
USC SCHOOL of CINEMATIC ARTS

School of Cinematic Arts

The University of Southern California

The new School of Cinematic Arts at the University of Southern California is the first visual representation of both its legacy and reputation as one of the top film schools in the world. It is the first time the school -- founded by pioneer members of the Academy of Motion Picture Arts and Sciences 80 years ago -- has its own identifiable home. The chosen Mediterranean Revival style – popular 80 years ago -- marks that distinction.

In January 2009, faculty, staff and students moved into the first, largest and most innovative building (the subject of this portfolio) of what will eventually be the school's five-building "campus within a campus." The $75 million, 4-floor (plus 1 sub-level) structure provides 137,000 square feet of space and serves as the central building for administrative and educational purposes.

Celebrating the school's 75th anniversary in 2004, the administration and various members of the alumni evaluated possible solutions to the school's crowded conditions and aging and inefficient set of buildings. They decided that a major renovation would be too costly and would amount to only a short-term fix. The Lucasfilm Foundation then offered to donate $175 million to the school, to partially fund Phase 1 of a building program that would be completed by other donations. The remaining funds went to the school's endowment fund.

The university and the foundation handed two overarching goals to the architectural firm, Urban Design Group of Dallas, Texas. The first was to pay tribute to the school's legacy starting with its founding in 1929, and the second was to deliver a high performance building with a 100-year life span.

To achieve these goals, Urban Design Group focused on three objectives:

- Create a contemporary application of "California style" that was prevalent and popular in Hollywood at the dawn of the motion picture industry and the fledgling film school
- Adopt building information modeling (BIM) technology for team collaboration, material fabrication and long-term facility management use
- Design to meet the 100-year life span goal by incorporating extreme earthquake resilience and flexibility in both interior spaces and technology

These are explained in greater detail below.

Contemporary Application of 'California Style'

USC and Lucasfilm Foundation wanted the school's new home to provide students and visitors alike with a "sense of place" while achieving a respect for the school's history. With Urban Design's assistance, the "owners" decided the best way to achieve that vision was to contextualize the design in a Mediterranean Revival style.

The chosen style recalls Southern California 80 years ago when Mediterranean and similar styles were at their height of popularity. These styles make up what became known as the "California Style." USC's University Park Campus where the school is located has a mixture of architectural styles and many would fit in the varied California Style category. The Romanesque-styled Edward L. Doheny Jr. Memorial Library and the Italian Renaissance on display at the George Finley Bovard Administration Building are two good examples. Both were built in the 1920s and 1930s, the target date for the design of the new school.

The Mediterranean style is characterized by massive symmetrical facades, exterior plaster walls, low-pitched tile roofs, arches over windows and doors and lush gardens. Another characteristic of quality craftsmanship in the bygone era, the school's exterior plaster walls contain ground stone, causing the creamy hue to turn different shades, depending upon the position of the sun during the day.

Urban Design Group studied the work of George Washington Smith, an architect whose work in the 1920s helped popularize California Style at that time. Other examples of Mediterranean design in the region are the Pasadena (Calif.) City Hall, Greenacres (former Harold Lloyd Estate) in Los Angeles; the Hayes Mansion in San Jose, Calif.; and the original Paramount Studios in Hollywood, Calif.

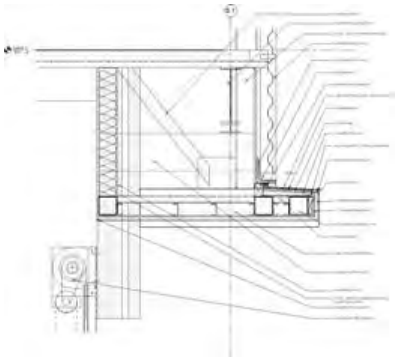
Despite being in close proximity to other university buildings, as is typical on a large urban campus, the building's four stories are scaled to comfortably fit in the confined footprint. The spacious 80-by-60 foot courtyard in the site's center is a favorite meeting place for students. The structure's archways and balconies also reinterpret the space to be airy and open. Once all three phases are completed the north-south archways will offer a view from one side of the complex to the other. A series of doorways, windows and archways will also provide the longest site line -- a 260-foot east-west view -- on the property.

The building's interior design borrows from another "California style." The rich colors and patterns in tile, stone, wood tones, fabrics and furnishings are reminiscent of the Arts and Crafts style. The geometric shapes in the tile flooring imitate a patchwork of stones from like the great halls in Europe. Cherrywood appears in the lobby and exhibition spaces on the ground floor as well as in the boardroom. Stained columns adorn the 200-seat screening room.

BIM Technology

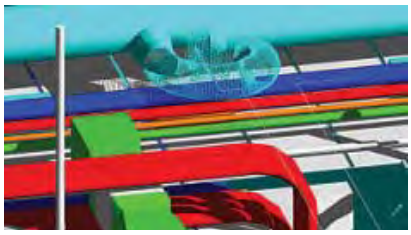
BIM is being used for design, materials fabrication, construction and facility maintenance and management after occupancy and for the lifecycle of the buildings. Practitioners merged nine different 3D models – created in software including Revit, Tekla and AutoCAD Civil – into one "supermodel" with the help of NavisWorks software. All aspects of the design and construction were digitized to create the "virtual" buildings to provide the specifications for construction. In Phase 2, all MEP details were included – possibly a first for the industry. Because a software operator can zoom out for a bird's eye view or can zoom in to within 2 inches of a component, practitioners were able to work out clash problems quickly by referring to the supermodel instead of reverting to the time-consuming RFI process.

BIM use also aided in the manufacturing of materials. The structure's exterior walls are customized 40-foot high rebar steel cages set in place. They are specially built for easy and quick installation in a tight space common for a large campus. Plus, the cages – later filled with concrete and covered in plaster – are joined together with expansion joints that will isolate and re-route earthquake shocks. BIM improved the customized fabrication process.



Use of BIM also is occurring on the construction site itself. The contractors on the site today have the ability to check the 3D model as they work. Computer screens feature scope and orientation capabilities, as well as hyperlinks to the full extent of material and process details.

Finally, USC's Facilities Management Department is currently working to integrate the 3D model of Phase 1 with its other software for "live" monitoring of the heating and air conditioning, the electrical and the plumbing systems in the building. The university expects this sophisticated view to improve a building's lifecycle through thorough "smart" operations and maintenance monitoring. ArTrA software linked the 3D model and the USC system, made up of Famis, Meridian, MasterSpec and Honeywell software. Phases 2 and 3 will also be incorporated.



First up, Phase 1 has some 5,000 sensors and BIM is the conveyer of that monitoring capability. Ultimately, the model will alert the facilities management personnel about mechanical problems or will be the first place to look when a facility problem is reported. This will greatly improve response and repair time. Personnel can generate reports on a system failure or on energy use, can generate work schedules, can communicate with custodial staff if there is a spill in the lobby, and can even pass along the recommended cleaning product for use on a special stone or tile at the site of that spill.

Confident of BIM's advantages, USC plans to bring most of its key buildings on the University Park campus into the BIM framework over the next several years.

BIM's use in Phase 1 saved time and money and the same results are expected in Phase 2. In one instance during the design phase, an owner-requested alteration to a tower was completed in 12 minutes instead of the usual two to three days. Thanks to building modeling, the first structure was completed four months sooner than is typical for a project of its type.

100-year Life Span Goal

The owners charged the designer with the mission of creating a set of buildings that would not be outdated and ill-suited for educational and technological changes in the future – as is expected in an industry where buildings are typically disposed of in 25 to 35 years.

To achieve the goal, the structures had to be designed to withstand seismic earthquakes which occur in Southern California. The design called for the use of "fuses" or connectors that isolate and redirect a quake's heavy jolts away from walls, ceilings and floors so the damage is done to reparable and non-foundational areas. The basic structure is, therefore, elastic, while the connectors are inelastic to bear the brunt of the tremor.

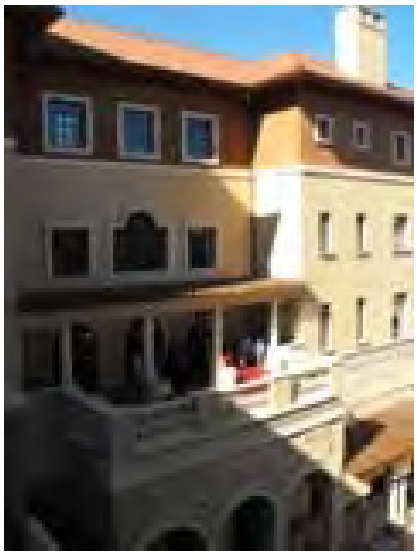
Most buildings built to code in Los Angeles achieve an inelastic standard, thereby making them literally crack without collapsing – ensuring that occupants are safe but that the building is non-repairable. This method is the first of its kind in the Los Angeles area. Building code tests revealed that the Phase 1 building will not only protect occupants during a quake, but will also retain its structural integrity.

The owners also required that the design provide a flexibility in space and technology so that the changing nature of educational programming and high tech – especially for filmmaking and the interactive media fields -- would be accommodated for 100 years. Urban Design provided the floor plans for unique and informal meeting places in hallways that are wired for laptop computer connection and for viewing on flat-screen monitors. Classrooms are equally equipped with technology, but with touch pads for accessing a range of input devices, as well as the school's server where edited projects and other digital and film items are stored.

All technology originates in the sub-level by design. This ensures that, as older technology gives way to newer, the changes are not disruptive to classrooms, screening rooms or hallway tech coves. To ensure that technology does not factor into the arrangement of a classroom or movement of people in that classroom, the wiring runs in hidden ducts at ceiling level around the parameter of the room.

Fact Sheet

Project:
The School of Cinematic Arts (Phase 1)



Owner:
The University of Southern California

Major Donor:
The Lucasfilm Foundation

Architect:
Urban Design Group, Dallas, Texas

Contractor:
Hathaway Dinwiddie, San Francisco, Calif.

Dates:
Groundbreaking Oct. 4, 2006; occupied Jan. 11, 2009; and dedicated March 2009

Structure:
Cast-in-place frame with light steel interior structure and plaster exterior

Style:
Mediterranean Revival

Description:

The four-floor structure with one sub-level floor equals 137,000-square-foot of space (123,000 square feet of it interior). This building is the site for the administrative and much of the instructional functions of the school. It consists of offices, eight classrooms, three large-format mixing labs, 23 conference rooms, four screening rooms, a 70-seat theater, a 100-seat theater, a 200-seat theater, a 700-square-foot exhibition space and a 200-seat indoor/outdoor café. The cost is $72 million, plus $6.6 million for furnishings and equipment.

Use:
The school serves students seeking undergraduate and advanced degrees in film, television and interactive media. Currently, 1,500 students, 300 faculty members and 135 staff members use the building.

Delivery method:
Traditional method of owner-directed project with USC and major donor the Lucasfilm Foundation serving in partnership as "owner," but with integrated delivery features through extensive BIM collaboration by all project team members.

Technology:
Fully integrated multimedia capabilities in all classrooms and large conference rooms, plus wireless computing environment for network and Internet access

Sustainability:
The architect designed the building to meet LEED Gold status by using eco-friendly materials, systems and methods. These include a heating and cooling system using radiant panels; building orientation for optimized ventilation, heat control and indoor lighting; high-efficiency windows for managing the comfort level of seasonal heat gain or loss and for daylighting; and energy-saving elevator systems. The structure is expected to achieve a 30 percent greater reduction in energy use than required by the prevailing 2005 Title 24 Energy Code of California.

Phase 2:
The second phase, currently under way, calls for a 36,000-square-foot instructional building, a 9,500-square-foot soundstage, a 9,200-square-foot soundstage, and an 8,450-square-foot soundstage. This will provide more space for animation, post-production, wardrobe and makeup, equipment storage and set design, as well as four sound studios. Completion of Phase 2 is set for 2010.