



## Background

The George E. Bello Center for Information and Technology is the cornerstone of a \$50 million renovation to the Bryant College campus, in Smithfield, Rhode Island. The building stands two stories high, containing 72,000 square feet of useable space. The building houses the school's library, a reception area able that can accommodate up to 400 persons, a cyber-café, classrooms, as well as other multi-purpose spaces. The creation of the building was with the intent to cater to the needs of the school's students, and to keep them up-to-date with technological advances in the world. The landscaping around the building helps to make the George E. Bello Center the focal point of the entire Bryant College campus.





## Background



The modern design of the Bello Center was made with the intention of integrating building systems together to create more of an efficient building. The curtain wall enclosing the school's library was created with south and east facing windows that allows natural light to be used inside the building, creating savings in electrical costs, as well as heating costs in the winter months. Windows are widely used throughout the building to allow for both natural light to enter, as well as creating comfortable environments that allow the occupants to look outside, as there are views to the outside in every direction. During the night time hours, the windows help accentuate the form of the building.

The building's construction followed a design-bid-build progression. It took four years to design and build, costing nearly \$26 million. The design phases of the building started 18 months before the beginning of construction. The only limitations related to the construction of this building stemmed from those already present from the school regarding the integration of new buildings in the campus.

The building is supported by a composite steel system, where wide flange beams interact with the 2-1/2" concrete slab on 3" metal deck. The slab is reinforced with 6 x 6 – w1.4 x w1.4 WWF. There is an ordinary, partially-restrained moment frame that is typical at all beam-to-column connections. Cementitious spray-on fireproofing provides the fire protection for this structural system. The mechanical equipment is woven through beam penetrations. Each of these openings is supported by plate stiffeners.

Mechanically, the George E. Bello Center is supported by a VAV re-heat system with three roof top air handling units. Each air handling unit contains preheat, cooling, and reheating coils that help condition the air for the building. The preheat coil heats the air up to 75° F, which is relatively high in comparison with most mechanical systems that preheat to only 50 - 55° F. There are additional reheating coils in the individual spaces of the building. Air handling units 1 and 2 supply air in the building at 53° F, while #3 supplies air at



## Background

54° F. The building also employs the use of a variable primary chilled water distribution system. Radiant heating panels provide heat to the larger spaces in the Bello Center, such as the Grand Hall and the Reading Room.

The power for the George E. Bello Center comes through 3 – 4/0 wires carrying 15 kV of power from an existing manhole. The power is fed through a dry-type  $\Delta$ -Y transformer that steps the power down to 480/277V, and lead into a 1200 amp, 480V switchboard. The switchboard spreads the power through the building to different panelboards, the air-handling units, other step-down transformers, and the automatic transfer switch that senses the need for emergency power. The emergency power for the Bello Center is supplied by a 150W generator.