



MERIT AWARD

\$25M OR GREATER, BUT LESS THAN \$100M

Seuss Landing ORLANDO



JUROR COMMENTS:

This project highlights the flexibility of steel to create complex shapes of a make-believe world where gravity doesn't exist. The use of wire frame CADD modeling demonstrates the state of the art in geometry definition.

STRUCTURAL ENGINEER

Walter P. Moore and Associates, Inc., Dallas

ARCHITECT

HKS, Dallas

GENERAL CONTRACTOR

Whiting-Turner Contracting Co.

PROJECT OWNER

Universal Studios

STEEL FABRICATOR, DETAILER, ERECTOR

Met-con, Inc. (AISC member),
Cocoa, FL

ENGINEERING SOFTWARE

SAP, RISA 3D, RAM Structural
System

Since his first book was published in 1937, Dr. Seuss has stirred the imaginations of children. Universal Studios has recreated the world of Dr. Seuss in Seuss Landing, one of six "islands" in its new theme park, Universal's Islands of Adventure, in Orlando, FL. Seuss Landing was created to entertain the young as well as the young-at-heart through the fantastic shapes, fun characters and vivid colors depicted in the books of Dr. Seuss.

The imaginary settings in the illustrations of Dr. Seuss should not exist in real life. Buildings lean at unnatural angles with curving and branching columns. Bridge supports are so thin and twisted that they would immediately buckle in our world. If gravity existed in the world of Dr. Seuss, structures would surely tumble to the ground. And yet, Seuss Landing was built in the real world of gravity, fabrication processes, and erection tolerances. The designers of Seuss Landing turned to structural steel to bring this imaginary world into our world.

Read more about Seuss Landing in the August 2002 issue of *Modern Steel Construction*.



The design combined the talents of artists, technicians, architects and engineers. First, a program of eight buildings was conceived, containing a variety of fanciful rides, shows, restaurants and shops. Next, artists drew renderings of the buildings based on the illustrations and story lines of Dr. Seuss. Architects and engineers melded the program and renderings to produce design development drawings. Model artisans then used the drawings and renderings to build $\frac{1}{2}''=1'-0''$ scale models out of wood and clay. Technicians ran a robotic arm over the surface of each model to measure and record three-dimensional coordinates of thousands of points on the exterior skin of the physical models. These coordinates were linked in a CADD model to form a wire frame. The faces of the wire frame were linked with planar surfaces and the edges smoothed to replicate the physical models. The architect and structural engineer used this CADD model to sculpt structural steel supports so that steel members would stay within skin surfaces.

Keeping the structural steel within the skin led the fabricator and erector to the creation of structural steel sculptures in lieu of typical structural steel framing. Steel sections are bent, segmented and welded together to snake through thin free-form shapes. Steel appendages are fastened to building frames to hold up features such as Seussian characters, 29' ice-cream cones and star-shooting cannons. The Onceler's House is an example of a structural steel sculpture used to support Seussian art. From the top of the Onceler's house, the Onceler tells park guests a story of environmental disaster caused by his own greed. In addition to the environmental theme of the story line, sustainable design principles were used for the sculpture, and the Onceler's House was constructed from recycled and recyclable materials.

The engineering achievements of Seuss Landing are made possible through science, technology and steel. The results are fantastic works of art that are enjoyed by thousands of park guests every day. ★