## FY15 Sustainability Progress Report
### Climate Action: GHG Reduction

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<tr>
<th>Departments Responsible</th>
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<tbody>
<tr>
<td>AEC</td>
<td>260</td>
<td>GG Brown Mechanical Engineering Addition - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Completion targeted for September 2014</td>
</tr>
<tr>
<td>AEC</td>
<td>389</td>
<td>New School of Nursing building - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Aug-15</td>
</tr>
<tr>
<td>AEC</td>
<td>395</td>
<td>Taubman Health Service Library Renovation - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Aug-15</td>
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<tr>
<td>AEC</td>
<td>396</td>
<td>Munger Graduate Residences - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Sep-15</td>
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<tr>
<td>AEC</td>
<td>398</td>
<td>Earl V. Moore School of Music Addition - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Dec-15</td>
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<td>AEC</td>
<td>399</td>
<td>Stephen M. Ross School of Business Kresge Renovation and New Academic Building - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Jun-17</td>
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<tr>
<td>AEC</td>
<td>400</td>
<td>Biological Science Center - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Dec-17</td>
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<tr>
<td>AEC</td>
<td>401</td>
<td>Transportation Management and Operations - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Jun-17</td>
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<tr>
<td>AEC</td>
<td>402</td>
<td>Taubman College of Architecture and Urban Planning - Taubman Wing - seeking LEED Silver certification</td>
<td>Seeking LEED Silver certification.</td>
<td>LEED Certification provides a high sustainability standard for new buildings</td>
<td>Jul-17</td>
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<td>AEC</td>
<td>406</td>
<td>P8904-Hatcher Harlan Graduate Library South : Remove the existing seven windows located in the south entrance lobby and replace with new glass block.</td>
<td>P8904-Hatcher Library maintenance work on existing building.</td>
<td>Ongoing maintenance</td>
<td>Summer 2015</td>
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<td>AEC/UPE</td>
<td>408</td>
<td>P6275Palmer-Fletcher Interconnection: Shift a portion of Dental load to more cost-effective chiller at Palmer via an interconnection. Rackham-Dentistry Interconnection: Shift a portion of Rackham load to more cost-effective chiller via an interconnection.</td>
<td>$3,000,000 cost anticipated. Construction is complete. Rackham has been served from Dental since April 2015. Dental Palmer interconnect has be opened since July 2015. Plant/UPE continues commissioning effort.</td>
<td>Energy reduction is anticipated</td>
<td>Complete</td>
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<td>Graham Sustainability Institute, Student Group</td>
<td>415</td>
<td>Solar-Powered Workstation: 2014 winner of funding from Planet Blue Student Innovation fund</td>
<td>Solar-Powered Workstation ($25,000 pending): Students for Clean Energy will be implementing two solar-powered workstations, one on both North Campus and Central Campus, in order to create an outdoor study space that allows electronics to be charged via green, locally-sourced technology.</td>
<td>Reduce energy use from charging electronics. Workstation will provide power via Solar energy.</td>
<td>FY 16</td>
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<td>Plant Ops: Energy Management Office</td>
<td>366</td>
<td>Utility Reduction - Thermal Energy</td>
<td>Total Estimated Thermal Energy Reduction = 5652.2 MMBtu/year, 5 thermal energy ECM's completed and closed</td>
<td>Estimated reduction of GHG by 372.75 MTCO2/year</td>
<td>On-going</td>
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<tr>
<td>Plant Ops: Energy Management Office</td>
<td>367</td>
<td>Utility Reduction - Electrical Energy</td>
<td>Total Estimated Electrical Energy Reduction = 1,200,956 kWh/year, 25 electrical energy ECM's completed and closed</td>
<td>Estimated reduction of GHG by 559.4 MTCO2/year</td>
<td>On-going</td>
</tr>
<tr>
<td>Plant Ops: Energy Management Office</td>
<td>370</td>
<td>Utility Reduction - Water</td>
<td>Total Estimated Reduction of City Water Consumption = 4206.7 CCU/year, 18 water reduction ECM's completed and closed</td>
<td>Reduced City water consumption</td>
<td>On-going</td>
</tr>
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<td>Plant Ops: Plant Building and Grounds Services</td>
<td>354</td>
<td>Emissions reductions goal for Plant Operations: Plant Building and Grounds Services</td>
<td>All equipment now meets or exceeds Tier IV emissions standards.</td>
<td>Air pollution reduction</td>
<td>Complete</td>
</tr>
<tr>
<td>Plant Ops: Utilities &amp; Plant Engineering</td>
<td>56</td>
<td>FY13 B&amp;F Strategic key initiative #7.1.2: Complete Central Power Plant gas turbine feasibility study. Expand use of University produced electricity vs. purchased electricity. (Natural gas fuel results in lower emissions than coal or fuel oil.)</td>
<td>Economic analysis completed. Conclusion recommended the installation of a 15MW Combustion Turbine capacity at U-M.</td>
<td>140,000 tons of Co2 estimated mitigation per year</td>
<td>Site planning in progress. Approval from Regents expected early Spring 2016. Anticipated completion Fall 2018.</td>
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<td>Plant Ops: Utilities &amp; Plant Engineering</td>
<td>201</td>
<td>Central Power Plant Solar collector</td>
<td>In May 2014, Utilities hired an individual from the installation company to correct the programing and get the unit back in operation. Collector is still not working.</td>
<td>Utilization of renewable energy</td>
<td>Pending</td>
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<td>Plant Ops: Utilities &amp; Plant Engineering</td>
<td>303</td>
<td>BAS (Building Automation System) network and software upgrades</td>
<td>Building Automation networks have been restructured to align with FM region assignments. These networks serve all BAS monitored facilities (144). Configuring all networks to high speed Ethernet protocol continues. Software upgrades continue as needed. All computer equipment has been moved to dedicated network VLAN’s. Increased network speed and reliability will improve BAS’s effectiveness at implementing programs such as building equipment fault detection</td>
<td>Network reliability and throughput is increased, affording greater capabilities for monitoring, trending, and optimizing building systems.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Plant Ops: Utilities &amp; Plant Engineering</td>
<td>352</td>
<td>BAS (Building Automation System) Development of Energy Management Resource Center</td>
<td>Creating an Energy Management Resource Center for the purpose of integrating BAS, Controls, Plant Engineering, Regional Energy Managers and others in order to maximize/utilize the full capabilities of the BAS and associated direct digital control analytics. Project would involve automating DDC control language to continuously re-commission building HVAC systems. Vendor selection for continuous re-commission computer software has been completed. Project will include an 8 building pilot to prove energy savings/cost avoidance. Pilot projected implementation phase to begin soon.</td>
<td>Energy reduction/cost savings. Improved maintenance effectiveness</td>
<td>Ongoing</td>
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<td>Procurement Services</td>
<td>244</td>
<td>New vending machines to have LED lighting</td>
<td>As new machines are placed on campus, LED lighting will be part of the machine specifications/As machines become outdated replace with new models.</td>
<td>Reduced energy consumption and waste material from equipment service.</td>
<td>Process started with replacement s in FY11. Process will take multiple years to complete.</td>
</tr>
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<td>Sustainable Computing</td>
<td>346</td>
<td>Implement environmental sustainability measures in new IT services. Implement power management settings in 100% of computers managed by the MiWorkspace service. Include environmental sustainability components in other new services as they are designed and implemented.</td>
<td>MiWorkspace desktop and laptop computers have sleep settings deployed by default. Units moving to MiWorkspace undergo a printing assessment, resulting in recommendations to reduce the number of printers, instead deploying highly scalable multi-function devices. During MiWorkspace transition, servers run by units are evaluated and, if possible, moved onto virtual servers in the private cloud (U-M provided service), reducing the amount of power needed to provide services and reducing the amount of ewaste generated by deploying hardware servers. MiWorkspace has rolled out to administrative units and is currently rolling out to academic units.</td>
<td>Reduce energy use from campus computers. Promote awareness of sustainable computing practices</td>
<td>The MiWorkspac e project continues through FY 2016.</td>
</tr>
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<td>UM Hospital</td>
<td>278</td>
<td>Implement energy conservation measures to reduce utility consumption in existing buildings.</td>
<td>From previously completed ECM projects and operational optimization, UMHC BTU/SF energy performance in FY15 improved by 2% when compared to FY14.</td>
<td>Energy reduction from building efficiency projects</td>
<td>Ongoing</td>
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