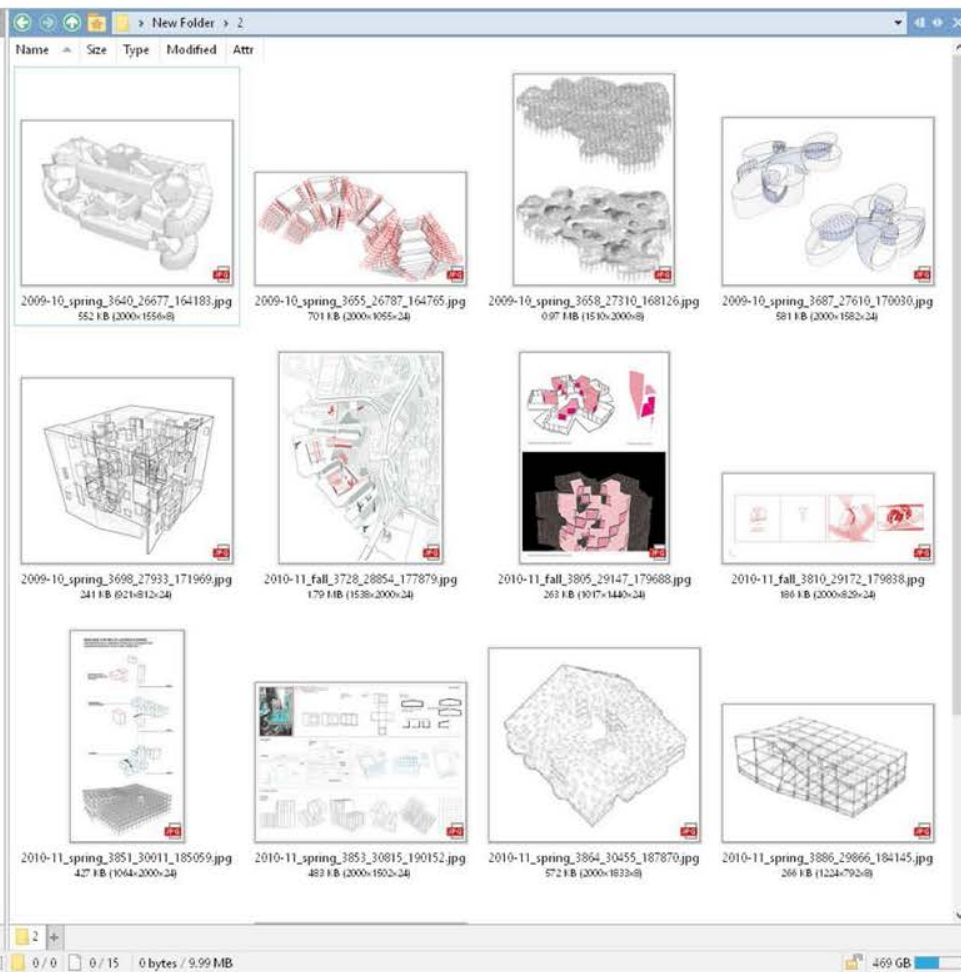
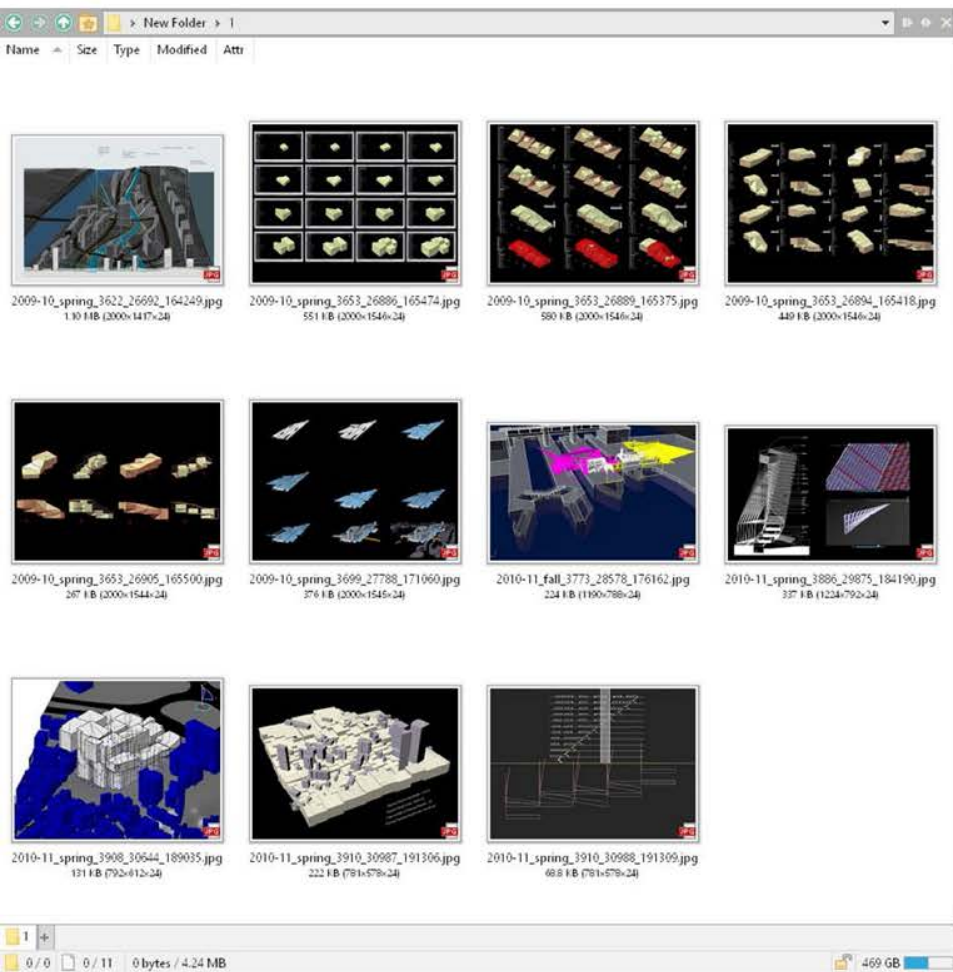
Between 1965 and 1991, the Laboratory for Computer Graphics and Spatial Analysis* involved Harvard and the GSD in the mercurial business of software development. Both academic and entrepreneurial, the Lab created dozens of pieces of software – from minimal, experimental apps to general purpose packages destined to redefine entire markets. Throughout this ceaseless, even excessive production ran a determination to model the activity of planners, designers, and architects in bits and bytes – in short, to teach computers to see the way we do.

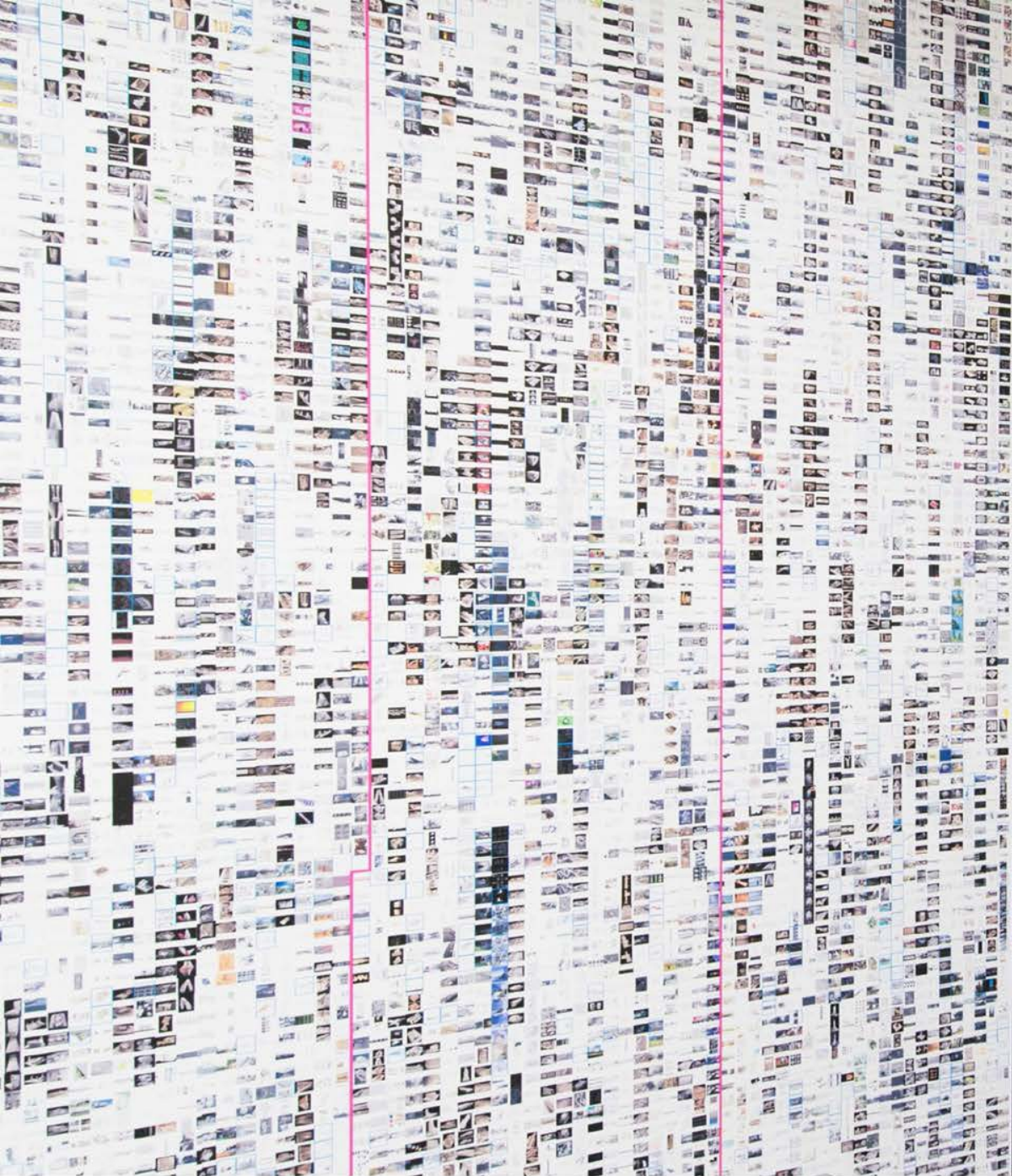
* Produced in Laboratory for Computer Graphics and Spatial Analysis, Harvard University and MIT.

As you might expect, both "design" and "computation" were redefined along the way. Today it seems obvious that each implicates the other; the Laboratory for Computer Graphics and Spatial Analysis helped usher in our computational second nature. Reflecting on the images collected here – each the output of software tailor-made to carry out a particular type of analysis and produce a particular type of image – exposes the work required to connect design to computation. It could have been (and still can be) done differently.

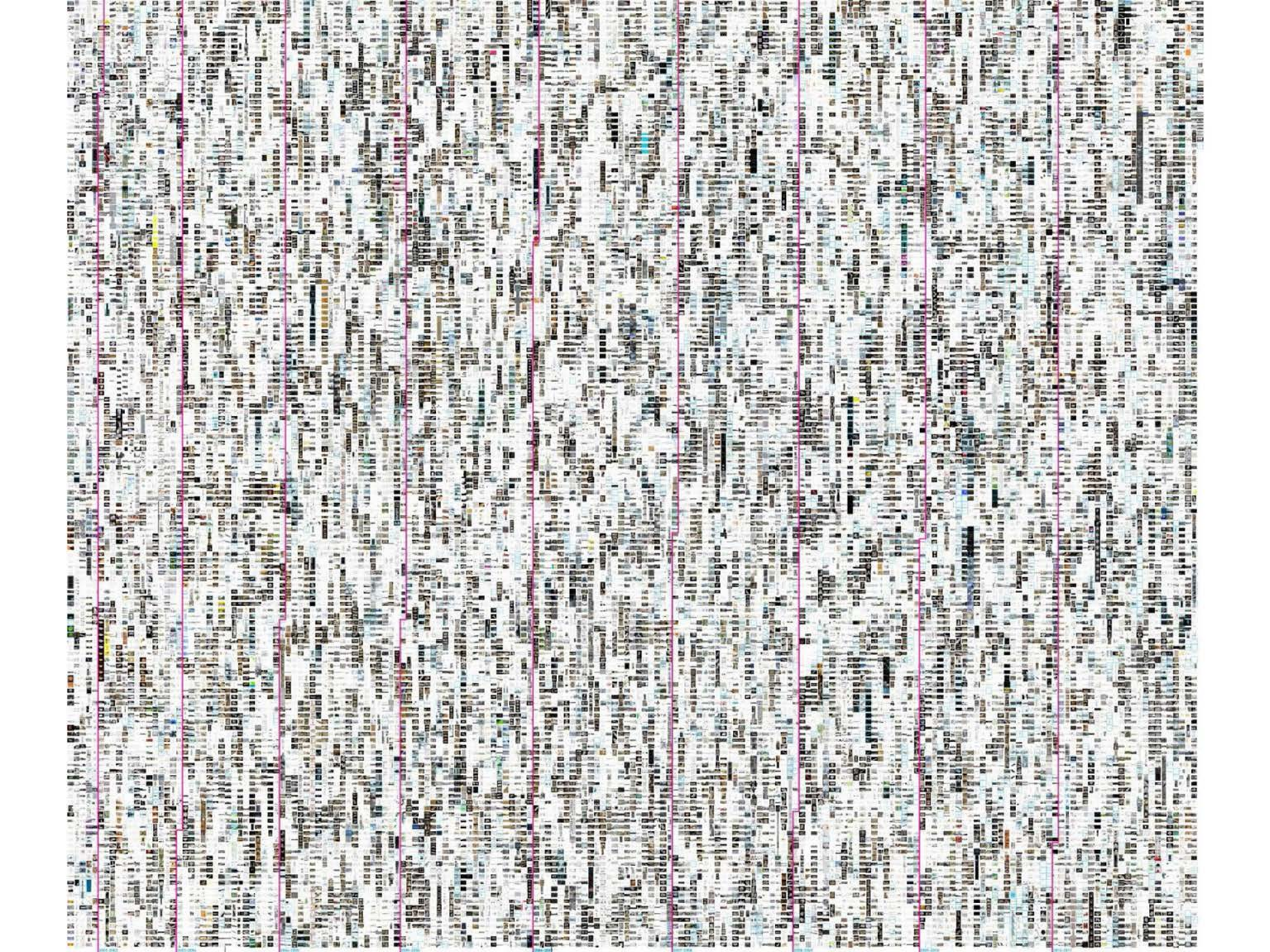
Curated by Matthew S. Clark, Visiting Assistant Professor, Harvard University
MIT 485-0286 • www.gsd.harvard.edu







Animating the Archive exhibition in Loeb Library



Including

work by...

Aaron Cohen
Aaron Dorf
Aaron Goldstein
Aaron Wasserman
Aaron Young
Abby Feldman
Abdulatif Almishari
Abdulla Darrat
Abhishek Sharma
Abigail Klima
Abraham Aluicio
Adalie Pierce-Mcmanamon
Adam Christian
Adam Deromedi
Adam Greene
Adam Meagher
Adam Modesitt
Adam Semel
Adam Wodka
Adi Assif

Danielle Meyer
Daohan Wang
Dara Huang
Daria Khapalova
Darin Mano
Darina Zlateva
Darren Chang
Darren Sears
Darwin Marrero Carrer
Da-Un Yoo
David Brown
David Cutler
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David Gwinn
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Jihoon Song
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Miks Karklins
Milee Shrestha
Min Ter Lim
Mina Nishio
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Ming-Jen Hsueh
Minhwan Park
Minmin Zeng
Miranda Callahan
Mireille Kameni
Miriam El Rassi
Misato Odanaka
Misrak Brhane
Misty Boykin
Mo Lee
Modesto Bigas-Valedon
Mojtaba Ansari

Tiffany Stetiu Otis
Tiffany Wey
Timothy Caito
Timothy Pingree
Timothy Wong
Tin Tak Cho
Tobias Armorst
Tobias Oriwol
Todd Furgason
Todd Gilens
Todd Wenskoski
Tomas Janka
Tomislav Dushanov
Tommy Chan
Tommy Pao
Tomohisa Miyauchi
Tomoro Aida
Tongqi Liu
Tonya Ohnstad
Trevor Patt

Including work by...

[A large, dense list of names and titles, likely a credits or acknowledgments page, is visible on the left side of the display. The text is too small to read accurately.]

Analysis!

V-Ray Defaults

Rhino Grey

Urban Wireframes

Make2d

Explosions

Families & Iterations

Boxes

Screenshots

Capturing Complexity

Screen Colors

Texture Maps

Skies



ng

/...

Analysis!

V-Ray Defaults

Scene Size

Global Illumination

Materials

Environment

Render Settings

EXIT



Animating the Archive

Representation has typically sought to remove the "aura" of the technology that produced it. What, then, is a possible alternative which, without being used to create a plan or a rendering, but through representation (including itself?) Design Pagine, Scenome, whether technically or not, are an attempt to give rise to the user and designers with which an image was produced. This is what usually happens when a representational model is used to show and to use. This has not been perfect and required, in fact, as technical as new technology, iterative approaches to many such images. The exhibition will also include some of the technical images, at least in the case of those produced in the 2000s, to allow the comparison of production and installation conditions, possibly to the design process and post-up publication rights of the designer.

On the work wall you will find all of the images selected between Fall 2000 and Spring 2001 as part of the end of a research project of selected images work.

Key images from this period are being presented. They are organized by theme and related phenomena, including a set of images of the development of software-based representational techniques. They are connected with other works of the same period, the history of these technical images in the history and challenges of why or when production.

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Live from the trays!

METAL CUTS

In the late 1400's men began to use relief printing surfaces of metal as well as of wood. On rare occasion it is difficult to tell at first glance whether a print was pulled from a metal or a wooden surface. There is no practical difference between the ways in which wood and metal relief surfaces receive and deposit ink. In making metal cuts the old engravers cut away from the surfaces of their metal plates the parts that were not to print, just as the woodcutters did with wood blocks, except that instead of using knives and gouges they used the punches and engraving tools used by silversmiths and goldsmiths for the decoration of their wares. The metal plates, after being engraved, were fastened on pieces of wood and then printed as though they were woodcuts. Some engraver's tools are reproduced on pages 6 and 7.

In the late 1790's William Blake, in making the relief metal plates for his *Songs of Innocence*, drew his designs on clean copper plates with a brush and liquid etching ground, and then etched away the whites. The so-called line and half-tone cuts in our modern periodicals, books, and newspapers, are usually printed from etched relief metal plates made by photo-mechanical process.



This detail from a late fifteenth century German metal cut shows that the metal plate was mounted on a piece of wood. The head of one of the nails that held the plates on the wood can be seen above the halo. The difference between the engraved lines and the punched dots and patterns is obvious.

39

40



This is a detail from an illustration in a 14th century prayer book printed on vellum at Paris in 1368. The original engraved relief plate of copper from which it was printed was recently in a private collection in Paris. The plate was used to print from as late as 1899. Compare the white flicks in the ground with the flicks in the illustrations on pages 96 and 95.

41



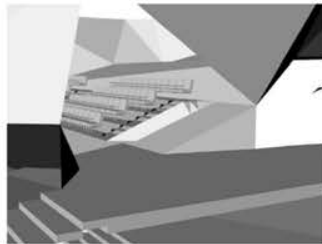
Blake, instead of engraving away the whites in his relief metal printing surfaces, etched them away. He claimed that the technique was revealed to him in a dream. It is now a standard part of all modern photo-mechanical relief processes. Blake printed these relief plates in single colors, e.g., red or green, and afterwards painted them up with water colors more or less laboriously as he received more or less money for them.

42

RHINO GREY

The majesty of the impact of the recent widespread use of computers in architectural practice has been through the increased use of 3D modeling software. The software packages used in new and exciting ways by architects in the 1990s and 2000s was developed for animators in movies and feet of aerospace engineering. The first version of Rhinoceros 3D was released in 2001, it was from the beginning targeted towards a more modest audience, including jewelry designers, small boat engineers, and architects. Because it was relatively inexpensive, Rhino was used widely in architecture schools in the 2000s.

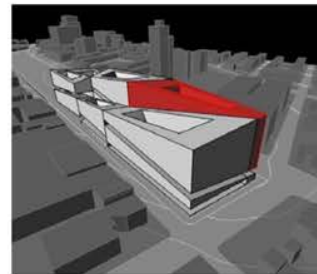
The characteristics of rhino conspire to make it a good medium for abstract geometrical studies. Objects in rhino characterised by distinctive grey shading. Tends to be dark range of grey. Rhino is not particularly adept at photo-realistic rendering. Ease of precise manipulation of points, curves, surfaces.



This screenshot shows a rendered view in Rhino, faceted geometry with crisp edges, objects coming together at sharp points a natural occurrence in Rhinos.

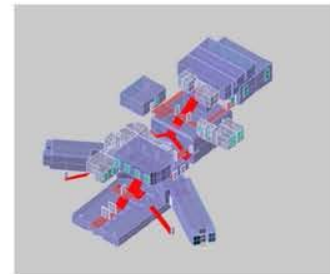
33

34



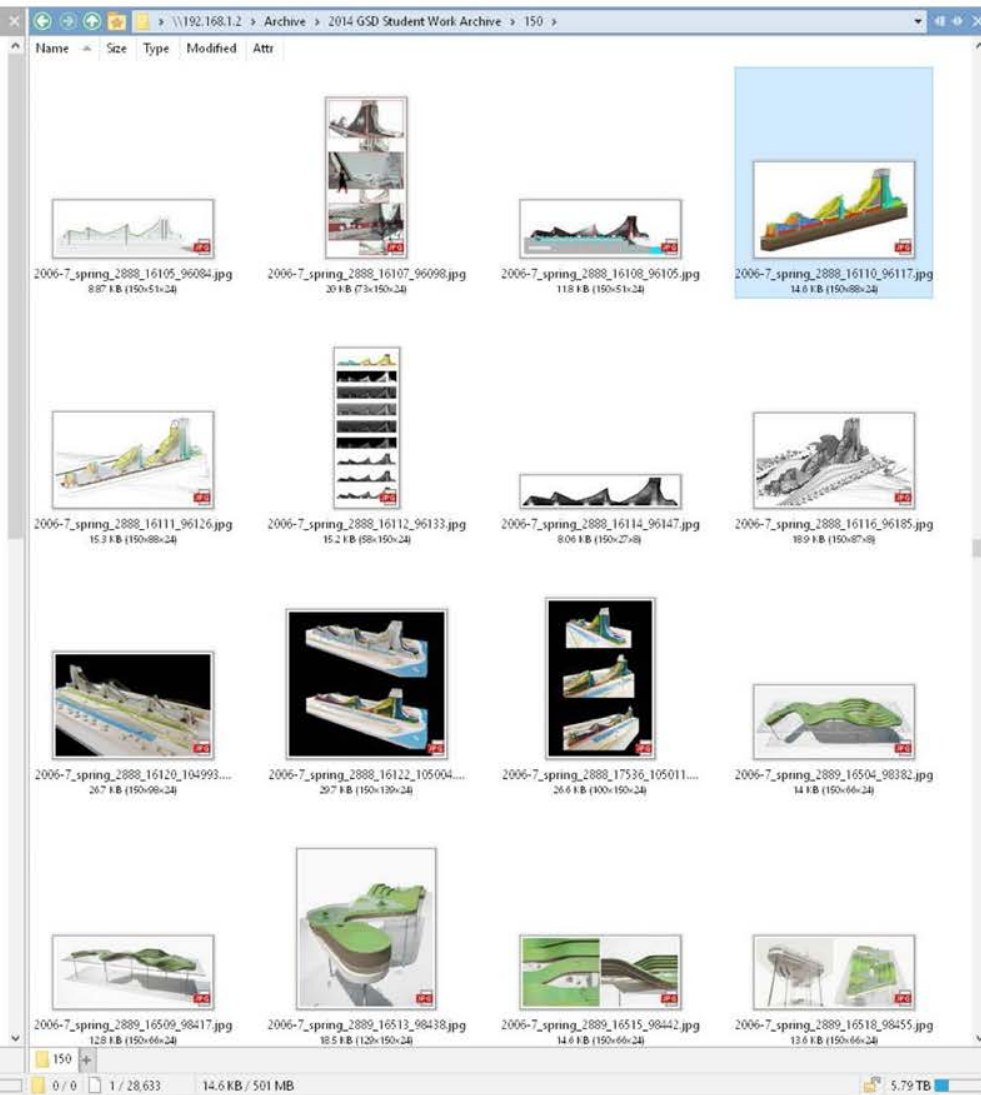
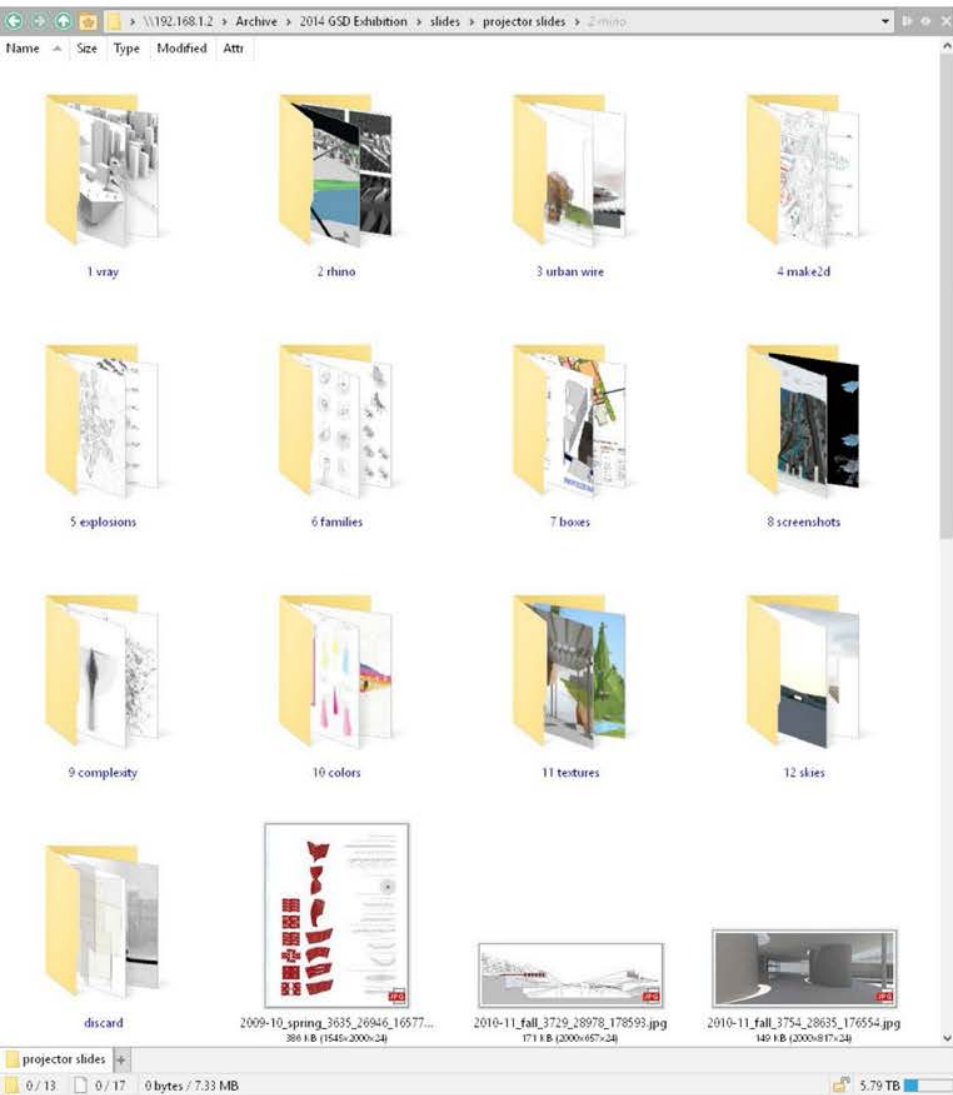
versions 4 and 5 default to double thickness of lines on surfaces, cartoon object quality. Black background and draw context makes intervention stand out, feel of nightmare or dystopian future.

34



ghosted view, incoheres on surfaces (the two crossing lines through the surface).

35







Harvard Graduate School of Design, Lightfall exhibition (work of Preston Scott Cohen)

Name	Size	Type	Modified	Attr
2003_06 Competition		File Folder	5/13/2010 4:39 AM	-a-....
2005_07 Suppliers Web Sites		File Folder	2/2/2011 3:19 AM	-a-....
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2006 Excavation Permit		File Folder	11/2/2010 10:57 AM	-a-....
2006 Survey		File Folder	5/13/2010 2:10 AM	-a-....
2006_02 Images		File Folder	5/13/2010 1:08 AM	-a-....
2006_04 Isamu Model		File Folder	2/2/2011 3:38 AM	-a-....
2006_05 MOCA		File Folder	4/7/2011 5:15 AM	-a-....
2006_06 Presentation		File Folder	1/24/2011 6:06 PM	-a-....
2006_09 Fundraising Invitation		File Folder	5/13/2010 12:31 AM	-a-....
2006_09 Planning Dept Renderings		File Folder	5/13/2010 12:33 AM	-a-....
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2006_10 MOCA		File Folder	4/7/2011 5:15 AM	-a-....
2007_01 Presentation		File Folder	5/13/2010 12:32 AM	-a-....
2007_06 PDF for Nanjing		File Folder	5/13/2010 2:06 AM	-a-....
2007_07 Animations		File Folder	2/2/2011 1:55 AM	-a-....
2007_07 Tender		File Folder	5/13/2010 12:33 AM	-a-....
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2008_03 Renderings		File Folder	1/24/2011 6:03 PM	-a-....
2008_07 Skin		File Folder	5/13/2010 2:14 AM	-a-....
2008_08 Dave Renderings		File Folder	2/2/2011 2:03 AM	-a-....
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2009_05 Plaza		File Folder	1/24/2011 6:03 PM	-a-....
2009_11 IWAN BAAH		File Folder	5/13/2010 2:11 AM	-a-....
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2010_02 Lightfall Diagram		File Folder	5/13/2010 2:11 AM	-a-....
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2010_08 NYTimes Renderings		File Folder	4/6/2011 9:12 AM	-a-....
2010_09 Working Drawing PDFs		File Folder	1/24/2011 5:54 PM	-a-....
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from Amit		File Folder	11/2/2010 10:39 AM	-a-....
From backup		File Folder	5/13/2010 1:08 AM	-a-....
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Office docs1		File Folder	8/12/2011 10:20 PM	-a-....
PHOTOS		File Folder	4/7/2011 5:52 AM	-a-....
PLANS-ILLUSTRATOR		File Folder	8/11/2011 5:31 AM	-a-....
PLOT-EDIT		File Folder	1/24/2011 5:54 PM	-a-....
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Amr.pdf	58.3 KB	Adobe Acrobat Document	11/6/2009 10:36 AM	-a-....
FullModel_20080721.3dm	127 MB	Rhino 3-D Model	7/21/2008 9:27 PM	-a-....
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newskin_fornichelle.3dm	4.52 MB	Rhino 3-D Model	7/25/2008 5:25 PM	-a-....
newskin_TAMA.zip	1.19 MB	zip Archive	7/25/2008 5:27 PM	-a-....
Shortcut to Construction Photos	567 bytes	Shortcut	1/28/2010 12:49 PM	-a-....
site lines.3dm	6.10 MB	Rhino 3-D Model	10/27/2009 3:08 PM	-a-....
SKIN w THICKNESS.3dm	12.7 MB	Rhino 3-D Model	10/14/2008 6:13 AM	-a-....
TAMA - Structure and Skin.3dm	75.6 MB	Rhino 3-D Model	12/18/2009 2:45 AM	-a-....
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TAMA discretization diagram.pdf	75.1 KB	Adobe Acrobat Document	6/30/2008 5:31 PM	-a-....
TAMA Plaza View_v2.zip	86.7 MB	zip Archive	8/4/2008 3:08 PM	-a-....
tama views options.ini	87.2 KB	Configuration settings	8/5/2011 4:12 PM	-a-....
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TELAVIV-TakingViews3.3dm	128 MB	Rhino 3-D Model	8/5/2011 5:57 PM	-a-....
TELAVIV-TakingViews3-ma.3dm	105 MB	Rhino 3-D Model	8/2/2011 10:44 AM	-a-....
TELAVIV-TakingViews3-ma.3dm.bak	105 MB	BAK File	8/5/2011 6:36 PM	-a-....
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Workshop ceiling plan.pdf	91.2 KB	Adobe Acrobat Document	8/5/2008 9:34 AM	-a-....
Workshop cross section.pdf	33.7 KB	Adobe Acrobat Document	8/5/2008 9:34 AM	-a-....
Workshop floor plan.pdf	146 KB	Adobe Acrobat Document	8/5/2008 9:34 AM	-a-....
Workshop lighting cut sheets.pdf	6.84 MB	Adobe Acrobat Document	8/5/2008 9:34 AM	-a-....
Tama		File Folder	11/2/2010 10:58 AM	-a-....

0 / 65 0 / 38 1 hidden 0 bytes / 1.53 GB

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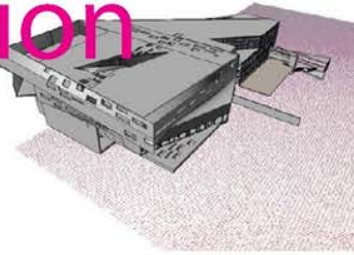
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SOURCE 166 GB



model / form evolution

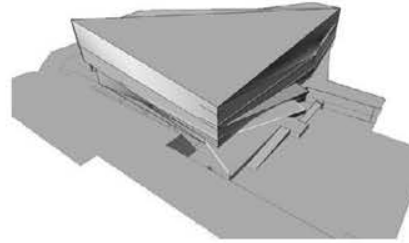
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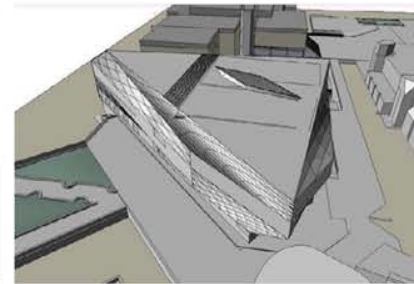
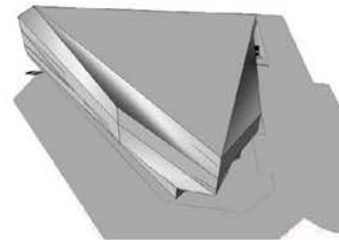
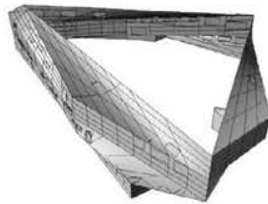
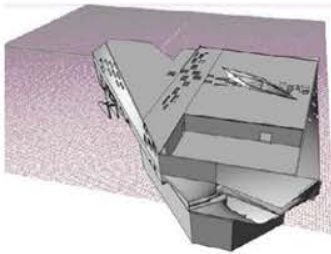
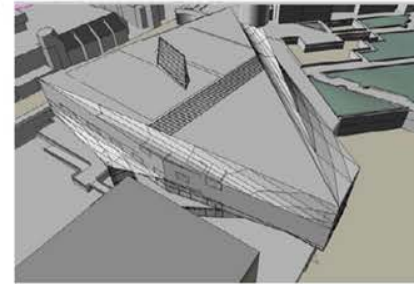
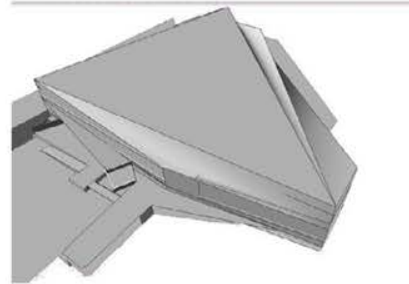
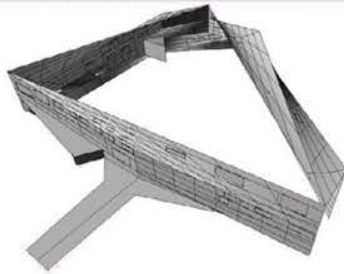
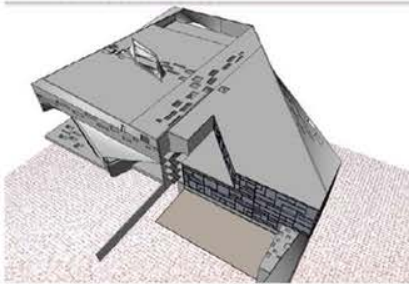
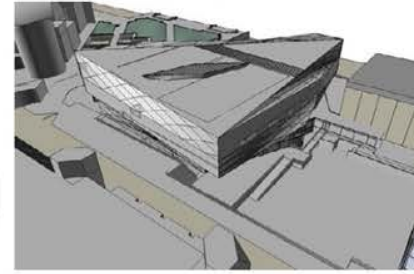
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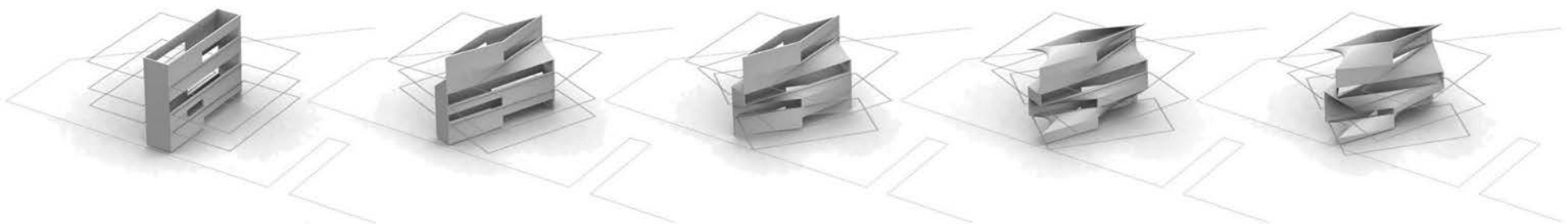


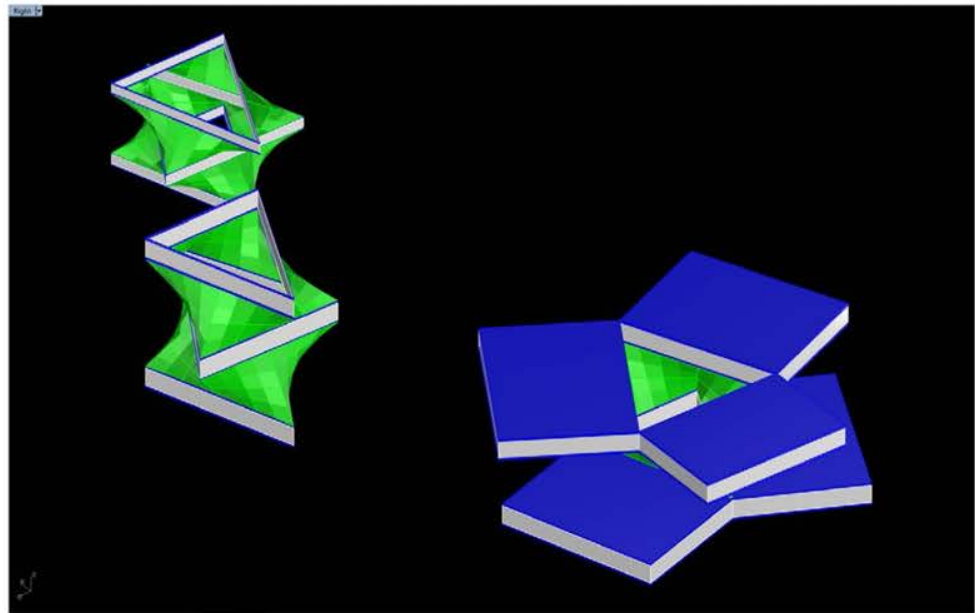
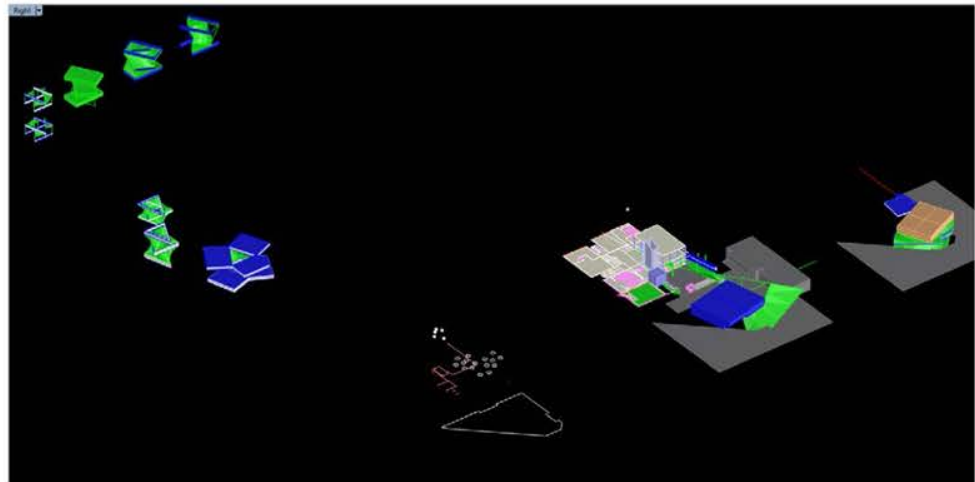
2005/07/15



2005/11/23







Preston Scott Cohen, Lightfall photograph and working files

Folder Tree

- Tama
 - 2003_06 Competition
 - Competition Stages 1
 - 2003_03_13 CAMERON tama backup mod
 - 2003_03_18 CAMERON tama backup
 - 2003_03_25 CAMERON tama backup mod
 - 2003_03_30 CAMERON tama backup leoni
 - 2003_04_04 CAMERON tama backup
 - 2003_04_08 CAMERON tama backup
 - 2003_04_12 CAMERON tama backup with
 - 2003_04_16 CAMERON tama backup
 - 2003_04_21 CAMERON tama backup mod
 - 2003_04_24 CAMERON tama backup folde
 - 2003_04_24 CAMERON tama backup folde
 - 2003_04_24 CAMERON tama backup folde
 - 2003_05_19 CAMERON tama backup from
 - 2003_5 ANDREW tama competition stage
 - Competition Stages 2
 - stageIHoxie
 - 2005_07 Suppliers Web Sites
 - 2006 Building Permit
 - 2006 Excavation Permit
 - 2006 Survey
 - 2006_02 Images
 - 2006_04 Isamu Model
 - 2006_05 MOCA
 - 2006_06 Presentation
 - 2006_09 Fundraising Invitation
 - 2006_09 Planning Dept Renderings
 - 2006_10 AD Presentation
 - 2006_10 MOCA
 - 2007_01 Presentation
 - 2007_06 PDF for Nanjing
 - 2007_07 Animations
 - 2007_07 Tender
 - 2007_08 ICA Model and Poster
 - 2008_03 Renderings
 - 2008_07 Skin
 - 2008_08 Dave Renderings
 - 2008_08 Dave Rhino Model
 - 2008_08 Hoxie Renderings
 - 2008_08 Plaza Rendering
 - 2009 Lightpoles
 - 2009_01 Auditorium Lighting
 - 2009_06 Plaza
 - 2009_11 IWAN BAAH
 - 2009_11 Library Millwork
 - 2010_02 Lightfall Diagram
 - 2010_04 Shop
 - 2010_08 NYTimes Renderings
 - 2010_09 Working Drawing PDFs
 - 2010_10 New Chimney Locations

2003_03_25 CAMERON tama...

Name	Size	Type
Atrium.3dm	6.10 MB	Rhino 3-D
Big.nrb	272 KB	NB File
big.stl	127 KB	3D Objec
ceiling_test01.tif	1.17 MB	FastStone
ceiling_test02.tif	1.17 MB	FastStone
Cell.3dm	103 KB	Rhino 3-D
Cell02.3dm	2.38 MB	Rhino 3-D
Cell03.3dm	2.79 MB	Rhino 3-D
Cell04.3dm	3.05 MB	Rhino 3-D
conoind.3dm	40.1 KB	Rhino 3-D
Duarte01.dpg	194 bytes	DPG File
Gallery_600.3dm	11.5 MB	Rhino 3-D
gill01.dpg	454 bytes	DPG File
Joint.dpg	439 bytes	DPG File
Joint.nrb	287 KB	NB File
Joint.stl	146 KB	3D Objec
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Joint(times).3dm	218 KB	Rhino 3-D
Joint(sinusoidal).dpg	470 bytes	DPG File
Joint(sinusoidal).nrb	287 KB	NB File
joint_3Bays.stl	245 KB	3D Objec
Joint_6m.nrb	711 KB	NB File
Scherk(Parallel).dpg	432 bytes	DPG File
Scherk(Parallel_racked).dpg	444 bytes	DPG File
Scherk(Parallel_racked(animated)).dpg	454 bytes	DPG File
Scherk(Perpendicular).dpg	226 bytes	DPG File
Scherk_Cell.3dm	1.58 MB	Rhino 3-D
Sec01.jpg	156 KB	JPEG ima
Sec02.jpg	147 KB	JPEG ima
Small.nrb	308 KB	NB File
small.stl	158 KB	3D Objec
TAMA_Mar14.3dm	32.3 MB	Rhino 3-D
TAMA_Mar15.3dm	8.60 MB	Rhino 3-D
TAMA_Mar16.3dm	13.6 MB	Rhino 3-D
TAMA_Mar16(size).3dm	13.6 MB	Rhino 3-D
TAMA_Mar16a.3dm	14 MB	Rhino 3-D
TAMA_Mar17.3dm	18.9 MB	Rhino 3-D
TAMA_Mar17a.3dm	19 MB	Rhino 3-D
TAMA_Mar18.3dm	20.3 MB	Rhino 3-D
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TAMA_Mar18B.3dm	21.9 MB	Rhino 3-D
TAMA_Mar18C.3dm	22.4 MB	Rhino 3-D
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TAMA_Mar18E.3dm	27.1 MB	Rhino 3-D
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TAMA_Mar19B.3dm	22.5 MB	Rhino 3-D
TAMA_Mar19C.3dm	21.6 MB	Rhino 3-D
TAMA_Mar20A.3dm	22.8 MB	Rhino 3-D
TAMA_Mar20B.3dm	22.9 MB	Rhino 3-D
TAMA_Mar20C.3dm	23.1 MB	Rhino 3-D
TAMA_Mar21A.3dm	22.7 MB	Rhino 3-D

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Folder Tree

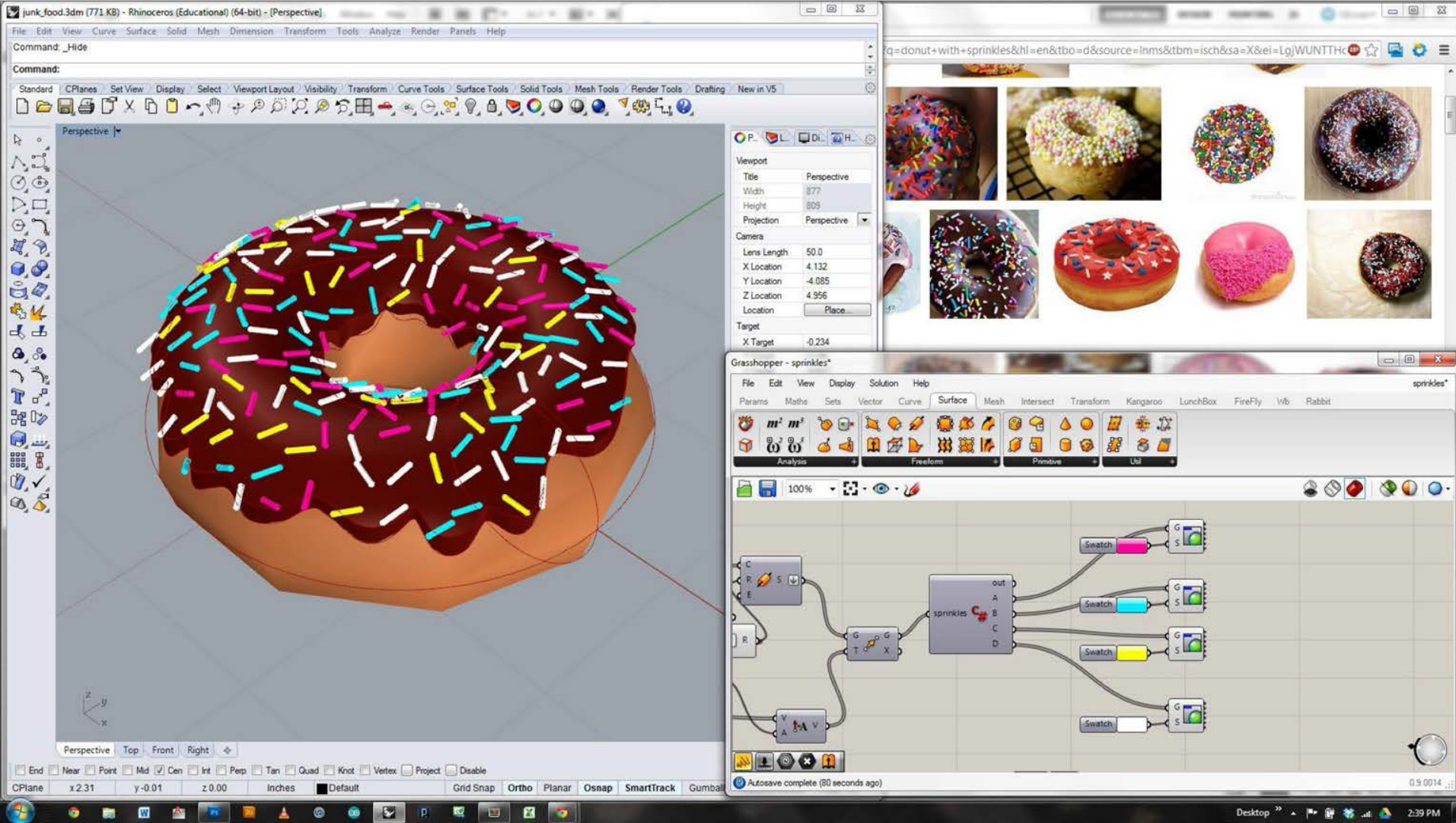
- Tama
 - 2003_06 Competition
 - 2005_07 Suppliers Web Sites
 - 2006 Building Permit
 - 2006 Excavation Permit
 - 2006 Survey
 - 2006_02 Images
 - 2006_04 Isamu Model
 - 2006_05 MOCA
 - 2006_06 Presentation
 - 2006_09 Fundraising Invitation
 - 2006_09 Planning Dept Renderings
 - 2006_10 AD Presentation
 - 2006_10 MOCA
 - 2007_01 Presentation
 - 2007_06 PDF for Nanjing
 - 2007_07 Animations
 - 2007_07 Tender
 - 2007_08 ICA Model and Poster
 - 2008_03 Renderings
 - 2008_07 Skin
 - 2008_08 Dave Renderings
 - 2008_08 Dave Rhino Model
 - 2008_08 Hoxie Renderings
 - 2008_08 Plaza Rendering
 - 2009 Lightpoles
 - Render Material
 - TAMA_3D poles
 - 2009_01 Auditorium Lighting
 - 2009_06 Plaza
 - 2009_11 IWAN BAAH
 - 2009_11 Library Millwork
 - 09112009
 - Completed
 - duck
 - nuthatch
 - 2010_02 Lightfall Diagram
 - 2010_04 Shop
 - 2010_08 NYTimes Renderings
 - 2010_09 Working Drawing PDFs
 - 2010_10 New Chimney Locations
 - 2010_10 Terrace Rendering
 - 2010_11 NYC fundraiser
 - 2011-04 Sculpture Garden
 - 2011_03 Plan DWGs from Amit
 - 2011_04 April Banquet
 - 033011 KIPNIS MODEL_STL for PRICIN
 - 110512_GALLERY LAYOUT
 - Auditorium
 - Collim
 - Cons
 - Cons1

Tama > 2009 Lightpoles >

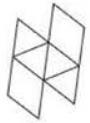
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2009_01_25 Tama Lightpoles.3dm	69.9 MB	Rhino 3-D I
SKIN w THICKNESS.3dm	22.4 MB	Rhino 3-D I
TAMA - Lightpole View 01.jpg	855 KB	JPEG image
TAMA - Lightpole View 02.jpg	735 KB	JPEG image
TAMA - Lightpoles North.jpg	229 KB	JPEG image
TAMA - Lightpoles West Test 03.jpg	212 KB	JPEG image
TAMA - Lightpoles West Test 04.jpg	27.7 KB	JPEG image
TAMA_3D poles.zip	115 KB	zip Archive
TAMA_Site Pole Location_2008-12-15.pdf	2.03 MB	Adobe Acro
tamaexteriorpole.zip	2.09 MB	zip Archive
view 01.hdr	12.9 MB	High Dynan
view 01.psd	19.3 MB	Adobe Phot
view 02.hdr	12.9 MB	High Dynan
view 02.psd	19.2 MB	Adobe Phot
west-too dark.jpg	45.7 KB	JPEG image
west test.jpg	11.2 KB	JPEG image

0 / 2 | 1 / 18 | 1 hidden | 735 KB / 364 | 154 GB





Harvard Graduate School of Design student work



News

Student Portrait: Joshua Feldman (MARCH '16)



July 8, 2016

by

Departments

[Architecture](#)



Windows Explorer window showing a file directory structure. The address bar indicates the path: \\192.168.1.2 \> Archive \> 2014 GSD Student Work Archive \> _from ext \> GSD Exhibition 2015.

Files and folders visible:

- _from ext
- 150
- 300
- All Projects Collapsed Med Res
- archiving
- merge
- wash contact sheets
- working
- brunnhilde.py (33.3 KB)
- Bulk Rename Utility.exe (16.7 MB)
- ddi cataloging fields 11apr08.pdf (123 KB)
- FILE LIST 2.xls (1.35 MB)
- wall1_3dm (173 KB)
- wall1_gh (2.66 KB)

System tray at the bottom shows: 2014 GSD Student Work Archive, 0/8, 0/6, 0 bytes / 18.4 MB, SOURCE, 5.79 TB.

FILE LIST 2.xls (Microsoft Excel (32-bit))

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7761	10_555	10_11_AR_5_1316_sherrera_is3.jpg	A	2010-2011
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7782	10_576	10_11_AR_5_1317_malvarez_bvb08.jpg	A	2010-2011
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7787	10_581	10_11_AR_5_1317_malvarez_bvb14.jpg	A	2010-2011
7788	10_582	10_11_AR_5_1317_malvarez_bvb15.jpg	A	2010-2011
7789	10_583	10_11_AR_5_1317_malvarez_bvb16.jpg	A	2010-2011
7790	10_584	10_11_AR_5_1317_sheldahl_BvB1.jpg	A	2010-2011
7791	10_585	10_11_AR_5_1317_sheldahl_BvB2.jpg	A	2010-2011
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7793	10_587	10_11_AR_5_1317_sheldahl_BvB4.jpg	A	2010-2011
7794	10_588	10_11_AR_5_1317_sheldahl_BvB5.jpg	A	2010-2011
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7796	10_590	10_11_AR_5_1317_sheldahl_BvB7.jpg	A	2010-2011
7797	10_591	10_11_AR_5_1317_sheldahl_BvB8.jpg	A	2010-2011
7798	10_592	10_11_AR_5_1317_sheldahl_BvB9.jpg	A	2010-2011
7799	10_593	10_11_AR_5_1317_sheldahl_BvB10.jpg	A	2010-2011
7800	10_594	10_11_AR_5_1317_sheldahl_BvB11.jpg	A	2010-2011
7801	10_595	10_11_AR_5_1317_sheldahl_BvB12.jpg	A	2010-2011
7802	10_596	10_11_AR_5_1317_sheldahl_BvB13.jpg	A	2010-2011
7803	10_597	10_11_AR_5_1317_sheldahl_BvB14.jpg	A	2010-2011
7804	10_598	10_11_AR_5_1317_sheldahl_BvB15.jpg	A	2010-2011
7805	10_599	10_11_AR_5_1317_ydong_bvb1.jpg	A	2010-2011

FILE LIST 2

Resemble and optimize problems

Plug Ins Eolute



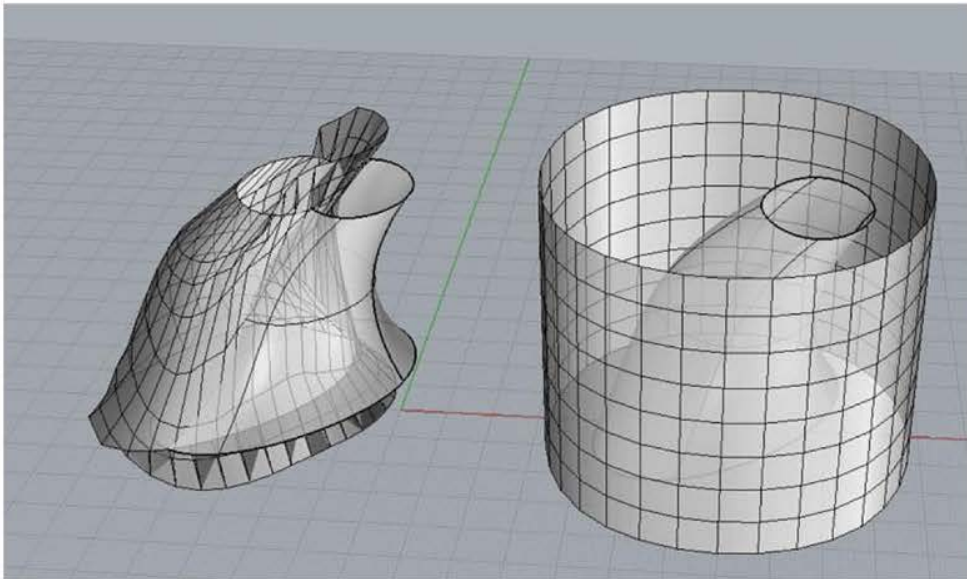
simonsez

May 31

Hello!

i resembled a cylindrical surface as mesh, and tried to optimize it - but nothing good came out.

[2.3dm](#) (961.6 KB)



What's New in Beta 6-Dec-1999

Preview image for 3DM files

Now when you save a file, a preview image of the active viewport is saved. This preview image displays in the Open, Save, and SaveAs dialog boxes.

Save Small option

The **SaveSmall** command saves your file without render meshes to decrease file size. The **Save small** checkbox in the SaveAs and Export dialog boxes also clears the render meshes.

Text and dimensions export to AI and WMF and import and export to DWG/DXF

Text and dimensions export to **Adobe Illustrator (AI)** and **Windows Metafile (WMF)** and import and export AutoCAD **DXF** and **DWG** formats.

BMRT support added

Toolbars and commands to assist assigning materials to objects for rendering in Blue Moon Rendering Tools (**BMRT**) has been added.

POV-Ray support added

Toolbars and commands to assist assigning materials to objects for rendering in POV-Ray has been added.

New Commands

Turntable

The **Turntable** command continuously rotates the view. You can pan and zoom while Turntable is running. You can use the Turntable command inside surface analysis commands, Shade, and RenderPreview.

Hydrostatic calculations for marine design

The **HydroStatics** command displays hydrostatic values for surfaces.

Curve information tools

The **CrvStart** and **CrvEnd** commands place a point at the start point and end point of a curve.



Rhino What's New

[Home](#)[Software](#)[Tutorial](#)[Gallery](#)[Support](#)

Notes for beta build 21-Mar-97

NEW FEATURES:

- Online Help. This is Beta Help. Please do not provide feedback on this yet - we're still a long way from being done. There is a What's New section in the help file that has more details on all the new features listed below.
- Customizable keyboard shortcuts. From the **Tools** menu, click **Shortcut Keys**. Type any command or list of commands in the space provided.
- Periodic surfaces. Closed, smooth surfaces created by some commands in the newest build of Rhino are periodic surfaces. Commands that can create periodic surfaces are **Loft**, **Sweep 2 Rails**, **Sweep Along Path**, **Extrude**, **Revolve**.
- Revolve makes periodic surfaces. Use the deformable option and revolve 360° to create a periodic surface that stays smooth when its control points are edited. Previous releases of Rhino created surfaces of revolution that developed creases when deformed. The deformable option fixes that problem.
- Fillet edges of solids: From the **Solid** Menu, click **Fillet Edges**, or type FLTE. This fillet command that works well on simple objects, but not on complex ones.
- Show control polygon for control point editing. Use the CPTOG command to turn the control polygon on and off.
- Set control polygon display density with the CPDASH command.
- Select rows and columns of control points on surface. There are three new commands to help select rows and columns of control points for editing surfaces.
- Delete control points on curves by selecting them and pressing the DEL key.
- Handlebar curve editor: From the **Curve** menu, click **Point Editing**, then click **Handlebar Editor**.
- Create cross section curves. The CSEC command creates cross section curves through any number of shape curves. It is similar to the 3DS deform fit command. For example, consider modeling a human arm. Profile curves can be drawn from the shoulder to the hand that define the rough shape of the arm. The CSEC command can be used to create slices perpendicular to the arm that can be used for lofting.
- Make curve periodic: From the **Curve** menu, click **Edit Tools**, then click **Make Periodic** or type MAKECURVEPERIODIC, to make a curve periodic.
- Project object to construction plane. From the **Transform** menu, click **Project to Cplane**, or type PROJCP. The objects will be projected to the construction plane in the viewport that is current when the command ends.
- Prepare curves for lofting. The PREPCURVES command Refits a set of curves so they have the same number of control points. If the set of curves are closed curves, a graphical interface allows the

717 did not work before, like Circle with the AroundCurve option.
718 Tab between viewports changed: To tab between viewports, use Ctrl+Tab to make the next viewport active, and Ctrl+Shift+Tab to make the previous viewport active. This is more consistent with other Windows applications, and allows Tab to work better for command completion and direction lock.
719 CreateUVCrV improved: Now CreateUVCrV works correctly with periodic (=smooth closed) surfaces and automatically makes the parameterization match the physical size of the object. The original surface itself is not changed in any way. Using Improve or MakeSrfNonPeriodic before CreateUVCrV is no longer necessary.
720 ApplyCrV improved: The ApplyCrV command now uses the geometric bounding box of the curves instead the bounding box of the control polygon. Also, ApplyCrV now scales the curves to fill the untrimmed domain of the surface, even if the aspect ratios of the surface and the curves are different.
721 Sketch, SketchOnSrf improvements: The dynamic feedback in these commands has been changed from points to polyline. This makes the commands look more like pen drawing. Both commands now stay in the sketch mode until you press Enter (or right click or Esc). You don't have to keep the button depressed to sketch: click to start sketching, move the mouse to sketch, and click to stop sketching.
722 FilletSrf bug fixed: In the 13-Oct-1999 build, if FilletSrf was used on single surfaces, the surfaces would disappear. This has been fixed.
723 Other bug fixes: There were several crashes fixed in the NetworkSrf, DWG/DXF import, CSV export, and UnifyMeshNormals commands.

724 What's New in Beta 13-Oct-1999

725 -Shaded working mode

726 Continual shaded working mode is now available. Note: This does not use OpenGL.
727 To turn it on, Right click the Viewport Title bar, then click Shaded.
728 If objects start to look jagged after control point editing, select Refresh from the Viewport Title bar menu.
729 The light for shaded views now comes from over your left shoulder.
730 For this build, the ClearAllMeshes command turns off shaded mode so you can save the model without render meshes. When 1.1 ships, this command will be replaced by a checkbox in the Save and Save As dialog boxes.
731 Drape, SketchOnMesh, and ZBufferPt use the wireshaded display. This makes it easier to use the wireframe geometry as a visual aid.

732 -Annotation

733 Annotation text: The Text command lets you place 2-D annotation text in your model. The EditText command lets you edit 2-D annotation text.

734 Note: the command to create text objects has been renamed TextObject.
735

736 Leaders: Create leaders with the Leader command.
737

738 Angle dimensions: The DimAngle command creates a dimension between two lines.
739

740 Edit dimension text: The EditDim command lets you edit dimension text.
741

742 Still to come:

743 Save to DWG, DXF, AI, WMF
744 Import from DWG, DXF
745

746 Make2D Enhanced: The Make2D command preserves layer information when creating hidden line views. It also has a new option to project the hidden line view to the construction plane in the active viewport.
747

748 -New Commands

749 Arc from start, end, and radius: The ArcSER command creates an arc using the start point, end point, and radius.

750 Previous and next construction plane: Move to the previously used construction plane with the CPlanePrev command. Restore construction plane change with the CPlaneNext command.

751 Set names for multiple objects: The SetObjectNameMultiple command lets you set names for a set of selected objects. The names are incremented numerically.

752 Select objects by name: Select object by name with the SelName command.

753 Zoom window around 3-D target point: Set the target point to center your zooming with the ZoomTarget command. This helps get a good window zoom in perspective views.

754 New toolbars: The toolbars have been updated to include the new commands.

755 -File I/O

756 Speed improvements when saving on a network.: Saving files to the network was considerably slower than saving to a local hard drive. This has been fixed.

757 Export object properties to a spreadsheet file: Export object properties to a spreadsheet program like Microsoft Excel with the Export command. Exporting object properties to a spreadsheet file creates a comma-separated value (*CSV) text file that contains a tabulation of various object properties including layer name, layer color, object name, object render color and selected mass properties.

758 Add material name to objects: The SetObjectMaterial command assigns a rendering material. The object material can be used by RIB and OBJ file formats. Other formats will support material names in a future version.

759 -Enhancements

760 Boolean operations allow Multiple Select: You can now select multiple objects for the BooleanUnion, BooleanDifference, and BooleanIntersection commands.

761 UnrollSrf improved: The UnrollSrf command has been improved to allow unrolling of surfaces that are linear in one direction, but have degree higher than 1. Rhino used to require surfaces to be degree 1 in the linear direction to unroll properly. Unrolling cylinders and cones, as well as other degree 2 and rational surfaces is more accurate.

762 Project and Pullback support point objects: The Project and Pullback commands will now project points to a surface as well as curves.

763 Fillet, Chamfer, and Extend simplify result: The Fillet, Chamfer, and Extend commands now simplify the result if possible. This means the extended lines and arcs do not have extra knots in them.

764 FilletSrf and ChamferSrf leave polysurfaces joined: The FilletSrf and ChamferSrf commands used to extract surfaces from polysurfaces before creating the fillet or chamfer. They now leave surfaces joined to the rest of the polysurface they came from.

765 Text command changed: The Text command, which creates text-shaped curves, surfaces or solids based on TrueType fonts, has been changed to TextObject.

Change Log Poem 1

The ReduceMesh command reduces
the number of faces in a polygon mesh.
Caution:
You can reduce a mesh to so few triangles that it is useless.
One triangle
does not make a very good horse.

Rhino Perspective Match to Image PMatch

You have a perspective picture of something and an accurate 3D model. You want to set the projection in a Rhino perspective viewport so that the model lies on top of the picture. You might want to do this to validate that your model really is as accurate as you think it is. You may need to add more elements to the model to reconstruct a crash or construction scene (for the accident reconstruction bowling pin). Or you have modified your model, changed the viewport settings, or want the same rendering projection used to create a previous image ...

Step 1: Open the file with the model in it and put add perspective picture as a wallpaper image in one of the viewports.

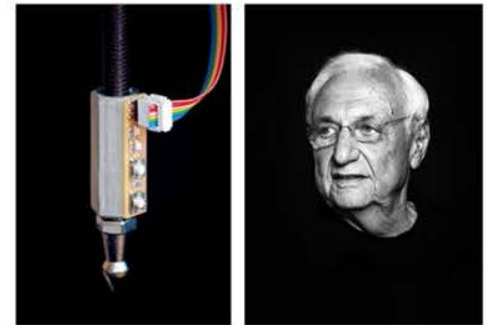
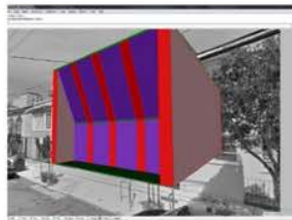
Step 2: Click in the viewport with the wallpaper image (to make it the active viewport), and run the PerspectiveMatch command.

Step 3: Carefully pick a point on the wallpaper image, then carefully pick the corresponding 3D point on the model. Keep picking pairs of image/3D points until you have at least 6 pairs.

Step 4: Press enter.

Tips and tricks

- Pick carefully. Accurate picking is rewarded with accurate results. Sloppy picking gives you garbage.
- Make the image view large. This aids in accurate image point picking.
- If possible, pick point pairs where an end or point snap can be used to select the 3D point. This aids in accurate 3D point picking.
- Pick points that are spread out in all dimensions. In the attached example, you get nice results if you pick the "corner" points. You get less accurate results if you concentrate your picking to smaller sub-regions.



An argument could be made that it was the digitizing arm that made Frank Gehry.

27'-0"



DEPARTMENT OF COMMUNICATIONS, OFFICE OF EXHIBITIONS
PIPER EXHIBITION WALL
NORTH ELEVATION

NOTE: ALL WALLS ARE 5/8" DRYWALL WITH 3/4" PLYWOOD BACKING

EXHIBITION WALLS SCALE 1/2

HARVARD GRADUATE SCHOOL OF DESIGN | 7 SUMNER ROAD | CAMBRIDGE, MASSACHUSETTS 02138 | T: 617.495.1227



...now works correctly.
...ing and small, Rhino would
...now defaults to not keep trimming curves.
Dir reversed U and V incorrectly after swapping U and V. This is now fixed.
Group and Ungroup sometimes caused Groups to save in the file. This is now fixed.
Copy and other transforms of groups created copies as members of the original group. It now creates a new group for each copy, just like Rhino 2.0.
Mesh had a bug on some trimmed surfaces. This bug fixes many meshing-related bugs.

Windows 98/ME: You should now be able to run four or five copies of Rhino 3.0 on Windows 98/ME. We fixed many places in Rhino where it was using system resources without giving them back to Windows.

Script Speedup: executing large scripts should be faster now. We found and fixed the bug that caused long scripts to get slower and slower as they executed.
File Import/Export on Windows 98/ME has been improved - several file formats (DWG, AI, CSV, WMF, etc) failed to open and save files. This has been fixed.
Trim and Split have been improved.

TextObject now works with Unicode text.
Plug-ins failed to load when a command in the plug-in was run as a scriptable command. For example, -ReduceMesh failed to load the plug-in, and therefore the command failed to run. This is now fixed.

MatchSurf failed on some trimmed surfaces. This is now fixed.

Maximized Viewports failed to remain maximized when the main Rhino window was maximized. This is now fixed.

MergeEdge failed in some cases. This is now fixed.

Menus and other windows failed to close properly when the screen was cancelled. This is now fixed.

...to prompt to save the model.

...bottom that caused the scroll bar to flicker.

...fault light.

...ash setting was changed in Document Properties dialog.

...sor instead of the cross cursor.

...fore sending.

...AD 3D Faces correctly. This is now fixed.

...ported small polylines instead of surfaces.

...ndicating successful saved.

...ne" when accessing the File menu.

...d if the "global dimension scale" in the Options dialog is set to something other than 1. This is now fixed.

...bar incorrectly disappeared when the Options dialog was closed. This is now fixed.

mcneel.com/t/overkill-type-function/3401

Overkill type function?

arail
Oct '13

...ar to Overkill in AutoCAD? Overkill in AutoCAD searches out (and deletes) duplicates (and does other simple clean up tasks like another) and deletes them and does other simple clean up tasks like

elvetosaur
Oct '13

...Rhino was way ahead of AutoCAD with functions like SelDup (for a long time) but AutoDesk have developed a few of these tools over the years... SelDup.

lucio_zadra
Nov '13

...e duplicates that seldup can't identify. I use the CurveBoolean tool to join some curves together, SelOpenCrv and SelDup to clean up the curves that lies over

Terence P...

PhD Candidate in Architecture and Science of the City
EPFL-EPHE, Media & Design Lab
Lausanne CH

Show keyboard shortcuts in the options dialog

ShowEdges will better with ShowKeyboardShortcuts. It will prompt the user if keyboard shortcuts are not visible. Keyboard shortcuts are now visible in the ShowEdges dialog box.

Don't do any work in the ShowEdges dialog box.

ShowEdges dialog box.

ShowEdges dialog box.

ShowEdges dialog box.

ShowEdges dialog box.

ShowEdges dialog box.

ShowEdges dialog box.

developable surfaces with holes and that can be unrolled onto a plane

g for manufacturing with a material or plywood.

from just any two curves, results from . Curves of similar shape without

st for designing airfoil and hydrofoil designed to be used for bending and unfolding sheet

The two new commands for creating and unrolling developable surfaces are:

Developable Loft Style: A new style for the Loft command creates surfaces that can be developed, if possible.

UnrollSrf: This new command unrolls a developable surface on to a plane. This process is also sometimes called flattening, unwrapping, unfolding, developing, or expanding a surface.

Reduce Number of Polygons in a Mesh

The ReduceMesh command reduces the number of faces in a polygon mesh. Caution: You can reduce a mesh to so few triangles that it is useless. One triangle doesn't make a very good horse.

Synchronize Views

The new SynchronizeViews command sets the scale and center of parallel viewports to match the "active" viewport. You may want to add this new command to your Zoom buttons or a function key.

Chamfer

The Chamfer command now allows you to type both chamfer distances at once separated by commas.

Fill

The Fill command has been changed so you can now build a filled closed loop between two curves in a composite curve or polyline.

Size

The Size command, when used now maintains its size between views.

Scale Factor

When using the Scale command, the scale factor becomes the vertical size ratio.

Change Log Poem 1

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Rhino 1.0
released

NEW FEATURES

Toggle the display of viewport titles with the ShowViewportTitle command.

Toggle the display of world axis icons with the ShowWorldAxes command.

Run an external program with the Run command.

Insert notes into Rhino file with the Notes command.

Capture Viewport screen image to the Windows Clipboard with ScreenCaptureToClipboard, ScreenCaptureToClipboardWithoutCursor, CopyTitledViewportToClipboard, or CopyViewportToClipboard.

Draw a rectangle from its center point with the CRectangle command.

Specify which viewport is maximized with the SetMaximizedViewport command.

Create polygon mesh surfaces from a closed polyline with the Triangulate command.

Measure the coordinate of a point with the MeasurePoint command.

Match two surfaces by position, tangency, or curvature with SrfMatch.

Evaluate UV coordinates of points on a surface with QueryUVPoint. This is a geeky command. You need some understanding of parameter space to use this command. Evaluate the U and V coordinates of points on a surface by choosing point on surface.

Evaluate the domain of a surface in parameter space with QueryDomain. This is a geeky command. You need some understanding of parameter space to use this command. Evaluate the U and V minima and maxima for curves and surfaces.

Create point on surface by specifying parameter space coordinates with SurfacePoint. This is a geeky command. You need some understanding of parameter space to use this command. This is the reverse of queryuvpoint.

Create parameter space curves with CreatePCurves. This is a geeky command. You need some understanding of parameter space to use this command. Re-parameterize curves of a surface to real space. All boundary and trimming curves are remapped to a rectangular area with the same aspect ratio of the original surface. This can be useful for matching features to certain parts of a texture map.

Create wireframe curves based on a surface or solid with ConvertToCurve. This command creates curve objects from the wireframe curves of the solid.

CHANGES

Measure the volume of a solid with Volume. The volume command no longer displays centroid information - this is done with the centroid command.

Measure the volumetric centroid of a solid with centroid. This command is separated from the volume command.

Read command file into command line with ReadCommandFile. Read a file into the command line, as you would type them into the command line, from a text file. The file is interpreted just as if it were typed into the command line: ENTER and spacebar are command delimiters.

Paste commands from Windows Clipboard. Copy a list of command inputs from the Windows Clipboard into the command line, from the Windows Clipboard. CommandPaste

Startup commands: When Rhino starts, any commands in the Startup Command file will be executed. If a file is opened by double-clicking in Explorer, the startup commands will be executed after the file is loaded.

Change the number of undo and redo levels: You can set the amount of memory Rhino uses to save undo information. The numundo command sets the number of undo levels. There will always be at least this many



Terminator 2



Jurassic Park



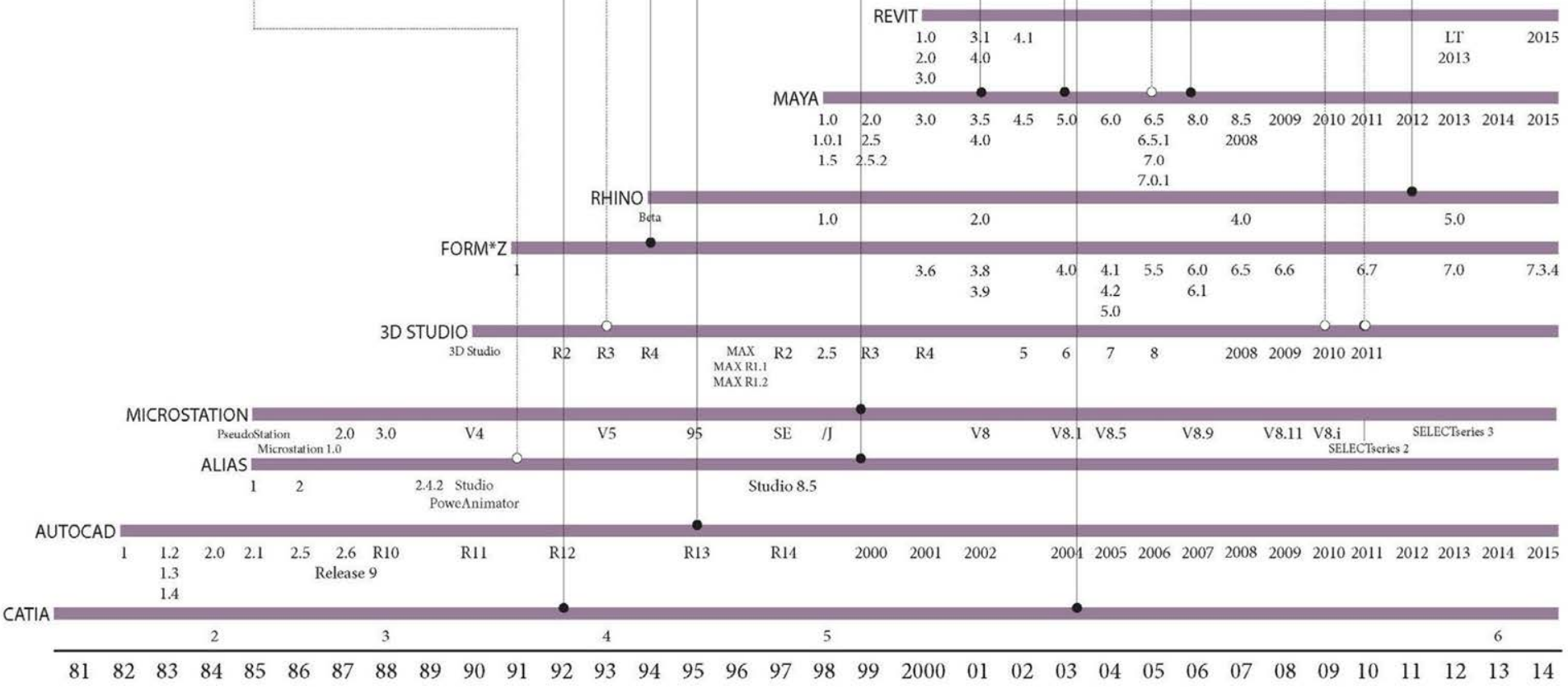
Star Wars Ep. III



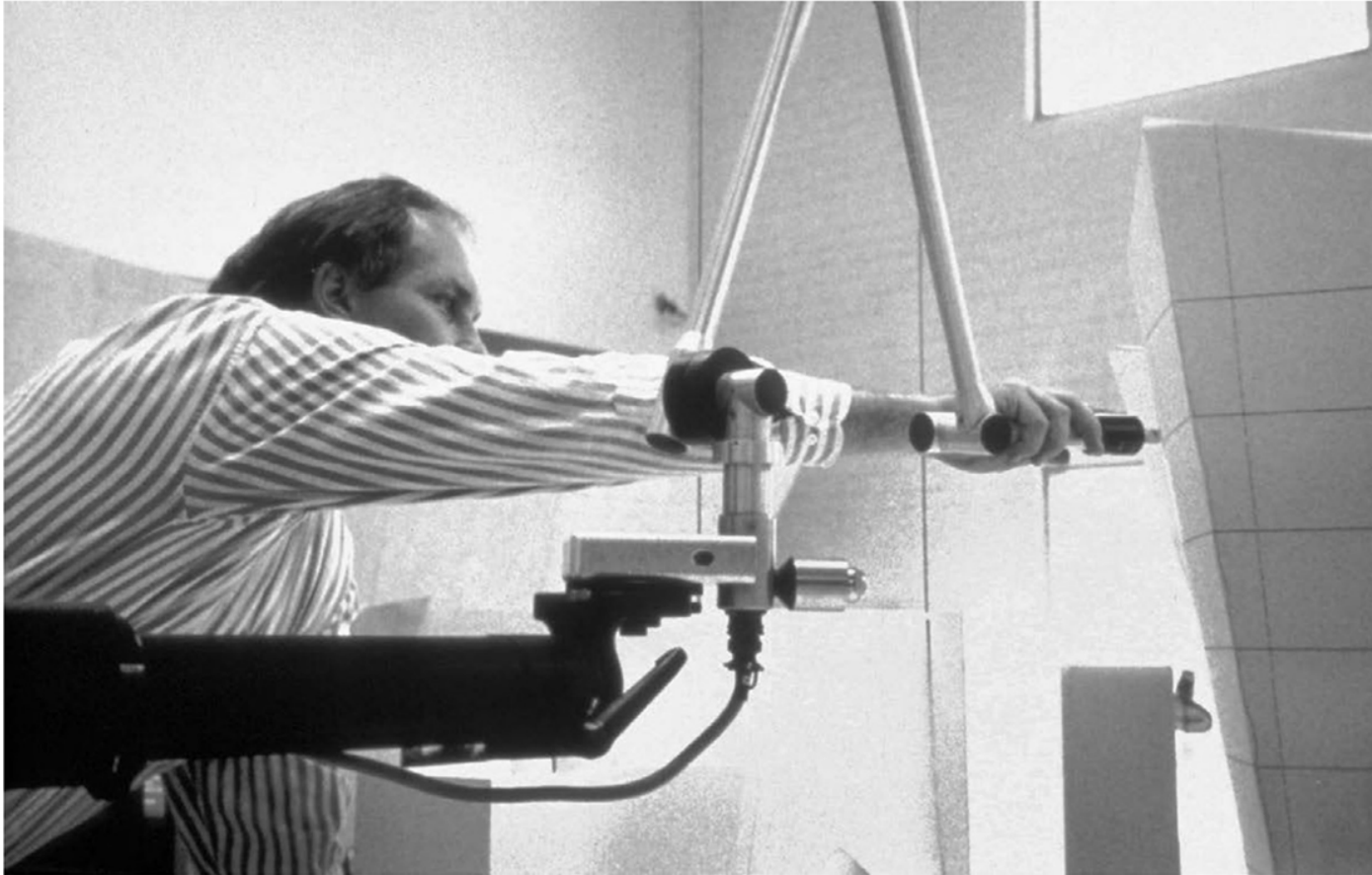
Avatar



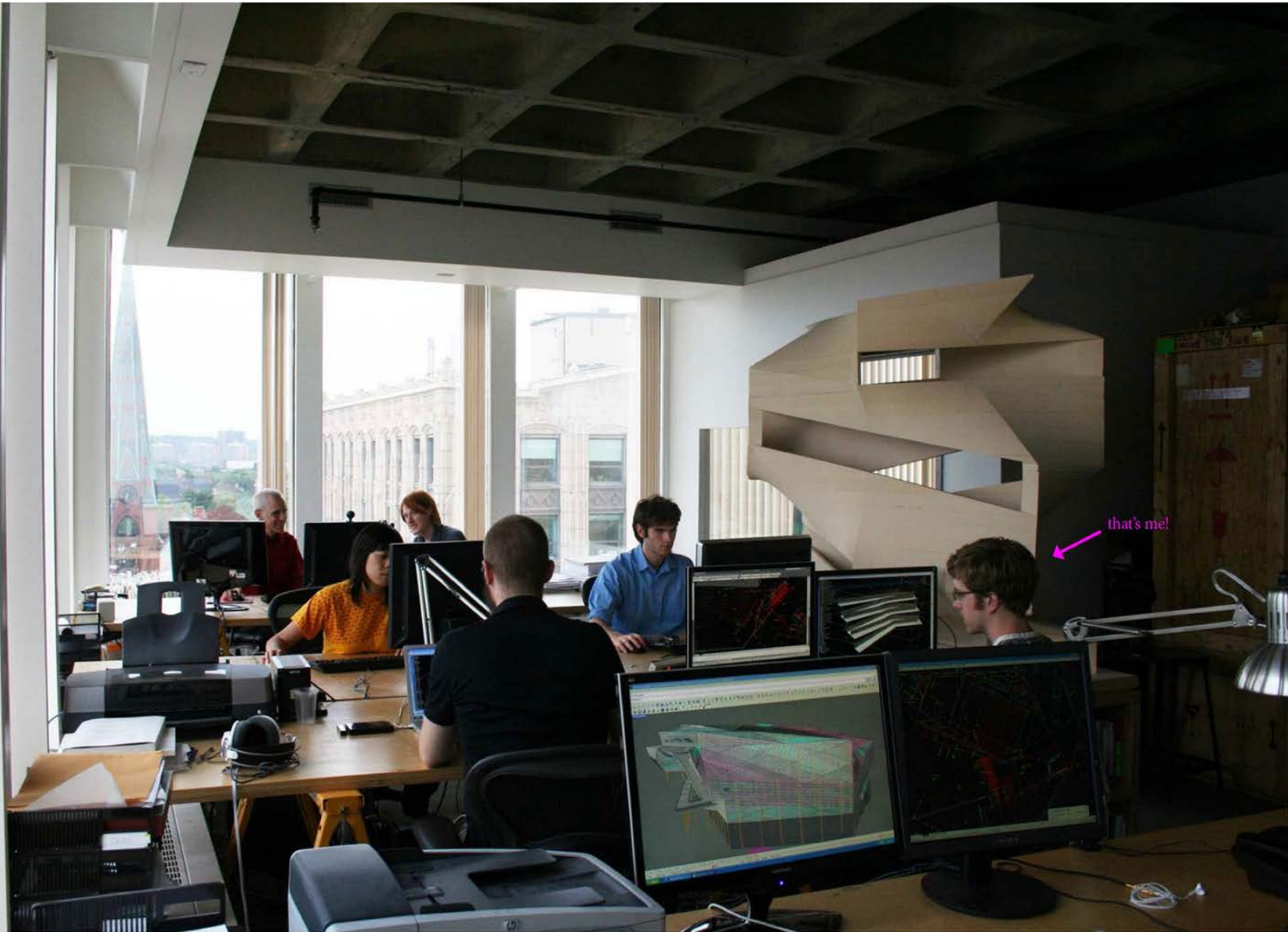
Inception



architecture software timeline



Rick Smith digitizing Frank Gehry's model of the Walt Disney Concert Hall with FaroArm, 1991 (via CCA)



Scott Cohen's office circa 2009