

The Shopping List of Green Ideas

Below is a shopping list of ideas and technologies, which can help to make your building green. They have been arranged into three categories. Bleeding Edge technologies are a tough sell. Generally they are difficult to make payback, and in some cases a bit experimental. This doesn't mean you shouldn't try them, just that it takes a motivated owner. The second category has been labeled "Usually Economically Sustainable" and they usually are. Items in this category should always be considered and tested for applicability. In most cases they make sense for your building. The third category is labeled "Should be Standard Practice". These items should be in every building designed today. Unfortunately many are not, usually because a short sighted owner sees only first cost, or because a designer doesn't understand them.

Bleeding Edge Technologies

- [Photo-voltaics](#)
 - [Climate Façade](#)
 - [Green Roof](#)
 - [Fuel Cells](#)
 - [Wind Power](#)
 - [Geothermal Heat Pumps](#)
 - [Rainwater collection](#)
 - [Solar Domestic Hot Water heating](#)
 - [Alternative Fueling Facility \(Parking and recharging for electric vehicles\)](#)
 - [On-Site biological waste treatment \(Living Machine\)](#)
 - [Natural Ventilation](#)
 - [Radiant Ceilings or Slabs](#)
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Usually Economically Sustainable

- [Indoor Air Quality \(IAQ\) management plan](#)
- [Encourage use of recyclable materials in specifications](#)
- [Where possible, specify minimum recycled content in materials](#)
- [Encourage use of local materials where practical](#)
- [Building to be LEEDTM Certified](#)
- [Contractor shall have construction waste management plan](#)

- [Daylighting](#)
 - [Lighting controls – daylighting controls](#)
 - [Building purge cycle controls](#)
 - [Heat recovery](#) for pre-treatment of outdoor air
 - [Thermal Storage at Plant](#)
 - [Gas driven or Steam driven chillers](#)
 - [Thermal Storage in building mass](#)
 - [Permanent air monitoring system](#)– demand controlled ventilation
 - [Grey water system](#)
 - [Evaporative Cooling](#)
 - [Measurement and Verification](#) – shall comply with DOE International Performance Measurement and Verification Protocol for Energy and Water Consumption.
 - [Smart building](#)
 - [Displacement Ventilation](#)
 - [Displacement Ventilation utilizing raised floor](#)
 - [Chilled Beams](#)
 - [CFD Modeling of HVAC System Performance](#)
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Should be Standard Practice

- [Exceed energy code requirements for building envelope](#)
- [Light colored roof](#)
- [Use environmentally friendly refrigerants](#)
- [Maximize use of "free cooling" – airside and waterside economizers](#)
- [Variable frequency drives for pumps, fans and compressors](#)
- [District Steam vs. Boilers](#)
- [Water conserving cooling towers](#)
- [High Efficiency Lighting](#)
- [Dry type transformers instead of oil or gas type](#)
- [Lighting controls – occupancy sensors](#)
- [Water conserving fixtures](#)
- [Building Energy Management System](#)
- [Building Commissioning](#)
- [Avoid use of CFC or HCFC based fire suppression systems](#)
- [Computer Modeling](#) and Life-cycle analysis of all proposed technologies
- [Utility Company Rebates](#)

[*The Green Engineer Home*](#)

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