

How the MIT Libraries use the Semantic Web

MacKenzie Smith

Associate Director for Technology, MIT Libraries



The Simile Project

Semantic Interoperability of Metadata In unLike Environments

Problem: Data Heterogeneity

Billions of metadata creators

Everybody collects something

Thousands of metadata schemas

How can we integrate all that data to provide new library services over it?



Simple Goals

- ▶ Build tools for *discovering and navigating* digital resources on the Web
- ▶ Data architecture *scalable* to the entire Web
- ▶ *Interoperable* across systems, institutions, domains



The Simile Approach

Identify common problems

Cast a wide net and be opportunistic

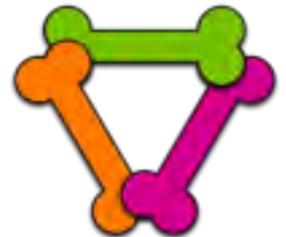
Deliver working (open source software) solutions

Get them adopted

Learn from their use

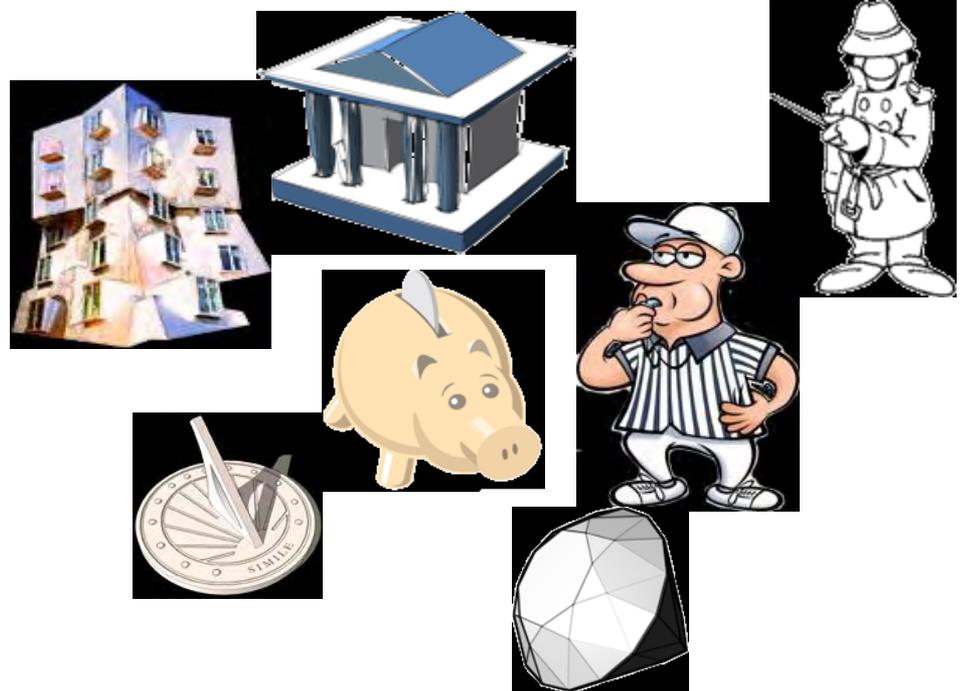
Build communities around them

Leverage RDF, Semantic Web technology



Simile Tool Chain

- ▶ Babel
- ▶ Exhibit
- ▶ Fresnel
- ▶ Gadget
- ▶ Longwell
- ▶ Piggy Bank
- ▶ RDFizers
- ▶ Referee
- ▶ Solvent
- ▶ Semantic Bank
- ▶ Timeline
- ▶ Welkin
- ▶ ...



Data Management Tools

Gadget

XML inspector to analyze large XML data files

RDFizers

tools for converting various data formats into RDF with XSLT

Solvent

Firefox screen scraper to convert HTML into RDF

Babel

Web service to convert between various formats

Banach

batch operators to transform RDF statements



Babel Data Conversion Web Service

http://simile.mit.edu/babel/

>> SIMILE >> Babel

Babel

You can use Babel to convert between various formats. [Tell us](#) what other formats you want to convert from/to.



from format

- Bibtex
- Excel
- Exhibit JSON
- Exhibit-embedding Web Page
- JPEG
- N3
- RDF/XML
- Tab-Separated Values

to format

- Exhibit JSON
- Exhibit JSONP
- N3
- RDF/XML
- RSS 1.0

data to convert

Where is the data that you want to convert?

- the data is in some **files** on my computer
- the data is on some **web sites**
- the data is **text** I can paste into this web page

Result's mime-type: default text/plain application/xml

convert files

Note: We do not store your data on our server.

LINKS

- [Documentation \(wiki\)](#)
- [Browse the Code](#)
- [Issue Tracker](#)

Note that the results for the selected output format can be previewed in a web application.

©MIT November, 2009

Banach Pre-processor generates OWL equivalences

The screenshot shows a web browser window displaying the SIMILE Longwell Art Demo. The browser's address bar shows the URL: `http://simile.mit.edu/art/default?longwell-state=%7B%22queries%22%3A%7B%22root%22%3A%5B%5B%2C%22http%3A%2F%2Fwww.w3.org%2F1999%2`. The page title is "Art SIMILE Longwell Demo".

The main content area displays a list of 5 items. The first item is "Nicholas Wilder studying Picasso, Los Angeles." by Hockney, David, created on Mar. 24, 1982. The second item is "Camera Work: No. 48 Exhibition: Picasso and Braque" by [unknown], created in 1916. The third item is "Madame Tussaud's Wax Museum: Pablo Picasso" by [unknown].

The right sidebar contains a "Text Search" section with the search term "picasso". Below it are "Attribute Filters" for "Source" and "creator". The "Source" filter shows 14 items from JSTOR, 8 from MIT OpenCourseWare, and 5 from ARTstor. The "creator" filter shows 3 missing, 1 from Lichtenstein, Roy, 1923-, and 1 from Hockney, David.

At the bottom of the browser window, the status bar shows "Done" and "zotero" and "Adblock" icons.

Data Browsing Tools

Longwell

web-based, configurable faceted browser for RDF data

Seek

Faceted browsing in Mozilla Thunderbird for email browsing

Timeline

AJAX widget for visualizing time-based events

Exhibit

data publishing framework for indexing, visualizing JSON/RDF data



Longwell

SIMILE Longwell | Art Demo - Mozilla Firefox

File Edit View History Bookmarks Tools Help

SIMILE Longwell | Art Demo

Art
A SIMILE Longwell Demo

Add View | Start New Search

4 items. Sort by contains ascending

1. **Weeks Bridge, Cambridge, MA, United States** [Complete](#) [Summary](#)

by McKim, Mead & White

Source Harvard VIA

bridge spanning the Charles



2. **Robinson Hall, Harvard University, Cambridge, Massachusetts, United States** [Complete](#) [Summary](#)

by McKim, Charles Follen White, Stanford Mead, William Rutherford McKim, Mead & White

Source Harvard VIA

doorway



Text Search
Cambridge

Attribute Filters

Source
 Harvard VIA

Creator
 (missing)
 Kozloff, Joyce, 1942-
 Shepley, Rutan and Coolidge
 McKim, Mead & White
 Ware and Van Brunt
 Coolidge, Shepley, Bulfinch & Abbott
 Richardson, Henry Hobson
 Olmsted, Frederick Law
 French, Daniel Chester
 Peabody, Charles

begin date
copyright
culture
end date
style
topic
work type

Simile

MIT Libraries

A SIMILE Demo

1 filter criterion

- Text Search: "abelson" (remove)

33 items

« previous 1 2 3 4 next »

Software Engineering for Web Applications, Fall 2003



DESCRIPTION

Computation over unreliable and anonymous protocols such as the World Wide Web. Problems of persistence, concurrency control, transactions, and transactions across multiple servers. The relational database management system as a tool for attacking these problems. Students work in small mentored teams on diverse projects. From the course home page: Course Description 6.171 is a course for students who already have some programming and software engineering experience. The goal is to give students some experience in dealing with those challenges that are unique to Internet applications, such as: concurrency; unpredictable load; security risks; opportunity for wide-area distributed computing; creating a reliable and stateful user experience on top of unreliable connections and stateless protocols; extreme requirements and absurd development schedules; requirements that change mid-way through a project, sometimes because of experience gained from testing with users; user demands for a multi-modal interface.

SUBJECT AND KEYWORDS

- | | | | |
|---|---------------------------------------|---|---------------------------------|
| Internet | software engineering | Web | concurrency |
| load | security risks | wide-area distributed computing | Web services |
| usability | development schedules | multi-modal interface | user experience |
| online learning community | | | WAP |

instructional designer:
[Greenspun, Philip](#)

Contributor:
[Abelson, Harold](#)
[Greenspun, Philip](#)

Level:
[Undergraduate](#)

Location:
[\[external link\]](#)

Type here to search

type

- Type here to filter
- Publication (28)
 - Course (2)
 - Entity (1)
 - FacultyMember (1)
 - Person (1)
 - Text (1)

Resource Type

- Type here to filter
- "Thesis" (11)

Publisher

- Type here to filter
- "Massachusetts Institute of Technology" (11)

Contributor

- Type here to filter
- "Massachusetts Institute of Technology. Dept. of Electrical Engineering and Computer Science." (7)
 - "Harold Abelson." (4)
 - "Massachusetts Institute of Technology. Dept. of Electrical Engineering and Computer Science" (4)
 - "Hal Abelson." (2)
 - "Daniel Weitzner" (1)

Subject and Keywords

Ethics and Law on the Electronic Frontier, Spring 2002



DESCRIPTION

The interaction between law, policy, and technology as they relate to the evolving controversies over control of the Internet. Topics include: intellectual property and

instructional designer:
[Abelson, Harold](#)

Contributor:
[Jonathan Zittrain](#)

Level:

Student Science Training Program in Mathematics, Physics and Computer Science



Description

During the summer of 1976, the Massachusetts Institute of Technology Artificial Intelligence Laboratory sponsored a Student Science Training Program in Mathematics, Physics and Computer Science for high ability secondary school students. This report describes, in some detail, the style of the program, the curriculum and the projects the students undertook.

- Resource**
[external link](#)
- Creator**
[Abelson, Harold](#)
[diSessa, Andy](#)
- Date**
[1976-09-01](#)
[2004-10-04T14:47:51Z](#)

- Formalax (click to expand)
- Date (click to expand)
- Label (click to expand)
- Title (click to expand)
- Note (click to expand)
- Creator (click to expand)
- Resource Identifier (click to expand)
- Language (click to expand)
- Title (click to expand)
- Rights Management (click to expand)
- Issued (click to expand)
- Physical Description (click to expand)
- Issuance (click to expand)
- Relation (click to expand)
- Part of Series (click to expand)
- code (click to expand)
- Location (click to expand)

Cellular computation and communications using engineered genetic regulatory networks



Description

Ph.D.

Thesis (Ph. D.)--Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science, 2001.

Includes bibliographical references (p. 130-138).

In this thesis, I present an engineering discipline for obtaining complex, predictable, and reliable cell behaviors by embedding biochemical logic circuits and programmed intercellular communications into cells. To accomplish this goal, I provide a well-characterized component library, a biocircuit design methodology, and software design tools. I have built and characterized an initial cellular gate library with biochemical gates that implement the NOT, IMPLIES, and AND logic functions in E. coli cells. The logic gates perform computation using DNA-binding proteins, small molecules that interact with these proteins, and segments of DNA that regulate the expression of the proteins. I introduce genetic process engineering, a methodology for modifying the DNA encoding of existing genetic elements to achieve the desired input/output behavior for constructing reliable circuits of significant complexity. I demonstrate the feasibility of digital computation in cells by building several operational in-vivo digital logic circuits, each composed of three gates that have been optimized by genetic process engineering.

(cont.) I also demonstrate engineered intercellular communications with programmed enzymatic activity and chemical diffusions to carry messages, using DNA from the *Vibrio fischeri* lux operon. The programmed communications is essential for obtaining coordinated behavior from cell aggregates. In addition to the above experimental contributions, I have developed BioSPICE, a prototype software tool for biocircuit design. It supports both static and dynamic simulations and analysis of single cell environments and small cell aggregates. Finally, I present the Microbial Colony Language (MCL), a model for programming cell aggregates. The language is expressive enough for interacting applications, yet relies on simple primitives that can be

- Resource**
[external link](#)
- Creator**
[Weiss, Ron, 1970-](#)
- Contributor:**
[Massachusetts Institute of Technology, Dept. of Electrical Engineering and Computer Science.](#)
[Thomas F. Knight, Jr., Gerald Jay Sussman and Harold Abelson.](#)
- Date**
[2001](#)
[2005-08-23T18:27:43Z](#)
- Subject and Keywords**
[Electrical Engineering and Computer Science.](#)
- Resource Type**
[Thesis](#)
- Publisher**

Exhibit

E. coli genotypes/Exhibit - OpenWetWare - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://openwetware.org/wiki/E._coli_genotypes/Exhibit

Information collected from DSpace at ... E. coli genotypes/Exhibit - Open...

Log in / create account

article discussion edit history

E. coli genotypes/Exhibit

< E. coli genotypes

11 items total Copy All

sorted by: labels; then by ... grouped as sorted show duplicates

- AG1 (link)** Copy

label: AG1
type: Item
URI: http://openwetware.org/wiki/E._coli_genotypes/Exhibit/item#AG1
purpose: cloning
resistance: nalidixic acid
requires: thiamine
genotype: endA1, recA1, gyrA96, thi-1, relA1, glnV44, hsdR17(rK- mK+)
- BL21(DE3) (link)** Copy

label: BL21(DE3)
type: Item
URI: [http://openwetware.org/wiki/E._coli_genotypes/Exhibit/item#BL21\(DE3\)](http://openwetware.org/wiki/E._coli_genotypes/Exhibit/item#BL21(DE3))
purpose: protein expression
genotype: F-, ompT, gal, dcm, lon, hsdSB(rB- mB-), lacIq, lambda, lacUV5-T7 gene 1, ind1, sam7, nin5
inducible: T7 RNA polymerase
lambda: prophage
parent: B834
- BL21(DE3) pLysS (link)** Copy

label: BL21(DE3) pLysS
type: Item
URI: [http://openwetware.org/wiki/E._coli_genotypes/Exhibit/item#BL21\(DE3\)%20pLysS](http://openwetware.org/wiki/E._coli_genotypes/Exhibit/item#BL21(DE3)%20pLysS)
purpose: protein expression
resistance: chloramphenicol
genotype: F-, ompT, gal, dcm, lon, hsdSB(rB- mB-), lacIq, lambda, lacUV5-T7 gene 1, ind1, sam7, nin5, pLysS(cmR)
inducible: T7 RNA polymerase
lambda: prophage
parent: BL21(DE3)
description: The pLysS plasmid (with chloramphenicol resistance) encodes T7 phage lysozyme, an inhibitor for T7 polymerase which reduces and almost eliminates expression from transformed T7 promoter containing plasmids when not induced.

purpose

- cDNA libraries
- cloning
- general purpose
- propagating plasmids with ccdB
- protein expression

resistance

- chloramphenicol
- kanamycin
- nalidixic acid
- streptomycin
- tetracycline

requires

- leucine
- thiamine
- threonine

genotype

- ara14
- D(araD-araE)567
- D(lacA-lacZ)514(::kan)
- D(lacZYA-argF)U169
- D(leu)
- D(hsdR-phoB)558

Done

zotero AdBlock



DATA

ANALYSIS

PROJECTIONS

Global, Continent, and National Maps for 63 Countries

Search

Indicator

- 5 Educational Attainment
- 2 Gross Attendance Rate
- 2 Net Attendance Rate

School Level

- 1 No Schooling
- 2 Primary
- 1 Primary Complete +
- 1 Primary Incomplete +
- 2 Secondary
- 1 Secondary Complete +
- 1 Secondary Incomplete +

Clicking on a map will take you to a larger image suitable for downloading.

9 Maps filtered from 504 originally ([Reset All Filters](#))

sorted by: labels; then by... • grouped as sorted

Bolivia Educational Attainment (No Schooling)



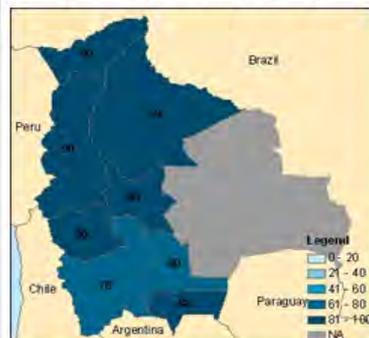
Indicator: Educational Attainment
School level: No Schooling
Continent: South America
Source: DHS Dataset
Year: 2003

Bolivia Educational Attainment (Primary Complete +)



Indicator: Educational Attainment
School level: Primary Complete +
Continent: South America
Source: DHS Dataset
Year: 2003

Bolivia Educational Attainment (Primary Incomplete +)



Indicator: Educational Attainment

Bolivia Educational Attainment (Secondary Complete +)



Indicator: Educational Attainment

Level

- 9 national

Continent

- 9 South America

Country

- 1 Afghanistan
- 9 Angola
- 9 Armenia
- 9 Bangladesh
- 8 Belize
- 4 Bhutan
- 9 **Bolivia**
- 4 Brazil
- 9 Burkina Faso
- 9 Burundi
- 9 Cameroon
- 9 Central African Republic
- 4 Chile

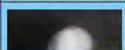
Important 6th Grade SOL Figures

This is more than a web page. This is an interactive site that allows you to manipulate and sort the data with just a click or two. If you'd like to see an example of the page in use [click here](#).

[TABLE](#) • [DETAILS](#) • [PHOTOS](#) • [BIRTH PLACES](#) • [SITES OF DEMISE](#) • [LIVES](#)

19 People total

Copy All

NAME	PICTURE	ROLE	ERA	BIRTH	DEATH	FACTS	SOL
John Cabot		Explorer	Exploration	1450-01-01	1499-05-22	John Cabot explored eastern Canada.	USI.4a
Francisco Coronado		Explorer	Exploration	1510-01-01	1554-01-01	Francisco Coronado claimed the southwest United States for Spain	USI.4a
Samuel de Champlain		Explorer	Exploration	1567-01-01	1635-12-25	Champlain established the French settlement of Quebec.	USI.4a
John Locke		Philosopher	Revolutionary War	1632-07-29	1704-10-28	Locke was an English philosopher who believed that people had inherent rights to life, liberty and property. His beliefs that the government was created to protect the rights of the people became one of the founding principals of the Declaration of Independence.	USI.6b
Robert La Salle		Explorer	Exploration	1643-11-22	1687-03-19	Robert La Salle claimed the Mississippi River Valley for France.	USI.4a
Benjamin Franklin		Politician	Revolutionary War	1706-01-17	1790-04-17	Benjamin Franklin was a prominent member of the Continental Congress and helped frame the Declaration of Independence.	USI.6c

- ROLE**
- 4 ✓ Explorer
 - 1 ✓ Journalist
 - 1 ✓ Patriot
 - 1 ✓ Philosopher
 - 1 ✓ Poet
 - 2 ✓ Politician
 - 6 ✓ President

- ERA**
- 2 ✓ Civil War
 - 5 ✓ Colonial
 - 4 ✓ Exploration
 - 2 ✓ New Nation
 - 6 ✓ Revolutionary War





Elliott and Elliott: Biochemistry and Molecular Biology 4e

Select molecules using the following filters and click on the molecule legend to access a 3-D interactive model

[Help](#)Quick Search:

Chapter	Page	Figure	Title
2 1	8	1.5	1 Bacterial porin
7 4	11	1.7	1 B-DNA
1 6	53	4.7	1 DNA sliding clamp
3 7	54	4.9	1 EF-G in complex with GDP

18 items



[Bacterial porin](#): A transmembrane protein exhibiting a β -barrel structure, containing 16 antiparallel β sheets linked together by loops and short α -helices.



[B-DNA](#): A short section of a B-DNA molecule, showing the major and minor grooves.



[Potassium channel, showing two subunits](#): Two of the four subunits which make up the transmembrane potassium channel. The potassium ions are coloured green showing their positions as they pass through the channel.



[Potassium channel](#): A transmembrane structure, comprising four subunits. The potassium ions are coloured green showing their positions as they pass through the channel.



[F₁ subunit of the *E. coli* ATP synthase](#): A transmembrane structure, primarily comprising α and β subunits and a stalk which includes the γ and ϵ subunits.



[DNA sliding clamp](#): Monomer of the yeast protein that confers processivity on DNA polymerase which contains an antiparallel β -sheet backbone and α -helices which



[EF-G in complex with GDP](#): Catalyses the ribosomal translocation of peptidyl-tRNA from the A site to the P site.



[Yeast transfer RNA^{phe}](#): Space-filling model of the tRNA specific for phenylalanine. It carries the activated amino acid to the ribosome.



FACADE Project

Future-proofing Architectural Computer-Aided Design

FACADE Goals

- ▶ **Solve loss of digital architectural data**
 - ▶ Architectural firms, libraries, museums, archives face challenges
 - ▶ Especially 3D CAD models and Building Information Models

- ▶ **Demonstrate in DSpace digital archive, SIMILE tools**
 - ▶ Applications for teaching, research, data reuse



Architectural Data

- ▶ **Frank Gehry, MIT Stata Center**
 - ▶ Cambridge, Mass. (2004)
 - ▶ CATIA v4, v5

- ▶ **Moshe Safdie, U.S. Institute of Peace**
 - ▶ Washington, D.C. (2009)
 - ▶ Autodesk Revit

- ▶ **Morphosis (Thom Mayne), Caltrans**
 - ▶ Los Angeles, Calif. (2004)
 - ▶ Bentley Microstation



Architectural Data

- ▶ 10Ks of files
- ▶ 10s of Gbs
- ▶ 100+ file formats

Stored in file systems

Almost no metadata



Massachusetts Institute of Technology
Frank O. Gehry and Associates
CANNON
Beacon Skanska Construction Company

REQUEST FOR INFORMATION

REF CODE:

This RFI form is prepared by the Contractor to request Interpretations or clarifications of the intent of the Contract Documents, or to notify the architect of potential conflicts within Contract Documents or between the Documents and field conditions

AREA REF:

RFI #: 7 REV #:

RFI DATE: 12/08/2000

DRAWING A2-1.1



1, stair, stair # 50, stair # 52, elevator 9

Substitute 10# 10's for the 5 #1's that get interrupted by the raker. No. 14's can not be spliced. There are additional top bars at the shearhead.

110E 18" x 24" x 20" SHEARHEAD REWF

This bulkhead is located so as to miss the shearhead

REDUCE BLOCKOUT SIZE AS SHOWN

FIRST BLOCK-OUT W/SHEARHEAD REINFORCING SHOWN

```

70 Electronic Transmittal-
71 Volume in drive F is acad-
72 Volume Serial Number is 01AF-0203-
73 Directory of F:\9801\transfer\out\01060401-jama-
74 06/04/01 09:29a <DIR>
75 06/04/01 09:27a <DIR>
76
77 883 etransmt.txt
78 82,433 s2_3-1-2b.dwg
79 100,329 s2_3-1-2t.dwg
80 341,764 s4_13.dwg
81 339,014 x_2bot.dwg
82 63,655 x_2t_pts.dwg
83 36,641 x8998.dwg
84 29,590 xfp_ml.dwg
85 520,153 xfp02.dwg
86 152,113 xfp02.dwg
87 974,465 xsp_02.dwg
88 13 File(s) 2,641,040 bytes
524,288 bytes free
    
```

		E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
ISSUE DATES																					
S.I. 201	11.12.0																				
S.I. 196	9.17.02																				
S.I. 176	9.17.02																				
S.I. 175	8.13.02																				
S.I. 122																					
S.I. 89 & Issue #10																					
Addendum 1	3.18.02																				
Structure Refresh	3.15.02																				
Issue #10	01.21.02																				
S.I. 41	01.21.02																				
PR 12	12.19.01																				
S.I. 41	12.05.01																				
S.I. 37	10.25.01																				
S.I. 24	10.16.01																				
Addendum #3																					
(To Issue #8)	08.27.01																				
S.I. 18	01.8.21																				
Addendum #2																					
(To Issue #5)	07.30.01																				
Addendum #1																					
(To Issue #6)	07-02-01																				
Issue 6 Shell																					
(Core/Part 1-4)																					
Construction & Permit																					
Set - 04-30-01																					
Issue #8																					
Shell & Core (Part 4)																					
For construction																					
ISSUE#6: 1 Construction																					
Set - Part 2 03-05-01																					

Every File gets *Five Tags*

- ▶ **Project Phase** (*when*)
concept, design, construction, etc.
- ▶ **Building Zone** (*where*)
Stata Center, Gates Tower, 4th floor
- ▶ **Architectural Discipline** (*why*)
architectural, electrical, mechanical, structural
- ▶ **Document Type** (*what*)
presentation, drawing, communication
- ▶ **File Format** (*how*)
CATIA, AutoCAD, Word, PDF

Important files further tagged

Hand-selected Design Objects

- ▶ 3D models and 2D drawing sets
- ▶ Client presentations, etc.

Collected into a project “Exhibit”



Curator's Workbench

FACADE CWB 0.3.4 Project: User: wreilly Download PIM as: w/Prov.

Project Files & Dirs **Controlled Vocabularies**

Choose CV ->	Choose Entry ->	Command ->	Edit Properties
<ul style="list-style-type: none">FormatDocument TypeZonePhaseArch Disc.Rights	<ul style="list-style-type: none">Construction DocumentsDesign DevelopmentSchematic DesignUnknownDoes Not Apply	<input type="button" value="Edit"/> <input type="button" value="Add Top-Level"/> <input type="button" value="Add Under"/> <input type="button" value="Delete"/>	<p>Command: Editing Design Development</p> <p>Label: <input type="text" value="Design Development"/></p> <p>Description: <input type="text"/></p> <p>Order (optional): <input type="text"/></p> <p>Related URI (optional): <input type="text"/></p> <p><input type="button" value="Clear!"/> <input type="button" value="Accept!"/></p>

--status messages--



Curator's Workbench

FACADE CWB 0.3.4 Project: User: wreilly Download PIM as: w/Prov.

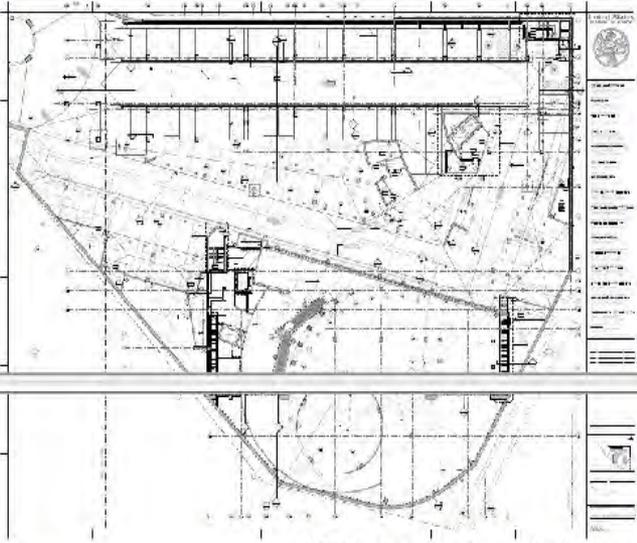
Project Files & Dirs

Select Directory:

Select Files (showing 136 of 136):

name	flgs	created	size	Format	Document Type	Zone	Phase	Arch Disc.	Rights
0000a.pdf	III..	06/29/07	6 Mb	Portable..Drawing	USIP	Construction..Architecture			
0000b.pdf	III..	06/29/07	6 Mb	Portable..Drawing	USIP	Construction..Architecture			
0001..pdf	III..	07/02/07	96 Kb	Portable..Drawing	USIP	Construction..Architecture			
a0002.pdf	III..	06/29/07	108..	Portable..Drawing	USIP	Construction..Architecture			
a0003.pdf	III..	06/29/07	951..	Portable..Drawing	USIP	Construction..Architecture			
a0004.pdf	III..	06/29/07	1 Mh	Portable..Drawing	USIP	Construction..Architecture			
a1001.pdf					SIP	Construction..Architecture			
a1101.pdf					SIP	Construction..Architecture			
a1102.pdf					SIP	Construction..Architecture			
a1103.pdf					SIP	Construction..Architecture			
a2003.pdf					SIP	Construction..Architecture			
a2004.pdf					SIP	Construction..Architecture			
a2005.pdf					SIP	Construction..Architecture			
a2006.pdf					SIP	Construction..Architecture			
a2011.pdf					SIP	Construction..Architecture			
a2012.pdf					SIP	Construction..Architecture			
a2021.pdf					SIP	Construction..Architecture			
a2022.pdf					SIP	Construction..Architecture			
a2031.pdf					SIP	Construction..Architecture			
a2041.pdf					SIP	Construction..Architecture			
a2051.pdf					SIP	Construction..Architecture			

Preview: Preview of a2005.pdf



On Selected Files: Construction Documents/Drawings/80% CD/A

--status messages--

[Click here or on Image to dismiss.](#)

Curator's Workbench

FACADE CWB 0.3.4 Project: Full USIP User: wreilly Save! Revert! Download PIM as: N3 w/Prov.

Project Files & Dirs Controlled Vocabularies

Select Directory: all + all - Select Files (showing 136 of 136): Select All Clear Invert Selection Fill

name	flgs	created	size	Format	Document Type	Zone	Phase	Arch Disc.	Rights
0000a.pdf	III..	06/29/07	6 Mb	Portable..	Drawing	USIP	Construction..	Architecture	
0000b.pdf	III..	06/29/07	6 Mb	Portable..	Drawing	USIP	Construction..	Architecture	
0001.pdf	III..	07/02/07	96 Kb	Portable..	Drawing	USIP	Construction..	Architecture	
a0002.pdf	III..	06/29/07	108..	Portable..	Drawing	USIP	Construction..	Architecture	
a0003.pdf	III..	06/29/07	951..	Portable..	Drawing	USIP	Construction..	Architecture	
a0004.pdf	III..	06/29/07	1 Mb	Portable..	Drawing	USIP	Construction..	Architecture	
a1001.pdf	III..	07/03/07	3 Mb	Portable..	Drawing	USIP	Construction..	Architecture	
a1101.pdf	III..	06/29/07	108..	Portable..	Drawing	USIP	Construction..	Architecture	
a1102.pdf	III..	06/29/07	108..	Portable..	Drawing	USIP	Construction..	Architecture	
a1103.pdf	III..	06/29/07	108..	Portable..	Drawing	USIP	Construction..	Architecture	
a2003.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2004.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2005.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2006.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2011.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2012.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2021.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2022.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2031.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2041.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	
a2051.pdf	III..	06/29/07	108..	Portable..	Drawing	SIP	Construction..	Architecture	

Setting Arch Disc.
Area of technical specialty to which this resource belongs.

---DELETE VALUE---

- Architecture
- Audiovisual
- Audiovisual
- Civil
- Civil
- Electrical
- Food Service

Accept Cancel

On Selected Files: Set Format Set Document Type Set Zone Set Phase Set Arch Disc. Set Rights Create Selected Object!

Current Directory: Construction Documents/Drawings/80% CD/Architecture/pdf

--status messages--

FACADE Web User Interface

FACADE PROJECTS

ITEMS • MAP • TIMELINE • CAROUSEL



Disney Concert Hall
Gehry Partners, LLP



The U.S. Institute of Peace
Headquarters
Moshe Safdie and
Associates



Ray and Maria Stata Center
Gehry Partners, LLP



The Peabody
Moshe Safdie

Search

Is Built?

- false (3)
- true (6)

Extent

- 1,050,000 sq. ft. (1)
- 111,000 square feet (1)
- 150,000 square feet (1)
- 18,000 sq. ft. (1)
- 200,000 sq. ft. (1)
- 258,333 sq. ft. (1)
- 6,000,000 square feet (1)
- 605,000 sq. ft. (1)
- 720,000 sq. ft. (1)

Creator

- Gehry Partners, LLP (3)
- Morphosis (3)
- Moshe Safdie and Associates (3)

Context

- Government Campus (1)
- Small town (1)
- Urban (4)
- Urban University Campus (2)
- Urban Waterfront (1)

Climate

- Dry-Summer Subtropical Zone (2)
- Humid Continental (2)
- Humid Subtropical (2)
- Mediterranean (1)
- Oceanic (1)
- Tropical rainforest (1)

Construction System

- Custom perforated stainless steel panels attached to a tube steel frame bolted to concrete building frame. (1)
- Poured-in-place concrete, custom steel frame, hand-set brick, custom

©MIT November, 2009



[Tiles](#) • [Table](#) • [Timeline](#)

5 File filtered from 55 originally ([Reset All Filters](#))

sorted by: [labels](#); then by... • grouped as sorted



[Source Path](#) [site model images/enhanced final images/axon1.jpg](#)

[Architectural Discipline](#) [Architecture](#)

[Zone](#) [Caltrans](#)

[Phase](#) [Competition](#)

[Doc Type](#) [Model](#)

[Format](#) [JPEG File Interchange Format 1.02](#)

[Extension](#) [jpg](#)

[File Size](#) [193405](#)

[Original Directory Location](#) [enhanced final images](#)

[Created](#) [2001-11-06T04:48:38](#)



[Source Path](#) [site model images/enhanced final images/axon2.jpg](#)

[Architectural Discipline](#) [Architecture](#)

[Zone](#) [Caltrans](#)

[Phase](#) [Competition](#)

[Doc Type](#) [Model](#)

[Format](#) [JPEG File Interchange Format 1.02](#)

[Extension](#) [jpg](#)

[File Size](#) [178675](#)

[Original Directory Location](#) [enhanced final images](#)

[Created](#) [2001-11-06T04:46:16](#)



Search

Type

5 [File](#)

Original Location

- 1 [02-08-06](#)
- 4 [enhanced final images](#)

Format

1

- 19 [\(missing this part\)](#)
- 3 [ASCII Text](#)
- 4 [AutoDesSys Form.Z model](#)
- 3 [Initial Graphics Exchange Standard](#)
- 5 [JPEG File Interchange Format 1.02](#)

Extension

5 [jpg](#)

References



Organized Via



USIP PROJECT FILES

CAROUSEL · ITEMS · **TIMELINE**

15 DesignObject filtered from 19 originally (Reset All Filters)



DesignObject

Search

Type

ProjectObject (15)

References

United States Institute of Peace (15)

Organized Via

Drawing Sheet Master Index (100% DD) (2)

Drawing Sheet Master Index (80% CD) (11)
(others) (2)

File Type

Image (13)
Image, 3D (2)

File Format

Adobe PDF (14)
AutoCAD DWG (13)
AutoCAD DXF (15)
IFC (2)
Rwif (2)

Creator

Moshe Safdie & Associates (15)

Phase

Construction Documents (9)
Design Development (6)

Number of Files

0 - 5 (15)

Contains Format Category

Geometry (15)
Original (15)
Presentation (15)
Standard (2)

Has File Derived By

AutoCAD (15)

Discipline

Architectural (5)
Electrical (4)
Mechanical (2)
Structural (4)

Recipient

United States Institute of Peace (15)

FACADE PROJECTS

ITEMS · MAP · TIMELINE · CAROUSEL

3 Projects filtered from 9 originally (Reset All Filters)



Search

Is Built? true (3)

Extent 200,000 sq. ft. (1) 258,333 sq. ft. (1) 720,000 sq. ft. (1)

Creator Gehry Partners, LLP (3) Morphosis (3) Moshe Safdie and Associates (3)

Context Urban (2) Urban University Campus (1)

Climate Dry-Summer Subtropical Zone (1) Humid Continental (1) Oceanic (1)

Construction System Poured-in-place concrete, custom steel frame, hand-set brick, custom metal cladding, glass curtainwall and aluminum framing. (1) Stainless steel panels on steel frame (1) Titanium panels on steel frame. (1)

Architectural Style Deconstructivist (1) Expressionist (2)

Contributor Beacon Skanska Inc. (1) M.A. Mortenson (1) URSSA (1)

Building Type Art Museum (1) Engineering Research Facility (1) Fitness and Training Facility (1) Indoor Swimming Pool (1) Performing Arts Facility (1) University (1)

Cost \$100,000,000 (1) \$274,000,000 (1) \$283,500,000 (1)

Building Features A free sculpture of curvaceous metal-clad forms. (1) Drunken Robots. (1) High-tech acoustic spaces. (1)

Location Bilbao, Spain (1) Cambridge, MA, U.S.A. (1) Los Angeles, CA, U.S.A. (1)

Date 1997 (1) 2003 (1) 2004 (1)

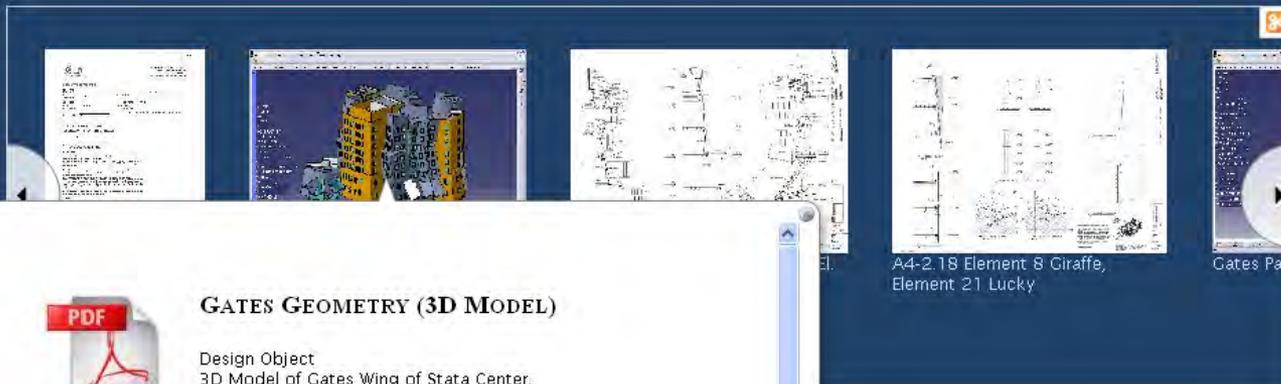
References



Organized Via



STATA PROJECT FILES

[CAROUSEL](#) · [ITEMS](#) · [TIMELINE](#)A4-2.18 Element 8 Ciraffe,
Element 21 Lucky

Gates Pat

**GATES GEOMETRY (3D MODEL)**Design Object
3D Model of Gates Wing of Stata Center.Discipline: Architectural
Creator: Gehry Partners, LLP.
Phase: Construction
Date: 2002-12-03Referenced
by:Organized
Via:[4 file\(s\)](#)

Search

Type

Organization (2) ▶
ProjectObject (9) ▶

References

Gates Geometry 3D Model (1)
Gates Pattern 3D Model (1)
MIT Stata Center (2) ▶
RFI 1244 (1)
(others) (4)

Organized Via

Catia Master Model Issue List (2)
Stata Center Drawing Sheet Master
Index (2)
(others) (7)

File Type

Image (2)
Image, 3D (2)
Other (2)
Presentation (2)
Text (3)

File Format

Adobe PDF (5)
AutoCAD DWG (2)
AutoCAD DXF (2)
AVI Video (1)
CATIA 4 Model (3)
ICES (2)
JPEG (1)
Microsoft Excel (3)
Microsoft Powerpoint (1)
STEP (2)
Text (1)

Creator

Beacon Skanska (1)
Bonet, Frances (1)
Gehry Partners, LLP. (9)

Phase

Construction (8)
Design Development (1)
Issue #8 Construction/Permit Set (4)

Number of Files

0 - 5 (10)
5 - 10 (1)

Contains Format Category

Autodesk AutoCAD (4)
Geometry (3)
Original (7)
Presentation (4)
Standard (2)

Has File Derived By

AutoCAD (1) (2)
AutoCAD (2)
CATIA.v5 (2)

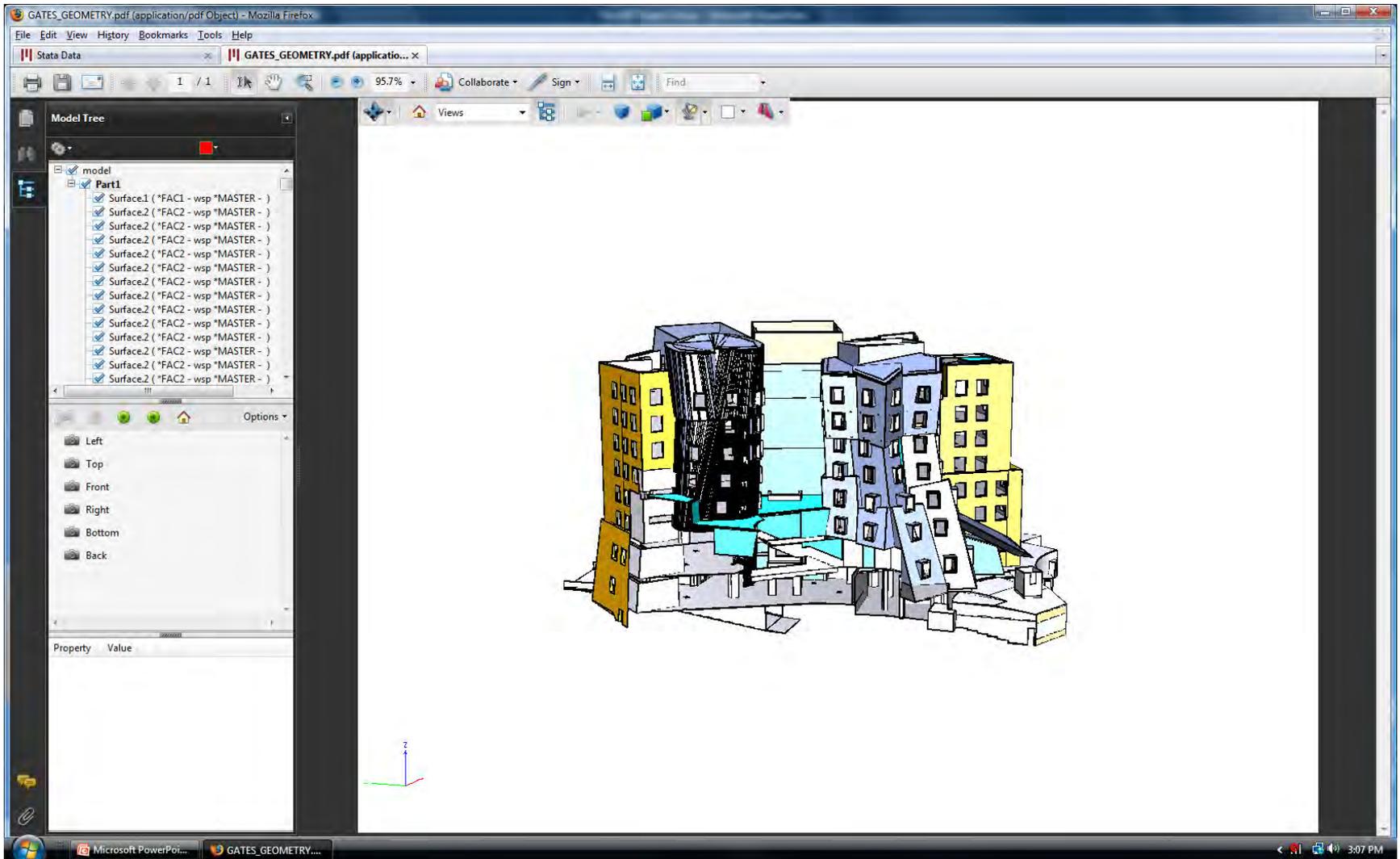
Discipline

Architecture (7)
Architectural (4)

Recipient

Autodesk (1) (1)

Interactive 3D Model (3D PDF)





🔍 Type here to search

Phases

- (missing) 23119
- Construction Documents 19142
- Design Development 6968
- Schematic Design 1183
- Unknown 512
- Does Not Apply 1

Document Types

- (missing) 23144
- Drawing 22539
- Specification 1296
- Sketch 775
- Photograph 684
- Model 649
- Rendering 541
- Presentation 326
- Other 259
- Study 258
- Index 178
- Product Brochure 116
- Work File 42
- Communication 40
- Audio/Video 27
- Project Book 22
- Unknown 18
- Schedule 8

Zones

- USIP 23758
- (missing) 23110
- Roof 3599
- Navy Buildings 375
- Unknown 82
- Does Not Apply 1

File Formats

- Portable Document Format 13091
- AutoCAD Drawing 11339
- JPEG File Interchange Format 5554
- (missing) 3559
- Revit artifact 3211
- OLE2 Compound Document Format 3014
- ASCII Text 2718
- ESRI MapInfo Data File 1955
- Portable Document Format - Archival 1420
- Exchangeable Image File Format (Compressed) 1010
- CATIA 5 model 622
- ZIP Format 491
- Unknown 423
- Rhinoceros/OpenNURBS 3D model 418
- Adobe Photoshop 209
- Tagged Image File Format 193
- Binary Interchange File Format (BIFF) Workbook 182
- Microsoft Word for Windows 171

Architectural Discipline

- (missing) 23113
- Structural 10373
- Architecture 9302
- Interiors 1441
- Mechanical 1400
- Electrical 1300
- Landscape 1156
- Security 838
- Plumbing 663
- Civil 352
- Lighting 277
- Info Tech 250
- Audiovisual 204
- Food Service 147
- Signage 73
- Geotechnical 22
- Unknown 13
- Does Not Apply 1

FACADE

[Link to This Page](#)



Future-proofing Architectural Computer-Aided DEsIgn // [Data-set: CWB Complete \(Oct 27\)](#)

[Add View](#) | [Start New Search](#)

18 items. << 1 next >>

TABLE

[auto-pick columns](#) | [add column...](#)

label	source	phase	zone	extent
1. FILE-18206	Images/071031_Landscape Images 2 Flags/071031_Aerial_11.jpg	Design Development	USIP	9831322
	071031_phase 1.jpg	Design Development	USIP	11203126
	071031_phase2-phase 2.jpg	Design Development	USIP	9363140
	Images/LandscapePlanting1.jpg	Construction Documents	USIP	842955
	Images/LandscapePlanting2.jpg	Construction Documents	USIP	837038
	Images/LandscapePlanting3.jpg	Construction Documents	USIP	9975422
	Images/montage.jpg	Construction Documents	USIP	3611911
	Images/schematic1.jpg	Schematic Design	USIP	421761
	Images/schematic2.jpg	Schematic Design	USIP	561453
10. FILE-37812	in/sd/images from balmori/schemeA.model3.jpg	Schematic Design	USIP	442613
11. FILE-37813	in/sd/images from balmori/schemeA.plan.jpg	Schematic Design	USIP	1113753
12. FILE-37814	in/sd/images from balmori/schemeB.model1.jpg	Schematic Design	USIP	769786
13. FILE-37815	in/sd/images from balmori/schemeB.model2.jpg	Schematic Design	USIP	657236
14. FILE-37816	in/sd/images from balmori/schemeB.model3.jpg	Schematic Design	USIP	548356

DOWNLOAD:



[\[external link\]](#)

Text Search

Attribute Filters

architecturalDiscipline 1

- 50 Architecture
- 41 Structural
- 18 Landscape

colocation ▶

created ▶

derivedBy ▶

derivedFrom ▶

documentType 1

extension ▶

extent ▶

format 1

- 79 Exchangeable Image File Format (Compressed)
- 18 JPEG File Interchange Format
- 2 OLE2 Compound Document Format
- 2 Adobe Photoshop
- 1 Portable Document Format



FACADE

Future-p

Add View

CWB Complete (Oct 27)

presentation1.ppt

Architectural Discipline:
Architecture

Document Type:
Presentation

Source:
Interiors/Schematic_Design/PRESENTATIONS/030405

Format:
Microsoft Powerpoint Presentation

Zone:

Text Search

Q

Attribute Filters

- architecturalDiscipline
- audience
- created
- creator
- documentType
- hasIndex
- phase
- title

- 5. Output-00007 MLE-38713 2005-05-17 United States Institute of Peace Presentation
- 6. Output-00008 FILE-38752 2005-03-02 Buro Happold Roof Skin Analysis
- 7. Output-00009 FILE-38773 2005-03-21 Site Plan, Pric

Opening presentation1.ppt

You have chosen to open

presentation1.ppt
which is a: PowerPoint Presentation
from: <https://rotarran.mit.edu:8443>

What should Firefox do with this file?

- Open with Choose...
- Save to Disk
- Do this automatically for files like this from now on.

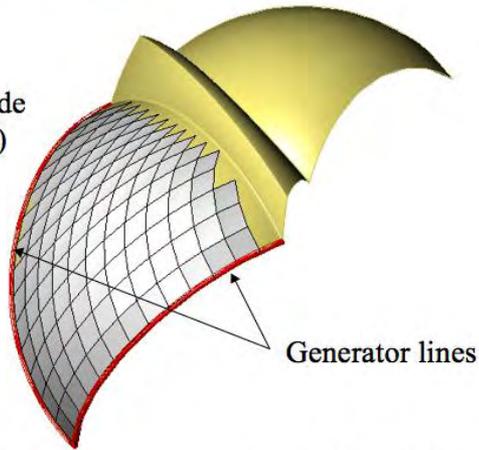
176 File

7 Output

Client Presentation (PPT)

Option 1: 'Draped net'

Every tile has same side length (angle changes)

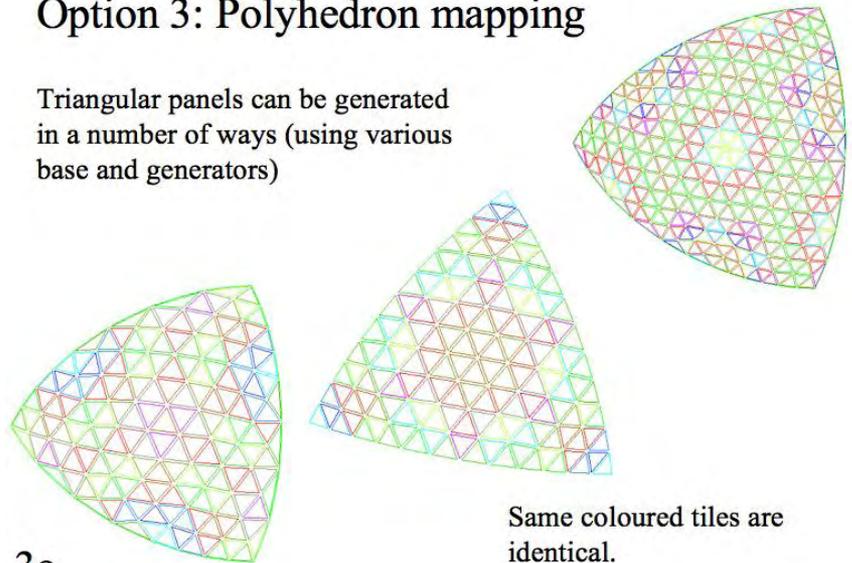


1a

Every tile is different

Option 3: Polyhedron mapping

Triangular panels can be generated in a number of ways (using various base and generators)



3c

Same coloured tiles are identical.

Moshe Safdie Assoc. presentation I.ppt

Mall, Washington DC



Moshe Safdie Assoc. NCPC_03_06.ppt

Mall View Today



Moshe Safdie Assoc. NCPC_03_06.ppt

A: View from West Potomac Park, South of USIP adjacent to Lincoln Memorial

without  USIP building

©MIT November, 2009

With USIP Building



Moshe Safdie Assoc. NCPC_03_06.ppt

A: View from West Potomac Park, South of USIP adjacent to Lincoln Memorial



©MIT November, 2009

So is the Semantic Web Real?

FACADE PROJECTS

3 Projects filtered from 9 originally (Reset All Filters)

ITEMS · MAP · TIMELINE · CAROUSEL

sorted by: labels; then by... · grouped as sorted

MARINA BAY SANDS, SINGAPORE

Marina Bay Sands, located on the Marina Bay waterfront, is a mixed-use integrated resort. The complex is organized around principal axes that extend into the surrounding urban fabric. Both the north-south promenade and the grand arcade traverse the entire project and are crossed by two east-west spines (view corridors), which connect the planned Gardens by the Bay, the local Metro station, Bayfront Avenue and the waterfront.

Building Three 50-story towers, two acre sky park bridging the towers, arts and sciences museum, waterside promenade, shopping arcade and convention center, casino.
Cost: \$3,600,000,000
Building Type: Resort Hotel
Contributor: Unknown
Location: Singapore

Architectural Postmodern Style:
Alternative Marina Bay names: Sands
Extent: 6,000,000 square feet
Is built? false
Climate: Tropical rainforest

Creator: Moshe Safdie and Associates
Construction System: Steel and Concrete.
Context: Urban Waterfront
Start Date: 2006
End Date: 2009

THE PEABODY ESSEX MUSEUM

Moshe Safdie's passion for complex geometries, elegant materials, and urban place-making all are evident in the new wing he designed for the Peabody Essex Museum. The new wing creates a dramatic public space at the heart of the Peabody Essex Museum campus with a soaring glass roof over a courtyard piazza that will serve as a central gathering place, in the tradition of a New England village green. Walkways radiate from the open space, leading

Search

Is Built?
false (2)
true (1)

Extent
111,000 square feet (1)
150,000 square feet (1)
6,000,000 square feet (1)

Creator
Gehry Partners, LLP (3)
Morphosis (3)
Moshe Safdie and Associates (3)

Context
Government Campus (1)
Small town (1)
Urban Waterfront (1)

Climate
Humid Continental (1)
Humid Subtropical (1)
Tropical rainforest (1)

Construction System
Skylit galleries over masonry and brick (1)
Steel and Concrete (1)
Steel, concrete and glass (1)

Architectural Style
Expressionist (1)
Neo-Vernacular (1)
Postmodern (1)

Contributor
Turner Construction Company (1)
Unknown (2)

Building Type
Administrative Government Facility (1)
Art Museum (1)
Resort Hotel (1)

Cost
\$125,000,000 (1)
\$3,600,000,000 (1)
\$65,000,000 (1)

Building Features
Soaring glass roof, piazza, education and public performance centers (1)
Steel and glass roof feature intimating the wings of a dove. (1)
Three 50-story hotel towers, two acre sky park bridging the towers, arts and sciences museum, waterside promenade, shopping arcade and convention center, casino. (1)

Location
Salem, MA, U.S.A. (1)
Singapore (1)
Washington, D.C., U.S.A. (1)

Date
2003 (1)
2009 (2)

Going live at MIT in mid-2010

Acknowledgements

The FACADE project was made possible by a grant from the U.S. Institute of Museum and Library Services

<http://facade.mit.edu>



The Simile Project was made possible by a grants from HP and the Andrew W. Mellon Foundation

<http://simile.mit.edu>

