Autodesk AutoCAD Certified User Skills

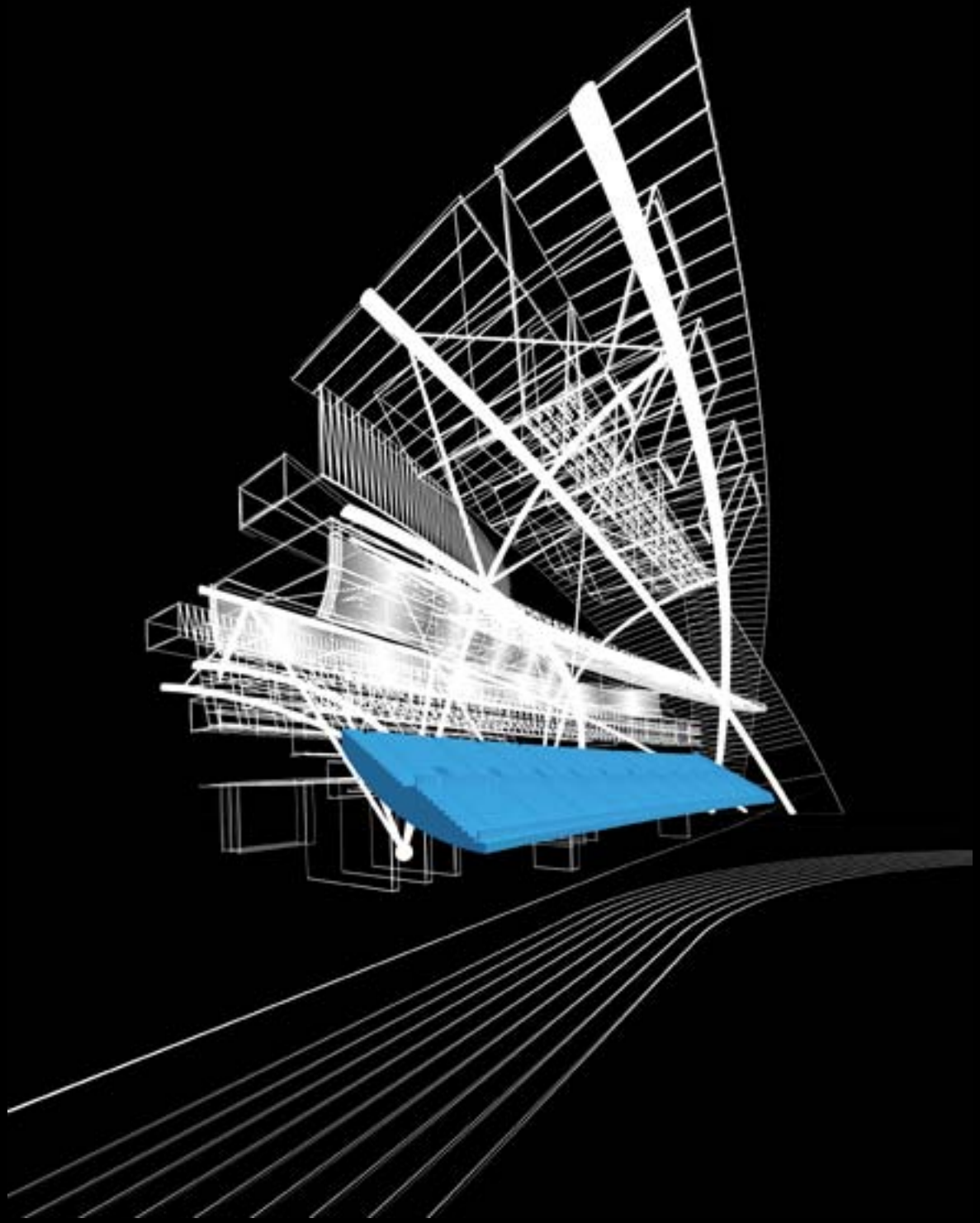


Image courtesy of Hobart, Yanez, Ramos, Maguey and Martinez

Autodesk®

CERTIPORT®

Achieve • Distinguish • Advance

AutoCAD® Certified User and Autodesk Inventor® Certified User certifications align both academic and industry requirements into one attainable certification specifically designed for students. The exams combine multiple-choice and performance-based exam questions to ensure students can effectively use Autodesk software.

Autodesk Certified User certification confirms students have the skills necessary to continue their design careers—whether they attend college, enter the workforce or work toward additional levels of industry certification after graduation.

By partnering with Certiport, the leading provider of industry certification exams, schools become Certiport® Testing Centers, provide Autodesk certification exams in their classrooms and certify student design software skills with recognized, industry certifications. Classroom license options allow schools to conduct unlimited online testing for an affordable annual fee that simplifies budgeting by eliminating per-test costs. To learn more visit www.certiport.com/autodesk or sign-up to become a Certiport Center at www.certiport.com/go. Contact Certiport at autodeskinfo@certiport.com.

Introduction

Welcome to the *Autodesk® AutoCAD® Certified User Skills*. This document was designed to help educators and educational institutions teach AutoCAD ® software skills. Created using valuable input from respected educators and designers, it sets forth important skill standards for developing a high-quality user certification exam and curriculum resources.

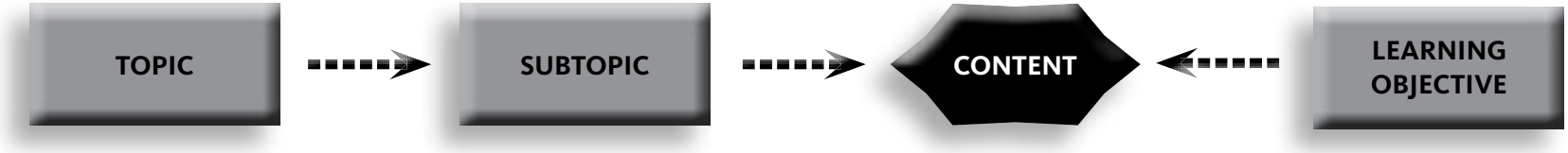
The AutoCAD Certified User Skills serves to standardize the core competencies for fundamental -level instruction with AutoCAD for a two-semester class and provides a content framework and reference guide for the Autodesk® AutoCAD Certified User exam.

TIP: Although this document is designed to facilitate teacher-led courses and lessons, it may also be referenced for self-paced learning through the use of the Autodesk Education Secondary Curriculum and the Autodesk® AutoCAD® Certified User Digital Study Packet.

Using This Document

This easy-to-read document lists industry-specific topics pertaining to a function or feature set of AutoCAD software. Topics are organized into three substructures logically sequenced for classroom presentation:

- **Topic**: A standard functional subject area and/or feature set available in AutoCAD software.
  Example: Drawing Organization and Inquiry Commands.
- **Subtopic**: A subtopic provides more detail on the topics and what the topics support.
  Example: Layers.
- **Content**: The content provides more detail about the subtopic and what should be taught and learned.
  Example: Layers Properties Manager.
- **Learning Objective**: The learning objective exemplifies what the student is expected to understand.
  Example: Use layers to organize objects in your drawings.



Introduction

AutoCAD Certified User Digital Study Packet

The AutocAD Certified User Digital Study Packet is a digital learning resource that provides students with a library of short videos based on the AutocAD Certified User Digital Study Packet. The study packet covers the basic techniques required to become familiar with the software and get hands-on quickly.

TIP: Teachers can leverage the study packets in conjunction with the Autodesk Education Secondary Curriculum or their own curriculum to help their students build their software skills and prepare for the certification exam. The AutoCAD Certified User Digital Study Packet will be available in 2011.

Autodesk Education Secondary Curriculum

The Autodesk Education Secondary Curriculum provides teachers and students with a highly visual story-based curriculum created to promote design innovation and creative problem-solving through science, technology, engineering, arts, and math (STEAM). The curriculum is structured as a framework for learning software through project-based content based on engaging real-world industry projects that build gradually in difficulty, offering students a chance to achieve small successes as they build their technical skills. The Autodesk Education Secondary Curriculum will be available in 2011.

TIP: Using the AutoCAD Certified User Skills as benchmarks, teachers can measure a student's progress towards certification as they work through the skills-building projects offered in the Autodesk Education Secondary Curriculum.

Feedback

We welcome your feedback on the *AutoCAD Certified User Skills*. Please email us at *secondarycurriculum@autodesk.com*.

Autodesk AutoCAD Certified User Skills

Image courtesy of Autodesk Gallery

Industry Specific Topic	Sub-Topic	Content	Examples of Learning Objective	Reference
User Interface				
	UI Navigation/Interaction			
		Application menu	Access various tools to create, open, and publish a file.	Application Overviews
		Ribbon > Panels > Tabs	Identify and state the purpose of the main interface elements.	Application Overviews
		Context (right-click menus)		Application Overviews
		Menus		Application Overviews
		Quick Access toolbar	Demonstrate the use of the tools on the Quick Access Toolbar.	Application Overviews
		Workspace	Define and set the workspace	Application Overviews
		InfoCenter	Describe the functions of InfoCenter	Application Overviews
		Open a drawing	Use the Application menu or Quick Access toolbar to open an existing file	Application Overviews
		Layouts	Describe the two primary spaces in AutoCAD.	Application Overviews
		Navigating in the application window	Use the Zoom and Pan commands to view different areas of the drawing.	Create and Edit 2D Objects - Zoom and Pan
Creating Drawings				
	Coordinate Entry			
		Coordinate systems	Describe the two coordinate systems.	Understand the UCS
		Coordinate entry	Use dynamic input, direct distance, and shortcut menus.	Overview of Coordinate Entry

Industry Specific Topic	Sub-Topic	Content	Examples of Learning Objective	Reference
Creating Drawings				
	Draw Tools and Settings			
		Draw tools: Line	Use the Line, Circle, Arc, Erase, Rectangle, and Polygon commands to create and erase geometry in the drawing.	Create and Edit 2D Objects - Line
		Draw tools: Circle		Draw Circles
		Draw tools: Arc		Draw Arcs
		Draw tools: Erase		Erase Objects
		Draw tools: Rectangle		Draw Rectangles and Polygons
		Draw tools: Polygon		Draw Rectangles and Polygons
		Object snaps	Use object snaps to accurately place and create objects in the drawing.	Create and Edit 2D Objects - Object Snaps
		Polar Tracking and PolarSnap	Activate and use the Polar Tracking and PolarSnap modes to more accurately create geometry at different angles in the drawing.	Use Polar Tracking and Polar Snap
		Object Snap tracking	Explain, enable, and use object snap tracking to position geometry in the drawing.	Object Snap Tracking
		Drawing Units	Describe the process of setting Length and Angle units	Drawing Units Dialog Box
		Drafting Settings	Describe the Snap and Grid, Polar Tracking, and Object Snap settings.	Drawing Settings Dialog Box
Manipulating Objects				
	Grips			
		Grip editing	Use Grip modes to stretch, move, scale, rotate, or mirror an object.	Grips

Industry Specific Topic	Sub-Topic	Content	Examples of Learning Objective	Reference
Manipulating Objects				
	Object Selection			
		Select objects individually	Use single clicks to add and remove objects from a selection set.	Create and Edit 2D Objects - Select and remove objects
		Window selection	Use a window to select only objects that are entirely enclosed by the rectangular area.	Create and Edit 2D Objects - Window Selection
		Crossing selection	Use a window to select objects that the rectangular window encloses or crosses.	Create and Edit 2D Objects - Crossing Selection
	Move Objects			
		Object Snaps, Object Tracking, and Coordinate Entry	Use coordinates, grid snap, object snaps, and other tools to move objects with precision.	Move Objects
Drawing Organization and Inquiry Commands				
	Layers			
		Layer Properties Manager	Use layers to organize objects in your drawing.	Create and Edit 2D Objects - Layers
	Object Properties			
		Quick Properties palette	Use the Quick Properties palette to display and change the most commonly used properties.	Display and Change the Properties of Objects
		Properties palette	Use the Properties palette to display and change the properties of the selected object or set of objects.	Display and Change the Properties of Objects
		Match Properties	Use the Match Properties command to apply the properties from a source object to destination objects.	Copy Properties Between Objects

Industry Specific Topic	Sub-Topic	Content	Examples of Learning Objective	Reference
Drawing Organization and Inquiry Commands				
	Linetypes			
		linetype	Use linetypes to distinguish objects in the drawing.	Overview of Linetypes
	Inquiry			
		inquiry	Use the Inquiry commands (Distance, Radius, Angle, Area, List, and ID) to obtain geometric information from the drawing objects	Extract Geometric Information from Objects
Altering Objects				
	Modify Tools			
		Trim and Extend	Change the length of objects using the Trim and Extend commands.	Trim or Extend Objects
		Offset	Create parallel and offset geometry in your drawing by using the Offset command.	Offset
		Join	Use the Join command to combine multiple objects into a single object.	Join
		Break	Break objects into two or more independent objects.	Break
		Fillet	Apply a radius corner to two objects in the drawing.	Create Fillets
		Chamfer	Apply an angled corner to two objects in the drawing.	Create Chamfers
		Stretch	Use the Stretch command to alter the shape of objects in the drawing.	Stretch
Working with Layouts				
	Layouts and Viewports			
		Plotting environments	Identify the environments in which you can plot data and create a new layout.	Plot a Drawing layout
		Viewports	Create and manipulate viewports.	Plot a Drawing layout

Industry Specific Topic	Sub-Topic	Content	Examples of Learning Objective	Reference
Annotating the Drawing				
	Adding Text to a Drawing			
		Multiline text	Use the Mtext command to create multiline text.	Annotation
		Single line text	Create single line text.	Annotation
		Edit text	Use different methods to edit text.	Annotation
		Text styles	Create text styles to manage text.	Annotation
Dimensioning				
	Adding Dimensions to a Drawing			
		Dimensions: Linear, Angular, Aligned, Radius, Diameter, and Center Mark.	Create dimensions using different options.	Annotation
		Dimension Style	Use dimension styles to manage dimensions.	Annotation
		Leaders	Create and edit multileader styles and multileaders.	Create and Modify Leaders
		Edit dimensions	Use different commands and methods to edit dimensions.	Modify Dimension Geometry
Hatching Objects				
	Hatching Objects			
		Hatch	Add a hatch pattern to a defined boundary.	Hatch
	Fills and Gradients			
		Hatch	Add a fill pattern or gradient to a defined boundary.	Hatch
	Edit Hatch Patterns and Fills			
		Hatchedit	Modify an existing hatch or fill.	HatchEdit

Industry Specific Topic	Sub-Topic	Content	Examples of Learning Objective	Reference
Working with Reusable Content				
	Blocks			
		Block	Define and name a block.	Create Blocks within a Drawing
		Insert	Specify the name and position of a block or drawing to insert in a drawing.	Insert
	DesignCenter			
		adcenter	Use DesignCenter to reuse the data in a drawing.	Add Content with Design Center
	Tool Palettes			
		toolpalettes	Access tool palettes and use their tools.	Toolpalettes
Creating Additional Drawing Objects				
	Shapes			
		Polyline	Create and edit polylines with the Polyline command.	Pline
		Spline	Create smooth curves with the Spline command.	Spline
		Ellipse	Create ellipses and elliptical arcs with the Ellipse command.	Draw Ellipses
Plotting Your Drawing				
	Output			
		Page setups	Create and activate page setups.	Plot/Publish
		Plot	Plot design geometry from model space or from a layout.	Plot/Publish

Acknowledgements

Production design / layout:

Diane Erlich

Editorial services:

Jessica Bendy

Additional editorial services:

Diane Erlich

Primary authors:

Phil Dolan

Producer:

Linda Selhem

© 2010 Autodesk®. All rights reserved.

No part of this publication may be edited or reproduced in any form or by any means, electronic or mechanical, without permission in writing from the publisher.

Notices
Knowledge and best practice in this field are constantly changing. As new research and experience broaden our understanding, changes in research methods, professional practices, or medical treatment may become necessary.

Practitioners and researchers must always rely on their own experience and knowledge in evaluating and using any information, methods, compounds, or experiments described herein. In using such information or methods they should be mindful of their own safety and the safety of others, including parties for whom they have a professional responsibility.

To the fullest extent of the law, neither the Publisher nor the authors, contributors, or editors, assume any liability for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions, or ideas contained in the material herein.

Autodesk AutoCAD Certified User Skills

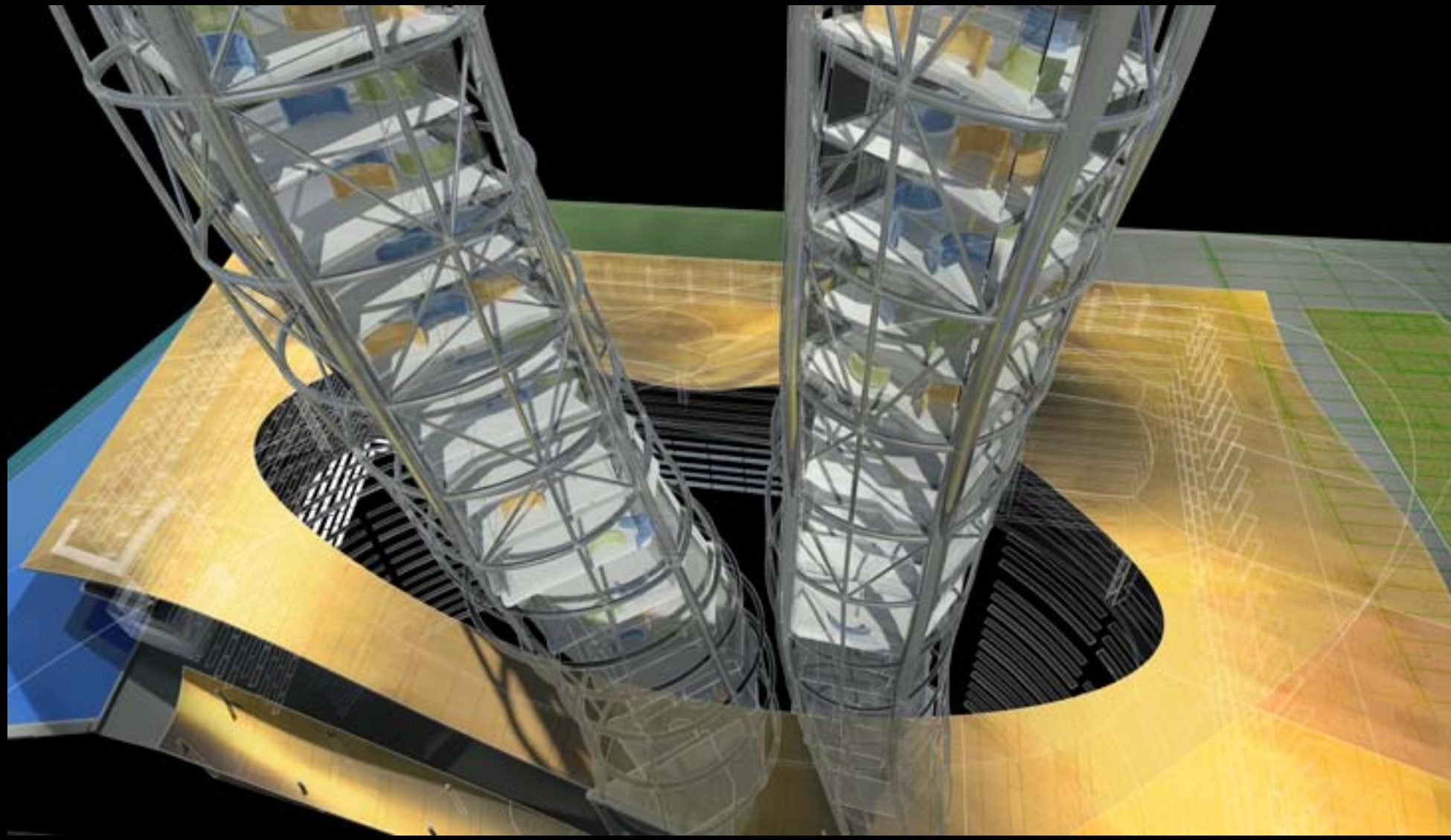


Image courtesy of Autodesk Gallery

Autodesk®