

## **WBRC Architects · Engineers 2030 Challenge: Sustainable Action Plan**

### **General**

1. Establish brand/logo for WBRC Architects · Engineers, coordinate with Marketing Committee.
2. Lunch and Learns are provided through the office. A minimum of one lunch and learn per quarter will be identified. Have very new building or major renovation project undergo a green building evaluation whether it is seeking certification or not. Paperless documentation will be encouraged for Project Submissions, Construction Documents, and Submittals.
3. Use an integrated design process that promotes early involvement of stakeholders and engages in a collaborative design process.
4. Specify local or regional materials wherever feasible to support local businesses and to reduce environmental costs related to the transportation of products.

### **Site**

1. Maximize recycle process material on site; utilize demolished masonry and concrete as fill on site where feasible.
2. Utilize planting that is native and climate appropriate to reduce or eliminate the need for irrigation.
3. Replace removed trees on a one to one basis. Transplant trees when possible.
4. Review building orientation on all projects to maximize solar orientation where possible.
5. Provide rain water irrigation.
6. Utilize developed portion of site prior to new areas.
7. Recycle bituminous pavement on all sites. .
8. Provide LED light source for site lighting.
9. Make provisions for transportation alternatives (i.e., bike, electric auto).
10. Exceed standard for open space requirement by 10 percent.
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12. Utilize recycle products for site products (i.e., drainage pipe, fabric etc.).

### **Structural**

1. Maximize recycled content in steel.
2. Encourage the use of locally harvested FSC certified lumber.

### **Architectural**

1. Improve indoor air quality (IAQ) for occupants and installers by specifying products that are low emitting.
2. Reduce the amount of construction waste generated on all projects by promoting on site recycling of construction materials (target diverting more than 80% and review this target regularly for possible increase).

3. Specify recycled materials wherever feasible to assist with the reduction of natural material extraction and to promote an improved marketplace for recycled products allowing the further improvement of the waste stream.
4. Reduce the overall environmental impact of construction by promoting the reuse of existing buildings and promote the salvage existing building components wherever feasible.
5. Harvest and control available daylight to reduce electric lighting needs and provide a natural connection to the outdoors allowing for proven productivity increases and comfort for our building project occupants.
6. In conjunction with improved day lighting and energy performance, specify high efficiency glazing for improved performance at the building envelope.

## **Interiors**

1. Recommend and specify the best flooring materials for each individual project type. Flooring selections to be made with all of the following in mind: initial product manufacturing process (including location and raw materials), durability and longevity, maintenance and end of life reclamation opportunities. Appropriate quantity and quality of walk off entrance grilles and matting to be provided for all projects, to improve indoor air quality by trapping and reducing pollutants from occupied spaces.
2. Promote and maximize use of modular casework and furniture systems to allow maximum flexibility and reduce potential construction waste for future space modifications.
3. Furniture recommendations based on environmentally sustainable materials and manufacturing processes.

## **MEP**

1. Reduce client fuel & electrical consumption. Specify the highest efficiency heating and cooling equipment available and design air and water HVAC systems to operate as efficiently as possible at full load as well as part load. Size equipment with regard to the thermal envelope performance, do not oversize equipment. Target a minimum of 20% savings from current ASHRAE 90.1 standards. Review target for possible increase in future.
2. Reduce water consumption thru the installation of ultra-low water use fixtures. Maintain a 40% or higher reduction in water use on all projects. Review target for possible increase in future.
3. Reclaim gray water and/or rainwater for use in the building. Utilizing gray water/rainwater for flush fixtures only provides lower first cost. Look for opportunities to implement this technology. Ideal projects would be clients with high water/sewer expenses with high process water use (meaning lower filtering requirements).

4. Improve building indoor air quality through increased and controllable ventilation. Utilize 100% outside air ventilation systems where applicable to reduce total air handler air volume. Utilize high efficiency displacement ventilation to deliver air to occupants at breathing level. Provide opportunity for occupant adjustments such as CO2 control with demand controlled ventilation, variable air volume systems for individual zone control, and occupant override capabilities.
5. Incorporate alternative energy systems such as solar thermal heating, geothermal, or photovoltaic systems where possible. Generating heating hot water on site with solar thermal heating can be tied into new or existing hot water boiler plants. Alternate energy systems should be looked at for all projects and the pros and cons discussed with the client to determine if they meet the needs of the intended occupants, and pursued if deemed feasible. These systems typically have increased first costs, but also have attractive return on investments.
6. Utilize high efficiency lighting and provide dimming control and occupancy switches where applicable. Reduce light power densities (watts per square foot) for all projects below current ASHRAE 90.1 standards. Utilize highest efficiency ballasts and lamps available, including T5 & T8s as well as emerging LED technology when appropriate. Take advantage of architectural daylight by providing continuously dimming lighting systems which reduce light output when adequate natural light is available. Provide occupancy sensors in spaces (such as toilet rooms, storage rooms) which are infrequently occupied to shut off lighting when not required.
7. Utilize solar hot water heater systems. All projects with sizable domestic hot water requirements should include solar hot water heating systems as an alternate bid item at minimum. All clients should be involved in a discussion of the benefits of solar thermal. Target fuel savings should be around 30-40%. Review target for possible increase in future.