



# Typical Elements of a Retrofit Project

Retrofit projects involve replacing or upgrading an existing building's energy equipment and systems with new, more energy efficient, equipment and systems. A typical retrofit includes four principal components:

	Description	Examples
<b>New Equipment</b>	Repair, replace and/or upgrade key energy consuming equipment that drives lower energy consumption for the same output	<ul style="list-style-type: none"> <li>* Heating, ventilation, and air-conditioning (HVAC) upgrades</li> <li>* High efficiency boilers and furnaces</li> <li>* High efficiency lighting</li> <li>* Heat recovery devices</li> </ul>
<b>New Controls</b>	A system applied to equipment that reduces energy usage by ensuring equipment is only running when needed	<ul style="list-style-type: none"> <li>* Lighting sensors</li> <li>* Variable speed drives on motors and pumps</li> <li>* New building automation and HVAC controls</li> </ul>
<b>Integrated Design</b>	An engineering approach that addresses the combined impact of multiple replacements/upgrades of both equipment and control systems	<ul style="list-style-type: none"> <li>* Combining upgraded energy efficient equipment, air sealing, moisture management, controlled ventilation, insulation, and solar control</li> </ul>
<b>Active Energy Management</b>	Installation of software that continue to monitor and manage the performance of the upgraded systems and inform the relevant people when faults are identified	<ul style="list-style-type: none"> <li>* Detect/predict building faults</li> <li>* Identify further savings opportunities</li> <li>* Report on energy usage outside of contractual limits</li> </ul>