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## PARAPLEGIA NEWS

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A photograph of a man in a wheelchair moving through a large, brightly lit airport terminal. He is wearing a brown jacket and blue jeans, and has a brown bag resting on his lap. He is looking directly at the camera. In the background, other people are walking, and the terminal's architecture features a high, arched ceiling with a series of skylights. A sign for 'CRABTREE' is visible on the left side of the terminal.

# *Airport Access*



# Meeting the Challenge

by Carol Peredo Lopez, A.I.A.

photos by Bill Fitz-Patrick

Reagan Washington National Airport's new terminal is designed for accessibility, not just complying with codes.

**C**esar Pelli, a world-renowned architect, designed Ronald Reagan Washington National Airport's new Terminal B/C.

This substantial addition to the venerable 1940 and 1958 terminals is where the majority of airline operations now take place. Other major Pelli projects include Malaysia's Petronas Towers, currently the world's tallest structures, and Loeb Art Museum, at Vassar College, New York.

When asked about his design approach for the complex National Airport project, Pelli said, "We presented three concepts and took ideas from all three to combine them into a fourth one. We designed it in model form. This way we were able to study three-dimensional implications, including light."

Successful airport design requires integrating layers of complex systems into a functionally unified solution. In this project, for example, the architect combined three different transportation modes. The new airport successfully connects terminals, a subway station, and private vehicular elements including parking lots and vehicle drop-off points.

Inside a major regional airport, the objective is to accommodate passengers at all stages of travel, whether they are leaving or arriving. For example, Pelli tried to make all vertical transportation elements easy to find.



Daniel Feil (left), Airports Authority staff architect, gave PVA staff a tour of the facility.

Pelli says, "The idea is not to look at it as providing convenience. It is making it convenient to use."

The new terminal design was completed at about the same time the Americans With Disabilities Act (ADA) and the Air Carrier Access Act (ACAA) were enacted. At that time, most architects and designers were still learning about accessible design. Before ADA, airport design was subject to Section 504 of the Reha-

bilitation Act (1973). These requirements were generic in nature and not widely enforced. ACAA specifically addressed specialized airport facilities such as ticket counters. ADA focused on airport public accommodations, including path of travel, rest rooms, and retail facilities. It also brought national attention to accessibility.

Pelli says his firm has always taken accessibility very seriously. In practically





Ticket counters have flip-open panels, providing a lowered writing surface for wheelers.

every public building project they design, Pelli's architects meet with disability groups to discuss accessibility issues.

"Everyone in our firm is aware that the more we talk with users, the better we understand what we can do," Pelli explains. "We design from the beginning with the intention of making it accessible. It is not a question of complying with codes."

The task of designing a large, complex project demands that every detail be resolved in an organized manner. For example, a domed ceiling module is an important design element in the airport terminal. The 45-foot x 45-foot domes fill the interior with natural light from an "oculus" in a manner similar to

**Every public phone bank has at least one accessible phone.**



the Pantheon's dome in ancient Rome. Light from these modules provides an interior space evenly lit with refracted daylight. The repetitive modular dome pattern also organizes the space structurally, supplying order and clarity to the terminal's large, complex interior.

## WAYFINDING

Architects use circulation diagrams as a design aid to analyze how people would navigate through a large facility. "Wayfinding" is a more detailed circulation technique using visual clues to help guide patrons through a building. For example, to improve wayfinding for patrons with visual impairments, the new terminal has dark floors that contrast with the light-colored walls. Directional wayfinding information can also be provided through signage, but more successful projects also accomplish this through clarity of space and a systematic organization of functions.

Airport environments are saturated with visual information regarding wayfinding, flight scheduling, and even commercial advertising. In Washington's new terminal, different types of visual information are carefully formatted for clarity and function. Signage for retail



facilities, for example, is presented differently from passenger information. To assist people with visual impairments, cassette tapes with descriptive information are available at information booths.

All new terminal entrances and drop-off areas are wheelchair accessible. Within the airport terminal, vertical movement is convenient because of a multitude of circulation systems. The levels within the terminal are carefully organized for efficiency and passenger convenience. Passengers, for example, can be dropped off at the third level and proceed directly to the check-in counters. The second level connects to public parking, the subway, and the original terminals. Therefore, passengers need not cross vehicular traffic to reach their parked cars or the subway station. The lower level includes baggage claim and passenger pickup.

The new terminal also includes features specifically for travelers with disabilities. Ticket-counter panels flip open to provide a lowered writing surface for wheelchair users. Attendant-care toilet facilities are located in each terminal area. Although most travelers now carry cellular phones, public and helpline phones are conveniently located throughout. Every phone bank has an accessible phone. If a site has only one phone, it is fully accessible.

## SERVICES AND FACILITIES

Other accessible features include the following:

◆ **Public telephones.** A Telecommunication Device for the Deaf (TDD) phone and at least one wheelchair-accessible telephone are located at every public phone bank. All telephones are equipped with volume control, are hearing-aid compatible, and have braille and raised numbers. At least one telephone in each bank is equipped with a shelf and outlet.

◆ **Public address and information systems.** A visual paging system and an audible public-address system broadcast airport information to the general



Public information system monitors are low enough to allow wheelchair users to easily track arrival, departure, and gate information.

public. Within the waiting areas, visual announcements of boarding information appear on monitors. Flight information display system boards and baggage information display system units are located throughout the terminal.

◆ **Accessible counters.** Every ticket-counter location has built-in, pull-down writing shelves to assist patrons using wheelchairs. Each position is equipped with a TDD outlet, and a TDD phone is available for use at

the ticket counter upon request.

◆ **Passenger pickup.** Dedicated parking areas for pick up of arriving passengers with disabilities are located curbside at the baggage-claim level. Public telephones are located on the curbside, and each phone is equipped with TDD.

◆ **Wheelchairs.** Arrangements for a wheelchair in any of the terminals can be made through the airlines or with any skycap at the airport.





Baggage carousels are low and flat, facilitating luggage retrieval from a wheelchair.

♦ **Elevators.** Elevators are equipped with raised braille buttons and are fully accessible to wheelchair users. An electronic voice announces the arrival at each floor.

♦ **Parking.** Parking garages are directly across from the terminal and provide parking spaces for individuals with disabilities. The garages are van accessible. Baggage carts are available near all garage elevators. Two elevated, covered, and environmentally controlled pedestrian bridges provide direct access from the parking garages into the Concourse level of the new airport terminal. In the remote lots, spaces are located next to each airport shuttle-bus shelter.

♦ **Ground transportation.** New vehicles in the airport's shuttle-bus fleet have wheelchair lifts. Patrons with physical disabilities may park in parking lots or garages and use a specially equipped courtesy van at no charge. Vans are also

available for use between all airport locations, upon request. In parking lots, booth attendants will arrange for this transportation upon request. Parking garages have information pylons containing intercoms that may be used to request assistance. An intercom is available at the subway elevator.

♦ **Subway.** Passengers arriving at the airport via subway may take the subway station's elevator down one level and proceed through a covered walkway to a climate-controlled pedestrian bridge. Baggage carts are available upon exiting the subway system. For more details, look for the *Visitor's Guide for Patrons with Disabilities*, available at all airport information counters.

During construction, Airports Authority representatives met with a number of disability groups, including the Para-

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lyzed Veterans of America (PVA), to discuss the new terminal's accessibility issues. Recently, PVA architects and advocacy staff met with Airports Authority architect Daniel J. Feil, F.A.I.A., to tour the facility.

Feil indicated that airport management continues to improve passenger-service accessibility. For example, they are currently working on digital boards to describe recent passenger regulations. For instance, new airport security measures require that no passenger stand up in an airplane during the first or last 30 minutes of flight when departing from or arriving at Reagan Washington National Airport. Previously, this was only announced audibly. People with hearing impairments couldn't hear these announcements and, in some instances, stood up in the plane. The airport is working to correct this situation and to provide printed messages in the LED-type message boards throughout the terminal.

Airport accessibility is a design challenge because of the long travel distances, the interface between transportation modalities, and the constantly changing sensory information. It takes a clear design vision and meticulous attention to detail to make a functional and attractive architectural environment. In his impressive design for Reagan Washington National Airport's new terminal, Pelli has achieved this goal and a new level of passenger accessibility.



Cesar Pelli, FAIA



## Barrier-Free America Award

Every year, PVA honors an individual for outstanding contributions toward a barrier-free environment. Bob Vila was the previous recipient of the Barrier-Free America Award for his ongoing efforts to increase public awareness of accessible home design. Cesar Pelli, F.A.I.A., is PVA's 2003 award recipient for the accessible architecture of Ronald Reagan Washington National Airport. (The award is pictured left.)

Pelli's work runs the gamut from residential to large commercial projects, including the tallest buildings in the world, the 1,483-foot Petronas Towers in Malaysia. In 1977, he

became dean of the School of Architecture at Yale University and established Cesar Pelli & Associates in New Haven, Conn. Pelli's work has been widely published and exhibited, with eight books dedicated to his design and theories.

In 1995, the American Institute of Architects (AIA) awarded Pelli its gold medal. In 1991, AIA selected him as one of the ten most influential living American architects. In 1989, AIA awarded Cesar Pelli & Associates its Architecture Firm Award. Pelli has received more than 100 awards for design excellence.