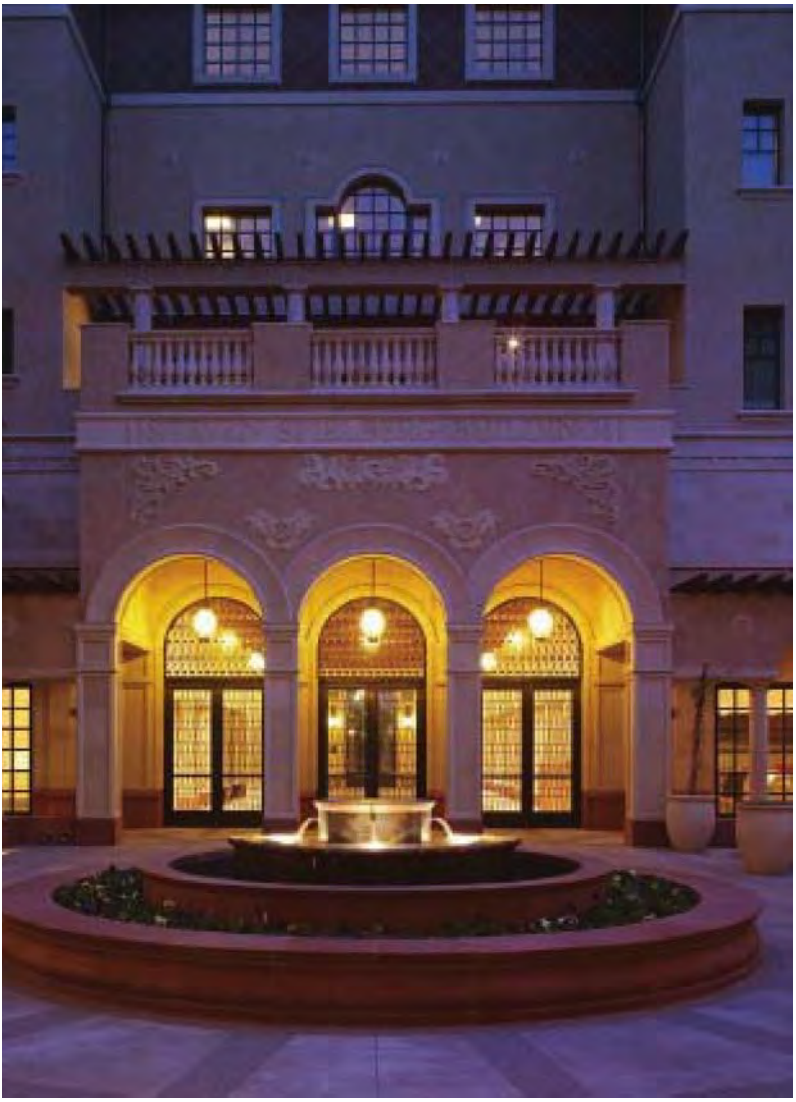
By Ron Armstrong, AIA

REALITY ENDS HERE

DALLAS ARCHITECT TACKLES RETRO & FUTURISTIC GOALS FOR USC'S SCHOOL OF CINEMATIC ARTS



The words "Reality Ends Here" are inscribed above one entryway at the new School of Cinematic Arts at the University of Southern California. More than the official motto for its students of film, television, and interactive media, the words also epitomize the far-reaching architectural concepts required for the building design.

From the start, our firm, Urban Design Group (UDG) in Dallas, knew several aspects of the high-profile, multi-million-dollar project would represent challenges. Earthquake resilience and movie production programming are not typical considerations for a Texas firm, and full-scope building information modeling including lifecycle maintenance is not (yet) the norm for any firm anywhere. The 100-year lifespan expectancy is rare too.

The university, having outgrown its existing facilities, set aggressive goals to be good stewards of the funding and the building opportunity, to meet more stringent code requirements, and to make sure the new home for the school visually lived up to its historic reputation. They wanted it to represent open collaboration while providing a "sense of place."

Retro Style/High-Tech Function

The first and largest pieces of the complex opened in January and four other buildings of Phase 2 are to be completed in 2010. The four-story, 137,000-square-foot structures of cast-in-place concrete exhibit a "California Style" in the Mediterranean vein. The retro design by UDG's design principal John Novack, FAIA, is reminiscent of a popular style 80 years ago in Southern California when the school was founded by movie legend Douglas Fairbanks, Sr. and other pioneers of the Academy of Motion Picture Arts and Sciences. Other buildings on the diverse campus also belong in that genre.

UDG paid attention to scope and scale, as well as the colors, textures, and shapes to provide a visual feast for anyone stepping onto the property. The structures' top-floor color variation, archways, balconies, an 80-by-60 foot courtyard, and the off-center tower reinterpret the space to be airy and open.

True to the genre, the massive symmetrical structures have beige-colored plastered walls, a low-pitched red tile roof, a colonnade, plaster flourishes, iron lattice-like screens, pillared balconies, ornate archways, wooden modillions, marble flooring, and stonework. During concept design, we studied the work of architect George Washington Smith, whose 1920s work helped popularize the style.

Creating a contemporary version of a retro style meant using some lookalike materials that provide high durability and sustainability without depleting natural resources. It also meant adopting several "classic" methods done by hand: the trolling and coloring processes for plaster; the matching and cutting of the marble flooring; and the carving of the friezes by a craftsman in a back shop for instance. We also added ground stone into the plaster so that the structure subtly takes on different shades in sunlight during the day.

Internally, technology complements all aspects of the learning experience. While the buildings' screening rooms and production labs feature state-of-the-art audio and video technology, the floor plans also feature "wired" informal meeting spaces in hallways, complete with flat screens and wireless Internet or plug-and-play access to secured servers. To ensure flexibility decades to come, all major hardware is in the sub-level. All cabling and wiring is placed in ceiling-level cable trays.

It is a working production studio with classrooms.

125-Percent Quake-Ready

Meeting desired durability and flexibility for 100 years required earthquake resilience. Based in Los Angeles, the school is just miles from the San Andreas Fault, a foremost geological cause of quake activity in the United States. UDG turned to our frequent design partner, structural engineer Gregory P. Luth and Associates.

Building code in Southern California requires a minimum standard that, during an earthquake, saves occupants because their "inelastic" buildings bear the brunt of the tremors and are destroyed. We aimed for a higher standard, however. We designed the buildings with replaceable steel "fuses" or connectors that will isolate and redirect a quake's heavy jolts away from walls, ceilings and floors so damage occurs in non-foundation areas and is reparable. It is called a "fused-rotating-walls" innovation, and it called for concrete substrate for the façade, ductile linked shear walls, and rocking shear panels. The facility is designed to remain virtually undamaged up to a 125-percent level of existing codes.

BIM saved time and money on Phase 1 of the project and time will tell on Phase 2. Studies are underway to quantify total savings. At one point during design, BIM allowed for a 12-minute change to the tower that typically would have taken two to three days to redraw and return to the plans.

For Phase 1, BIM was chiefly used for clash detection, subcontractor coordination, and job site location and dimensional control. For Phase 2, BIM added estimating, scheduling, and lifecycle building maintenance—the latter benefit fulfilling USC's vision of quality facility maintenance for a 100-year lifespan. Long-term plans are to use the school's data-rich 3D model not only for that building, but also as a framework for enhancing the 2D software for managing other key buildings on campus. BIM is giving the university the capability for "smart" operations and maintenance monitoring—primarily of mechanical systems, and will aid in energy conservation, facility planning, remodeling, and expansion if needed.

BIM and the 12-Minute Solution

BIM technology was vital for meeting the advanced set of goals since BIM could augment team collaboration, material fabrication, and long-term facility maintenance. UDG aggressively investigated the most advanced BIM iterations, and then signed on a consultant, View by View of San Francisco, CA, to take the lead.

View by View used Autodesk Navisworks to bring together Autodesk Revit Architecture, Autodesk AutoCAD, and other tools used by the team. ArTra software and Navisworks linked the 3D model and the USC system, including Famis, Meridian, MasterSpec, and Honeywell software.

The thematic context and high performance capabilities will carry over to Phase 2's addition of four more buildings for classrooms, interactive media labs, studios, and sound stages. Once built out by 2010, the complex will be a gracious "campus within a campus," tied together by design similarities, walkways, and views from one end of the complex to the other. ■

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