

Building Statistics

Part 1

Peggy Ryan Williams Center



Angela Mincemoyer
Structural Option
Dr. Boothby
Peggy Ryan Williams Center
Ithaca, New York
13 September 2013

Angela Mincemoyer
 Structural Option
 Dr. Boothby
 Peggy Ryan Williams Center
 Ithaca, New York
 13 September 2013
 Building Statistics – Part 1

General Building Data

<i>Building Name</i>	Peggy Ryan Williams Center
<i>Location & Site</i>	Ithaca, New York
<i>Building Occupant Name</i>	Ithaca College
<i>Occupancy</i>	Office Use
<i>Size</i>	58,200 square feet
<i>Number of Stories</i>	4 stories (all above grade)
<i>Dates of Construction</i>	Start Date: awaiting response from Christa Construction End Date: awarded substantial completion in March 2010; by November 2010, all work completed
<i>Actual Cost</i>	Construction cost was billed at approximately \$19.3 million.
<i>Project Delivery Method</i>	Design-Bid-Build

Project Team:

<i>Owner</i>	Ithaca College	www.ithaca.edu
<i>Architect</i>	Holt Architects	www.holt.com
<i>Structural Engineers</i>	Ryan-Biggs Associates	www.ryanbiggs.com
<i>Mechanical & Electrical Engineering</i>	Delta Engineers	www.deltaengineers.com
<i>General Contractor</i>	Christa Construction	www.christa.com
<i>Geotechnical Engineer</i>	CME Associates, Inc.	www.cmeassociates.com
<i>Landscape Architects, Planners</i>	Trowbridge & Wolf	www.twla.com
<i>Engineers and Surveyors</i>	T.G. Miller	www.tgmillerpc.com
<i>Energy Modeling</i>	Erdman Anthony and Associates	www.erdmananthony.com
<i>Environmental Design Consulting</i>	Atelier Ten	www.atelierten.com
<i>Audio, Visual & Acoustical Consulting</i>	AVL Design	www.avldesign.com
<i>Fire and Smoke Consulting</i>	John H. Klote	unavailable
<i>Geothermal Engineering</i>	Earth Sensitive Solutions	www.earthsensitive.com
<i>Lighting Design</i>	Naomi Miller Lighting Design	www.nmlightingdesign.com

Architecture

Traditionally, the Ithaca College campus does its best to follow the style of architecture that is contemporary with the time period. This characteristic may be seen in the neighboring buildings around campus which date back to the 1970's. With the global push towards sustainability, the college decided that it was important to show that Ithaca College was moving forward with the times, being eco-friendly, and wanting to incorporate their beautiful surroundings into the campus design. This led to a new era of architecture at Ithaca campus, beginning with the Park School of Business. After the Park School of Business was designed, the Peggy Ryan Williams Center was the next step in the process.

The Peggy Ryan Williams Center is a key aspect of fulfilling this new era because it is seen as a gateway to the college. Its occupants consist of the college's admissions as well as numerous administrative offices. The building is also one of the first views that may be seen upon arriving to the campus. Therefore, Ithaca College saw the building as a way to show prospective students, employees, and visitors that their college was moving forward to be more "green" and incorporate the surrounding nature.

The architecture of this building may at first seem a little obscure and jagged. However, the architects did not simply want the building to stand out from the rest. Numerous aspects of the appearance of the building were driven by their desire to be eco-friendly. The many large areas of glass are present in order to allow for breath-taking views of the nearby Cayuga Lake. By allowing the windows to be as large as possible, it also helps the buildings' occupants to feel as if they are a part of the nature around them.

View from the North



Photo provided courtesy of Holt Architects

Another feature of the Peggy Ryan Williams Center is the pedestrian bridge. The bridge allows its users to easily navigate from the PRWC to the Dillingham Center without going outdoors.

View from Southeast



Photo provided courtesy of Holt Architects

Major National Code: 2002 Building Code of New York State (BCNYS)

Zoning:

Maximum permitted coverage increase: 20%
Maximum building height: 76 feet
Zoning was governed by the town of Ithaca.

Historical Requirements:

No historical requirements were present.

Building Enclosure

Building Façades:

The façade of the Peggy Ryan Williams Center consists of five main materials: zinc panels, blue stone veneer, composite aluminum panels, limestone panels, and various types of glass. These materials can all be found on various parts of the building, some examples may be viewed below. In most cases, the exterior skin consists of cold-formed metal studs backing up insulated metal panel systems or limestone panels, where present. As seen in the photograph below, the building entails large areas of glass; these areas are either curtain walls or storefront windows. The glass curtain walls were stick-built on site, while the storefronts are panelized. The main difference between these two types is that the storefront generally spans 10 feet or less and the curtain wall may span further. The types of glass include annealed float glass, heat-treated float glass, sputter-coated float glass, wired glass, and laminated glass.



Photo taken on 07/29/13

Zinc Panels

Blue Stone Veneer

Composite Aluminum Panel

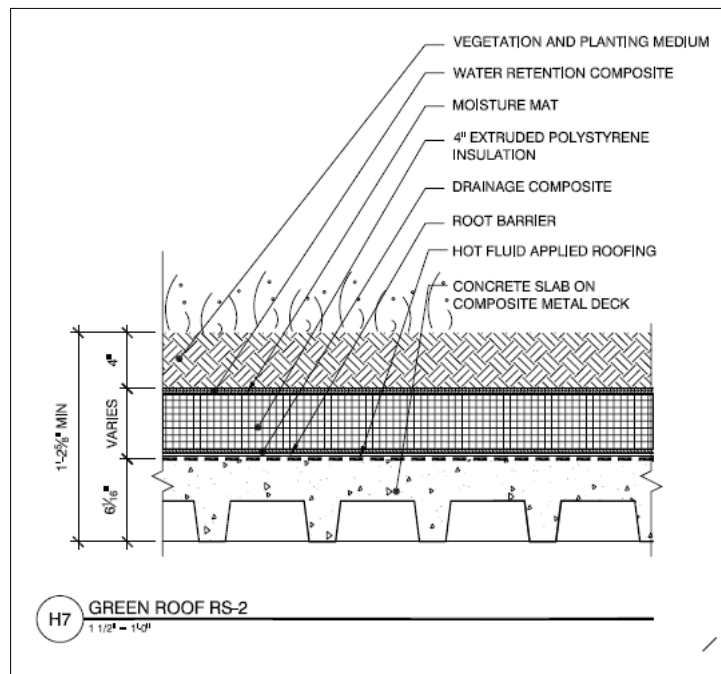
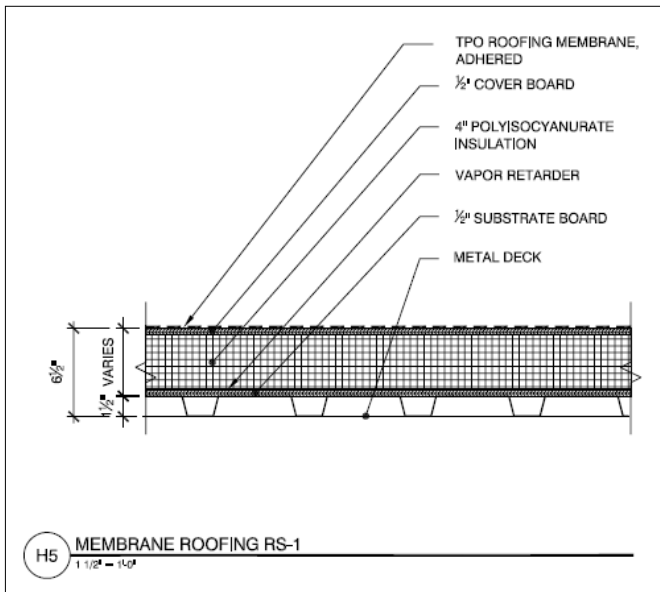


Photo taken on 07/29/13

Limestone Panels

Roofing:

There are two main roofing systems used for the Peggy Ryan Williams Center. Variations of the standard membrane roofing are the main type of system. As seen below, a 1/2" substrate board sits on top of the metal roof deck. This is then followed by a vapor retarder, 4" polyisocyanurate insulation, 1/2" cover board, and finally topped off with thermoplastic polyolefin (TPO) roofing membrane. The first floor roof is an intensive green roof which building occupants are able to go out and relax on while enjoying views of the Cayuga Lake. The green roof may be seen in the section view and pictures below. The main components of the green roof include hot fluid applied roofing, a root barrier, drainage composite, 4" extruded polystyrene insulation, a moisture mat, water retention composite, and finally vegetation and plating medium.



First Floor Green Roof



Photo provided courtesy of Holt Architects

Example of Green Roof Vegetation



Photo taken on 07/29/13

Sustainability Features

LEED Platinum is the prestigious title that the Peggy Ryan Williams Center was awarded. However, this title did not come without a lot of planning and sustainability considerations. As previously mentioned, most of the architectural appearance of the building was governed by sustainability. Some examples include the main roof taking on a slight “V” shape as to help collect rain water, the atrium being designed to help with natural ventilation, green roofs, geothermal heat wells, solar shading, and many large areas of glass to allow for day lighting.

Rain Water Collection:

As can be seen in the photo below, the roof forms a “V” in order to help promote rain water collection. The rain water will then be used throughout the building as a gray water supply. Because the building is designed in various ways to help with this rainwater collection (not just the “V” shape of the roof) the collection is able to provide 90% of the buildings annual water consumption.

“V” Shaped Roof



Photo taken on 07/29/13

Rainwater Collection

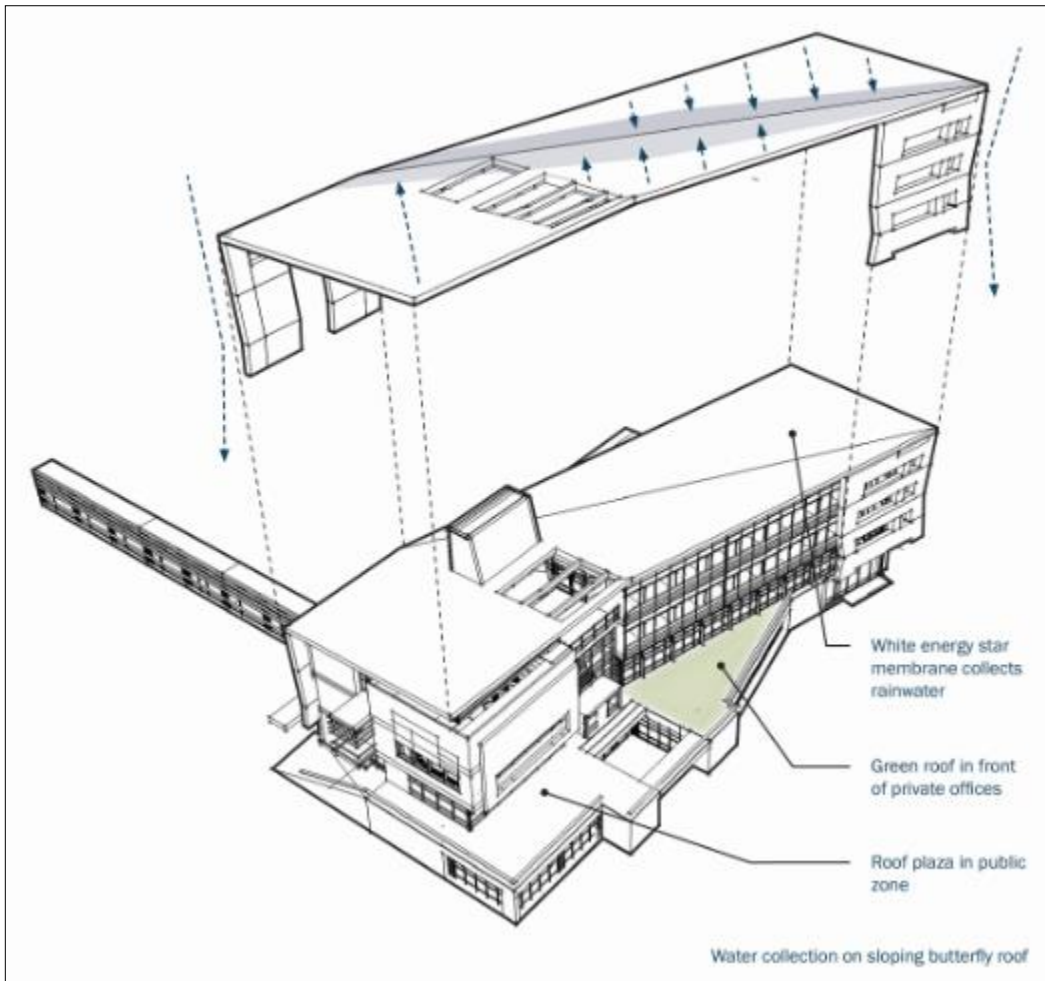


Diagram provided courtesy of Holt Architects

Day lighting:

Vast regions of glass allow for day lighting, thus resulting in a lower lighting load. The large atrium space within the core of the building also enables the natural light to reach further into the building.

Green Roof:

As previously mentioned, the first floor roof is a green roof. This region helps to reduce the amount of impermeable ground that the building footprint removed from the area. The green roof also provides a nice area for employees and visitors to relax, enjoy nature, and look at the beautiful Cayuga Lake.

Natural Ventilation:

The mechanical load is lessened by utilizing the natural ventilation capabilities of the large atrium. The air flow may be viewed in the following diagram.

Natural Ventilation

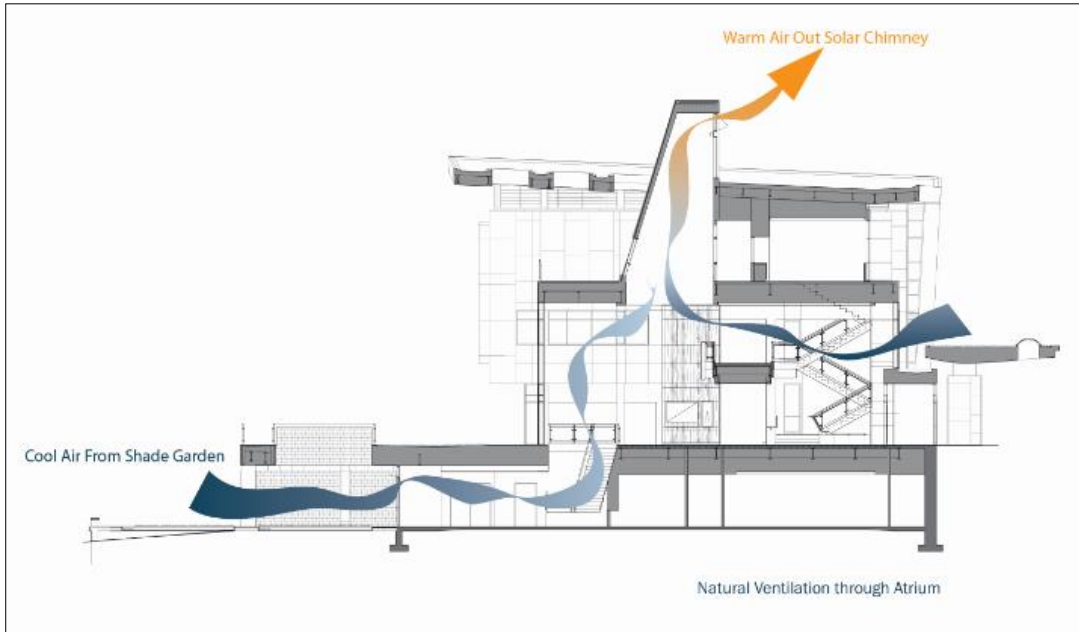


Diagram provided courtesy of Holt Architects

Solar Shading:

Solar shading elements may be seen on both the south and the west sides of the building. In order to help the occupants on the upper floors, the roof was extended to provide solar shading. Sunshades were also added to the building's south and west sides (these can be seen in the photo below).



Photo taken on 07/29/13