A guide to Georgia Tech’s sustainable buildings and infrastructure.

**Engineered Biosystems Building (EBB)**
- 218,000 sq. ft. bio-tech research
- 247,000 gal multi-building cistern system for toilets and irrigation
- Energy recovery systems and solar heating systems
- Reuse of existing lumber, "TreeCycling"

**Carbon Neutral Energy Solutions Lab. (CNES)**
- First Platinum level LEED Certification at Tech
- This 42,000 sq. ft. building is an example of the methods and technologies that can be implemented in future construction
- 20,000 gal cistern system for toilets and landscape irrigation
- Interactive Sustainability Dashboard

**Caddell Building**
- 11,000 sq. ft. with offices, student work areas, and flexible learning spaces
- Passive shading strategy allows 100% day lighted views of occupied spaces while minimizing heat gain
- Re-used existing concrete/steel frame structure
- Existing structural systems exposed as a Building Construction educational tool

**Clough Undergraduate Learning Commons**
- 230,000 sq. ft. LEED Platinum Building
- Intensive Green roof
- 360 solar panels producing approximately 85 KW
- 30 solar thermal panels to supplement the domestic hot water
- Roof water and condensate are collected for re-use
- 1.4 million gallon cisterns for toilets, irrigation and water for the Campanile Fountain
- Light monitors provide daylighting into its center
- "Daylight harvesting" system allows lighting to be turned off in public areas (corridors) when there is sufficient sunlight

**Sustainable features**
- Stormwater Management
  - Over 2.26M Gal Storage
  - Cisterns for Irrigation
  - Cisterns for Re-use, Irrigation, Infiltration
  - Infiltration Cells/Bio-Swale/Rain Garden
  - Photovoltaic (PV) Total 623 KW
  - Green Roof
  - Wind Power

*Buildings currently seeking LEED certification and anticipated to achieve levels as listed.
**Buildings with sustainable features were designed using sustainable practices however did not seek LEED certification.

<table>
<thead>
<tr>
<th>Certification</th>
<th>Total GSF</th>
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</thead>
<tbody>
<tr>
<td>Platinum</td>
<td>528,157 gsf</td>
</tr>
<tr>
<td>Gold</td>
<td>1,892,671 gsf</td>
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<tr>
<td>Silver</td>
<td>509,716 gsf</td>
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<tr>
<td>Certified</td>
<td>38,750 gsf</td>
</tr>
<tr>
<td>Sustainable features **</td>
<td>128.5 sf LEED Space/Student</td>
</tr>
</tbody>
</table>

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Landscape Masterplan Goals:
- Develop integrated, ecologically-based landscape and open space systems
- Enhance living, working and learning environment
- Unify the campus with a distinct sense of place
- Increase tree canopy—replace aging trees
- Create an Eco-Commons (80 acres)
- Implement ecological performance requirements of 50% reduction of storm water runoff

Eco-Commons Infiltration & Rain Garden

Sustainable Features
- Advanced Buildings Core Performance
  - Designed to the standards of the national standard
  - 33% water use reduction by use of low-flow fixtures
  - Toilets and sinks were converted to low flow fixtures resulting in a 27% reduction in potable irrigation
- Environmental features of an historic building
  - Much of the historic wood flooring was rehabilitated in place

Eco-Commons Overlay Diagram

The Campus Landscape Diagram

The Human Landscape

The Ecological Landscape

Klaus Advanced Computing Bld.
- 2006, Perkins + Will / W.G. Yates And Sons
- 120,000 gallon cisterns with rain gardens and infiltration resulting in 34% decrease in rate and quantity of runoff
- High-performance glazing, shading, daylighting, occupant-sensor controlled and daylight-responsive lighting

Glennd & Towers
- 2016 Renovation, VMXN/ Steve & Wilkinson/New South Construction
- 8,000 gal cistern connected to Britannia and Madridium system providing irrigation
- Replaced windows to increase building efficiency
- Installed energy efficient lighting

Historic Academy of Medicine
- 2012 Renovation, Dunwoody Beeland/Chris Sheekalis Cnosti, Original design, Philip Shutze
- Through adaptive reuse the building was saved, educational and architectural features were preserved, and the spaces were renovated to accommodate a wide variety of educational and social events

Hinman Building
- Improved energy performance by more than 20% of baseline in ASHRAE 90.1, while protecting the character defining features of an historic building
- Maintained 75% of the existing structure

Old Civil Engineering Building
- 2009 Renovation, Turner/Barber Caudle & Herftell / Juneau
- 6,500 gal cistern as part of a 30% reduction of stormwater runoff from site pre-renovation levels
- 96% of the existing building walls, floors and roof elements were maintained in the renovation

Stephen C. Hall Building
- 2012 Renovation, Smith Dalas Architects, LLC / Hogan Construction
- 10,000 gal cistern collecting stormwater for irrigation
- Replaced windows to increase building efficiency
- Upgraded mechanical systems
- Installed energy efficient lighting

Ken Byers Tennis Complex
- 2012, Woldport/New South
- 33% water use reduction by use of low-flow fixtures
- Designed to the standards of the Advanced Buildings Core Performance Guide for enhanced efficiency
- 90% of spaces have outdoor view (excluding courts)

Scheller College of Business
- 2003, Hastings & Chivetta Architects - DPR Construction
- 16.5% more energy-efficient than the national standard
- 13th LEED certified project in US and 2nd in GA since system was launched in 1998

Marcus Nanotechnology Building
- 2006, Colin Czybinski Jackson/Wither Turner
- Included an 80,000 gal cistern that is being connected to the campus stormwater masterplan system

McCamish Pavilion
- 2012 Renovation, Populous/MAKE/Whiting Turner/ Design/Contracting
- Over 80% of existing structural walls floors and roof were reused
- Maintained historic dome structure

Zelnak Basketball Practice Facility
- 2009, HEDY International/Baron Malow
- The first LEED Gold certified women’s softball facility in the country
- 42,000 gallon cistern under its playing field is large enough to irrigate 1.5 inches per week for 3 weeks, eliminating the need for potable irrigation

Mewborn Field
- 2009, Rosser International/Barton Malow
- The first LEED Gold certified women’s softball facility in the country
- 42,000 gallon cistern under its playing field is large enough to irrigate 1.5 inches per week for 3 weeks, eliminating the need for potable irrigation

North Avenue Apartments and Dining Hall
- 2008, panorama, Evans, Wright, Vlatos & Memfis / Junuex Construction
- Extensive green roof on dining hall
- Food waste collected/composted by a local composter, diverting 33.5 tons of food waste yearly from landfills
- Largest LEED EB O&M Gold university housing complex

Chapin Building
- 2014 Renovation, Land Rock Surgeon/Lusk Construction
- Original Iron Beam
- Reconstructed main elevator
- Retrofitted 1910 inspired grand staircase
- Updated mechanical systems
- Much of the historic wood flooring was rehabilitated in place

Fitten, Freeman, Montag
- 2009, Donohue, Collins, Cooper, Causey/Winter Construction
- 8,000 gal cistern for irrigation/toilets
- Converted buildings to dual flush toilets and low flow fixtures
- High efficiency semi-instantaneous boilers distribute domestic hot water and hydronic heating to 3 buildings

Joseph B. Whitehead Student Health Center
- 2001, Land Rock Surgeon/Withing Turner Construction, Minor Interior Renovation by Boomer; Snow - JSP Construction
- Innovative use of controlled daylighting
- Toilets and sinks were converted to low flow fixtures resulting in a 27% reduction in potable water use

Campus Recreation Center
- 2004, Renovation, Hastings/Chivetta Architects Constructors Company - Shankar
- Two 1,500 gallon cisterns
- 340 kW PV installation was the largest installation of its type when it was constructed. A solar thermal system is used to heat the pool to 78°F.

Mason Building
- 2013 Renovation, Cooper Cary/Perkins + Will / Balfour Beatty
- Removed asbestos containing materials
- Replaced windows to increase efficiency
- Upgraded mechanical systems to improve energy efficiency
- Installed new energy efficient lighting