



HISTORY REPORT 2010-2011

By Roger Leshier

BEARDSHEAR HALL



Beardshear Hall, ca. 1906¹

Iowa State College

Beardshear Hall replaced Old Main, after a series of fires destroyed Old Main. Both buildings originally held the entire college, including classrooms, the library, chapel, museums, dining hall and was the residence hall of the facility and students.

Old Main

Old Main began in 1858 but could not start construction until the in 1864 when money became available following the Civil War. From the very beginning Old Main was plagued with construction issues. The original architect was dismissed from the job after the first year. The second architect determined the foundation was unstable due to poor quality bricks, and ordered all the previous work

destroyed. Construction started anew in the spring of 1865. In 1882, a tornado damaged the south tower.

In 1900 a fire destroyed the entire north wing and much of the interior center section. The repairs were just completed when a fire struck the south wing and this time completely destroyed the entire building.



Old Main, 1876¹

Beardshear Hall

After the first fire in 1900 damaged north wing of Old Main, the principal building on Iowa State's Campus, discussion began about the construction of a new building. After the second fire completely destroyed the building, Beardshear Hall construction began in 1906 at the location of the destroyed building. The building was erected by Proudfoot and Bird Architects and finished in 1906 at a cost of approximately \$407,000.



Beardshear Hall, no date¹

Because of the fires in old Main, fire proofing was a high priority. Fire proof stones were used extensively in the construction. Massive scagliola columns were used in the interior.

The building was originally named The Central Building and originally housed of the President, the Departments of English, Mathematics, Botany, History, Modern Languages, and Elocution, the Office of the Secretary and Treasurer, and the Office of the Board of Trustees.

The Central Building was renamed Beardshear Hall, after William Beardshear, the president of the institution during the planning and construction stages of Central Building.

By the mid 1970s all classes in Beardshear Hall had been relocated to other buildings on campus, leaving the Office of the President and the Office of the Provost, and the Office of the Vice President for Business as the most prominent offices in the building. Other offices directly impacting student life still located in Beardshear hall include the Office of Student Financial Aid and the Office of the Vice President for Student Affairs.

Mechanical Systems

Originally Beardshear Hall was heated with steam and of course contained no mechanical cooling. Ventilation was achieved through both operable windows, and outside air brought into the basement through some louvers located low on the building. There was a central large paddle wheel fan, that would bring in outside air and pressurize the both the hot deck plenum or a cold deck plenum.

The each hot deck, cold deck plenum is about 4-feet high, are stacked and take up nearly the entire basement allowing only a few storage rooms and corridor located around the perimeter of the basement. Leading from each hot and cold deck is a series a chases. These chases contain a pneumatic control damper in both the hot deck and the cold deck. Each chase is dedicated and terminates at a diffuser located low on the wall in an individual space.

Heating

The air for the hot deck was preheated by steam coils in the outside air stream. Each individual room would then have a separate diffuser located high in the room and a chase that lead to the attic. If the room was cold it would proportionally open the hot deck and close the cold deck.

Cooling

As mentioned earlier, originally the building did not contain any mechanical cooling. Besides operable windows, if the temperature of an individual room was hotter than the outside temperature the system would open the cold deck damper delivering ventilation air to the space. Through natural ventilation the hot air from each space would rise through another dedicated chase from that space to the attic, there it would be relieved through gravity louvers.

Mechanical Renovations

In the early 1970's, mechanical cooling was added and heating was revised to most of the building in the form of fan coil units below the windows. The fan coil units, utilized hot water generated from campus staeam, and campus chilled water for cooling. Certain areas of the, most notably the President and Provost offices utilise a small dedicated air handling unit located in the basement, using the original hot/cold deck chase to deliver air to those respective spaces.

The most recent renovation began in July of 2000 by Brooks Borg Skiles a direct decendent of the original architect Proudfoot and Bird. In addition to office remodels, many life safety improvements including atrium smoke removal and the addition of combination fire and smoke dampers, were added.

The Future

Many of the original chases were utilized for other puropes, primarily as telecommunications and electrical chases, however it must be noted that a lot of original the system including the original paddle wheel fan is still in operation delivering ventilation air after over 100 years.

The concept of gravity or natural ventilation utilized over 100 years ago in Beardshear Hall is now being revitalized, used in modern low energy buildings. It is one of the simplest methods for obtaining ventilation air, in addition it it has the added advantage of free airflow. Again, the building community has come full circle, and the concepts used in this 100 year old building point toward the future.

References:

1. <http://www.fpm.iastate.edu/maps/building.asp?id=13>
2. <http://www.museums.iastate.edu/AOCFactSheetsPDF/Beardshear%20Hall.pdf>

