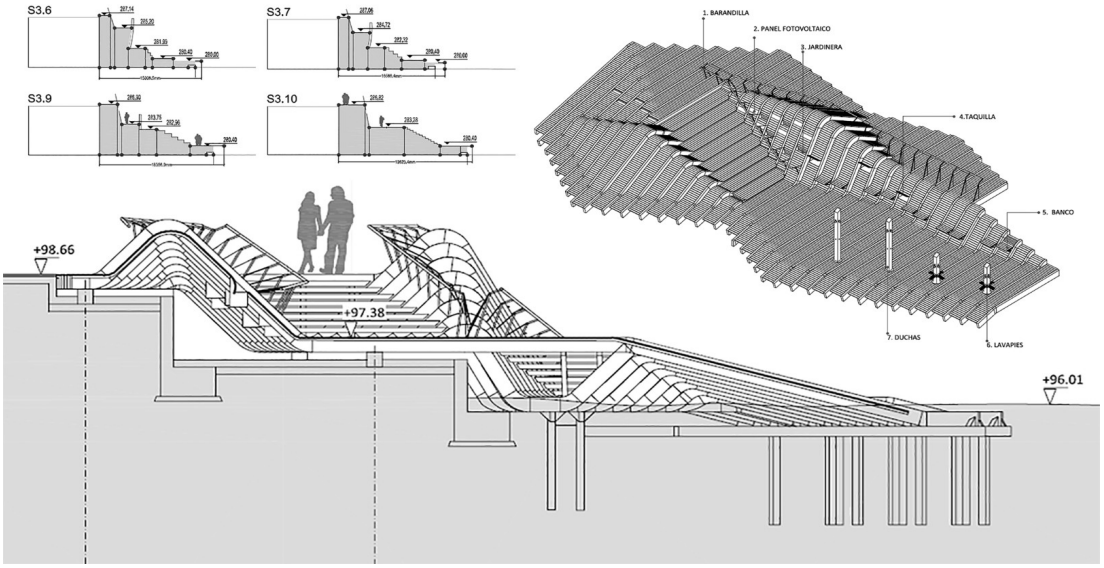
LA 4/550 Spring 2023

DIGITAL TWINS: Advanced CAD for Landscape Architecture

CRN 36462/36465 – Thursdays 12pm-1.50pm at LA231 (2 credits)

Instructor: **Ignacio López Busón**, ilopezbu@uoregon.edu (Office Lawrence 311)



Playa del Ingles Beach Equipments (2009)
LPA Studio (Juan Palop + Ignacio Lopez Buson)

"You can use an eraser on the drafting table or a sledge hammer on the construction site.."

- Frank Lloyd Wright

COURSE DESCRIPTION:

Thanks to the advance in digital technologies in the last decade, landscape design has finally moved today from the two-dimensional to the three-dimensional realm. The architecture industry has fully embraced the Building Information Modeling (BIM) paradigm, putting even more pressure on landscape architects to develop their projects directly in 3D. Three-dimensional modeling is not a visualization byproduct but a means to incorporate more information into the design process.

From a landscape perspective, this translates into a myriad of possibilities: accurate topography models, environmental simulations, real-time tracking of materials, instant cut-and-fill calculations, and more precise and streamlined construction documentation. The latter becomes even more critical at a time when landscape designers are pushing the boundaries of landscape architecture and proposing highly complex projects that can only be developed using 3D technologies.

By using a methodology that merges BIM logics and 3D modeling techniques, the students will aim to develop a three-dimensional model of an existing landscape architecture project of their choice, analyze and evaluate its environmental performance, and finally extract all the necessary information from the digital twin to successfully document the project based on CAD standards.

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RECOMMENDED SOFTWARE:

Please, have the following software ready to use before the start of the course:

- **Rhino 6.0 or 7.0**
  Free 90-day trial. Download at https://www.rhino3d.com/
- **Autodesk Autocad**
  Free for UO Landscape Architecture students.
  Download at https://www.autodesk.com/education/edu-software/overview
- **Adobe Suite**
  Photoshop, Illustrator, InDesign. Subscription model.
  Download at: https://www.adobe.com/creativecloud/buy/students.html

SUGGESTED READING:

Cantrell, Bradley. Responsive Landscapes: Strategies for Responsive Technologies in Landscape Architecture. Routledge, 2017.

Cantrell, B., & Mekies, A. (2018). Codify: Parametric and computational design in landscape architecture. London: Routledge.

Cantrell, Bradley. Modeling the Environment: Techniques and Tools for the 3D Illustration of Dynamic Landscapes. 2012.fficiency. New York: Wiley.

Design Workshop. Landscape Architecture Documentation Standards: Principles, Guidelines, and Best Practices. Wiley. 2015

Harris, C. Time-Saver Standards for Landscape Architecture. McGraw Hill. 1997

Hopper, L., Landscape Architectural Graphic Standards. Wiley. 2007

Petschek, P., Grading for Landscape Architects. Birkhauser. 2008

Strom, S., Nathan, K., Woland, J. Site Engineering for Landscape Architects. 2009

Walliss, Jillian, and Heike Rahmann. Landscape Architecture and Digital Technologies: Re-Conceptualising Design and Making. Routledge. 2016.

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