



3. PROJECT BACKGROUND

Gallaudet University is a prominent place of higher learning that caters to the deaf and hearing impaired. This university has served the deaf community since Congress and President Abraham Lincoln founded the college in 1864 in Northeast Washington DC. Despite its history, construction of the James Lee Sorenson Language and Communication Center (SLCC) is arguably most important building project for Gallaudet University to move into the 21st Century.

For the first time the Departments of ASL and Deaf Studies; Communication Studies; Government and History; Hearing, Speech, and Language Sciences; Linguistics; and Sociology will be housed under one roof. Research, therapy, hearing aid services, and classes within the SLCC will serve the deaf community for years to come.

Dr. I. King Jordan, President of Gallaudet University from 1988 until 2006, expressed the importance of this collaboration. He said "The idea of the building is fantastic, because that building will pull together all of the different disciplines that study deafness from all of the different points of view. We'll now be meeting each other in the hallways and the faculty lounges doing collaborative research. Nothing like that is happening anywhere in the world. And it can only happen at Gallaudet. So it's really going to change the way we do research and study deafness and understand deaf people." (Jordan)

Dr. Jane Fernandez, chair of the building committee, expressed the design and function of the facility as "the first of its kind really in the world. It's visu-centric architecture, which will fit the visual needs of deaf people. Also we have a variety of technology that will be incorporated into this building such as video...technology videoconferencing technology, which comes from the Sorenson Company, as well as technology in the classrooms that allow us to use videoconferencing from distant locations. Also, we have systems in place for people who use hearing aids. We also have visual media that allow deaf people to feel very comfortable in their surroundings in the new building. So we're looking forward so much to the completion of that building." (Fernandez)



3.1. ARCHITECTURE

SmithGroup has designed the SLCC to be a postmodernist addition to the Gallaudet University Campus. Drawing on elements from the surrounding historic buildings – particularly the university's hallmark Chapel Hall – the SLCC reflects the campus in its own modern language with a two-story, colonnaded classroom wing. A prominent atrium with two main entrances serves as a beacon, gathering space, and circulation space for occupants and visitors (Figure 3.1, Figure 3.2).



Figure 3.1: Rendering of SLCC North Entrance (SmithGroup).



Figure 3.2: Rendering of SLCC Atrium (SmithGroup).

The design adapts to the “visu-centric” way of being within the deaf culture. Vibrant colors and bold text and signage direct occupants throughout the building. Perimeter walls of the atrium are configured to maximize transparency, visually connecting the atrium with the surrounding spaces. A Deaf History Time Line features prominently in the atrium exhibiting milestones within the history of deaf culture. Other elements of this “visu-centric” design include glass elevators, seating in circles, doors with transparent windows, and visual doorbells.

The facility is configured in an articulated rectangular plan arranged around a central enclosed atrium. The south and east corners of the rectangle form a three-story ‘L’ shaped structure housing faculty offices, computer labs, acoustically sensitive research spaces, and support spaces. The western side of the atrium features a two-story wing extending north. This portion of the SLCC houses classrooms, a media studio, conference rooms and multi-purpose spaces.



3.2. BUILDING SYSTEMS

The SLCC relies on the effective operation of its building systems to efficiently shelter occupants and allow them to function in a comfortable environment. These systems include:

3.2.1. STRUCTURAL SYSTEM

The structural system of the SLCC above grade is primarily composed of W-shape structural steel columns and beams with open web trusses. Floors above grade are constructed of composite light weight concrete floor slabs on a composite metal decking and are supported by the open web trusses. The lateral force resisting system of the SLCC is a combination of braced frames and moment connections.

The foundation system of the SLCC consists of 30 in. to 72 in. diameter concrete caissons that support perimeter grade beams. The basement floor is composed of a 6 in. reinforced concrete slab on grade, while above slabs on grade are 5 in. reinforced concrete. Foundation walls are typically 12 in. reinforced concrete walls.

3.2.2. ELECTRICAL SYSTEM

Electrical service is distributed from the utility throughout campus via the Central Utilities Building. Power for the SLCC is tapped from under the street behind the facility and directed to a 15KV-480/277V, 3 phase, 4 wire pad mounted transformer located adjacent to the new building. From here, a ductbank leads to the main electrical room in the basement and feeds a 480/277V, 3 phase, 4 wire, 2000A switchboard. Closets on each floor contain a 480V panelboard for lighting and mechanical loads, a 480-120/208V transformer, and 120/208V panelboards for receptacle loads.

Emergency power is provided by a 300KW diesel generator. 480/277V, 3 phase, 4 wire emergency power is directed to three automatic switches; one switch is for life safety loads such as fire alarms and egress lighting, one for elevator power, and one for miscellaneous emergency loads.

3.2.3. LIGHTING

The deaf community relies on visual communication much more than the hearing population. Therefore the SLCC design adapts to this "visu-centric" way of being. Lighting is notably important in this goal and the lighting design of the SLCC includes unique features to address it. For instance, all spaces without portal windows in the doors will be equipped with visual doorbells. These devices turn off lights above doorways when the doorbell is pressed to alert a deaf occupant.

Exterior lighting is intended to draw visitors towards the central atrium and to highlight the varying textures of the façade. The frequency and brightness of the lighting – from both exterior and interior illumination – increase closer to the main atrium entrances. Also, the brightest space in the SLCC is the focal atrium. Metal halide downlights illuminate the pathways leading to the entrances and metal halide in-grade grazing uplights feature the texture of the brick façade and reflectance of the zinc siding.



3.2.4. PLUMBING

One major design goal of the SLCC is to reduce water use by 30%. In order to do this, design elements include waterless urinals, dual-flush toilets, and automatic sensors on sinks. Domestic water service is provided from a street main with a backflow protection device and booster pump. A dual coil steam/electric water heater with a 225 gal capacity produces domestic hot water. All graywater drains to street sanitary sewer systems. Storm water drains directly from the roof through rain leaders inside the building and is directed to street storm drains.

3.2.5. FIRE PROTECTION

A wet pipe sprinkler system serves the occupied portions of the building. Fire alarms consist of audio horns, strobes and combination devices. An annunciator panel with building graphics and an LED screen is located at the ground level east entrance to the atrium.

Finally, three (3) 15,000 CFM atrium smoke exhaust fans are linked to the fire alarm system and evacuate smoke from the large atrium space. A negative pressure within the atrium draws air from the exterior and adjacent spaces, thus limiting a fire and smoke from spreading outside the atrium.

3.2.6. CONSTRUCTION

The SLCC will be delivered to the owners at Gallaudet University with a design-bid-build method. The project was put out for bid in September 2006 following completion of the contract documents. Protests at the campus in the Fall 2006 Semester delayed the committee's selection of a general contractor. A contractor was selected by the end of November 2006 and the planned project completion date is now August 2008. Heery International will serve as the construction manager.