PRESENTATION

Water Management Systems and Historic Buildings

SPEAKER

Cristina Ureche-Trifu, Robertson Martin Architects / Ph.D. student Carleton University

OUTLINE

I. **Introduction**
   a. No water management system leads to building damage
   b. Architecture theory & new design vs conservation of the built environment

II. **Case studies**
   a. Prefabricated
      i. Rain chains
      ii. Art-of-rain
   b. Sculptural
      i. Thornton Creek, 2010
      ii. Whole Flow, 2009
      iii. the Monolith, 2005
   c. Applied on facades
      i. Growing Vine Street, 1997-2005
      ii. Kunsthof Dresden, 1999
   d. Incorporated in design
      i. New construction
         1. Timber Pavilion, Expo 2000
      ii. Adaptive reuse
         1. Centro Hispano-Luso, Zamora
         2. Rénovation du Marché Couvert

III. **Conclusions**
PRESENTATION

The Alamo Database

SPEAKER

Robert Warden, Director of Center for Heritage Conservation and Professor of Architecture at Texas A&M University

OUTLINE

I. Introduction to the project
   a. A bit of history of the building
   b. A bit of history of politics surrounding the building
   c. A bit of history of tourism
   d. Why a database
   e. The goals of our project

II. Datasets
   a. Laserscans
   b. Totals station data
   c. Digital photographs
   d. Large format photographs
   e. Historical photographs
   f. CAD drawings
   g. 3D models

III. Data gathering - means and methods (all of the above)

IV. Data processing (all of the above)

V. Database concept
   a. Why not Getty Arches
   b. Where to start
   c. Development
   d. Issues
   e. Future

VI. Conclusions
PRESENTER  
Synergism in Conditions Evaluation Technologies: The Example of the San Juan Fortification Walls  

SPEAKERS  
John Feinberg, The Collaborative, Inc.; and Dave Woodham, Atkinson-Noland & Associates  

OUTLINE  
I. Project Team, Project Locations, Flyover, World Heritage Site, Size, Age and The Key Question, “How can we get these walls to reveal their true conditions (efficiently and without dismantling the walls)?”  
II. The Selected Mix of Investigative Tools  
a. Deep Coring with Video Documentation and materials testing of stones and mortars  
b. Laser scans  
c. Infrared thermographic imaging  
d. Digital imaging  
e. Radar Analysis  
f. Biological analysis  
g. Computer modeling  
h. Historical analysis  
III. “What are the threats and issues now and were they the same then?”  
a. “Was there a specific cause when segments of these walls fell into the sea?”  
i. Hurricanes  
ii. Earthquakes  
iii. Drainage  
iv. Wave action  
v. Poor bearing conditions  
vi. Vegetative growth  
vii. Quality of construction  
viii. Insufficient and/or sporadic funding leading to deferred or no maintenance  
b. “The wall construction, has it changed during its history?”  
i. Beginning in the 1500s there were partial wall sections that evolved into a series of intermittent short walls laid against the cliff faces, built primarily of local calcareous sandstone and weak mortar, in random rubble configuration.  
ii. Later Spanish campaigns added an ashlar face, and short intermittent walls were replaced or added on to with longer straight walls presenting an enhanced defensive posture. The bastions were extended and reconfigured to connect to the adjacent scarp walls.  
iii. The American period, 1898 on, saw extensive reconstruction and repair campaigns in 1925, 1938-1940, 1952, 1963, and 1983. Much of this work changed the wall typology from its original stone masonry. Concrete was used
to create backer walls, reinforce stone counterforts, and create entirely new replacement walls with various vaneers.

IV. Synergism between Diagnostic Techniques, and Historic Research and Diagnostic Techniques
   a. Review of synergism matrix and discussion with support individual images of each method.
   b. Example section of wall, Santa Elana Bastion south elevation. Images from each technique with history of the wall discussion intertwined.

V. Conclusions
PRESENTATION
Fort Jefferson: Assessing the Structural Stability of a Third System Coastal Defense

SPEAKERS
Lizzie Olson and Derek Trelstad, Robert Silman Associates

OUTLINE

I. Introduction
   a. General information
   b. Project scope

II. Brief history
   a. Coastal fortifications and the "Third System"
   b. Fort Jefferson

III. Construction
   a. Materials, geometry, and terminology
   b. Relationship between the scarp wall and the casemates
      i. Scarp wall as a sacrificial element
      ii. Structural independence and accommodation of differential settlement
      iii. Structural interdependence and construction logistics

IV. Deterioration
   a. Causes, patterns, and implications

V. Assessment
   a. Surveying and research
   b. Materials testing
   c. Analysis
      i. Graphic statics
      ii. Finite element analysis
      iii. Three-dimensional stability analysis
   d. Monitoring

VI. Conclusions
   a. Summary of findings and challenges
   b. Evaluation of overall structural stability, as intended and as impacted by deterioration
   c. Comparison of analytical findings vs. actual behavior
PRESENTATION
A Research and Investigation Program Unearths Important Information about the Pavilion at Fort Ticonderoga

SPEAKER
John G. Waite, John G. Waite Associates, Architects

OUTLINE

I. Fort Ticonderoga Construction History
   a. First buildings erected before 1700
   b. Large masonry fort carillon constructed 1756-58 by French
   c. Other wood frame buildings constructed for fort and village

II. Fort Ticonderoga Significance
   a. Located between Lake George and Lake Champlain - key transportation artery
   b. Captured by British 1759
      i. Key to control of North America
      ii. Led to loss of North America by French 1763
   c. Revolutionary War
      i. Captured by Ethan Allen
      ii. Cannon taken to Boston - Dorchester Heights

III. Preservation History
   a. Disrepair after Revolutionary War
      i. Buildings demolished for building materials
   b. Property acquired by William Ferris Pell - 1820
      i. Effort to halt destruction
      ii. One of the earliest preservation efforts in United States
   c. Fort rebuilt early 20th century, Alfred Bossom, architect
   d. Pell family constructs Pavilion as summer house in 1826

IV. Pavilion History
   a. Wood frame construction
   b. One of first seasonal houses constructed in United States - 1826
   c. Extended 1830’s
   d. Converted to steamship hotel 1839
   e. Early 20c - returned to use as private house
   f. Restored 1906-1909, Alfred Bossom, architect
   g. 1980’s no longer used as house - disrepair

V. Current Preservation Effort
   a. Preparation of historic structure report
      i. Conditions assessment
      ii. Construction history
iii. Analysis of building fabric/evolution of structure
   1. Dendrochronology
      a. Advantages and limitations of dendrochronology
      b. Timber elements dating to 1690’s, 1750’s, early 19c, and 20c
      c. Previously no pre-1820’s timber elements thought to survive on site
   b. Reuse of 18c masonry and wood components
   c. Provided opportunity to study 18c French and English building technology and compare with 19thc and 20thc technology
   d. Long-term building conservation program
      i. Preservation of deteriorated 18c and 19c fabric
      ii. Removal of incompatible modern construction
   e. Development of reuse plan to utilize building for uses compatible with its historic building fabric and previous uses