

## AIA 2030 Commitment: map lab Sustainability Action Plan

### **KEY PLAN:**

In Process - **IN DEVELOPMENT**

In Planning Stages - **TO BE DISCUSSED**

Implemented In Full - **ON GOING**

Not Feasible Currently

### **Identify Sustainability Team**

Within two months of signing the commitment the firm will establish a team or leader to guide the development of the firm's sustainability efforts and implementation of its commitment plan.

### **Immediate Operational Actions**

Within six months of signing the commitment, the firm will implement a minimum of four operational action items from the list provided. These actions will be undertaken while the long-term sustainability plan is in development.

#### *Office Energy Use*

- Track and report energy use in the office
- Install occupancy sensors in meeting rooms and other common spaces
- Procurement of Energy Star rated equipment and appliances
- Institute office-wide policy of shutting down computers when leaving the office
- Replace any existing CRT monitors with LCD monitors
- Replacement of incandescent lamps with fluorescent (OR LED when feasible)
- Establish a timeline for ultimately purchasing 100% green power

#### *Waste Reduction and Supplies*

- Reduce paper consumption by using electronic documents and forms
- Reduce paper consumption by implementing printing policies (i.e. printing double-sided, print drafts on discarded paper)
- Institute a firm-wide recycling policy
  - Institute a firm-wide composting policy
- Implement policies for purchasing environmentally friendly office supplies
- Implement policies for purchasing environmentally friendly kitchen supplies
- Implement policies for purchasing environmentally friendly cleaning supplies
- Implement policies for purchasing environmentally friendly office furniture (most of our furniture is reused)

#### *Transportation*

- Incentives for employees who ride share, walk, or bike
- Establish a policy for fuel efficient rental cars for firm travel
- Establish a policy for offsetting firm travel (carbon off-setting plan)
- Encourage telecommuting options for employees

#### *Meeting Procedures*

- Use of paperless technology for agendas, handouts, and presentations
- Encourage virtual meetings when possible
- Establish an environmental policy to share with venues, vendors, and attendees for meetings
- Encourage meeting participants to coordinate travel plans and share rides from the airport

## **Sustainability Action Plan**

Within one year of signing the commitment, the firm must develop a long range sustainability action plan that aligns with the stated 2030 benchmarks for achieving **carbon neutrality**. While action plans will differ from firm to firm, a successful sustainable action plan should address the following aspects:

### **Develop Sustainable Design Goals**

Set quantifiable design goals for every project regardless of whether required by the client.

- Design projects to reduce the amount of fossil-fuel based energy used to align with 2030 goals
- Reduce the amount of potable water used in all projects
- Improve the indoor air-quality (IAQ) through the elimination of hazardous materials used in all projects
  - *this does bear delving further into issues such as while the use of CFL's reduces energy use the bulbs give off GHGs as well as contain mercury that without proper disposal plans becomes a toxic landfill issue.*
- Have every project undergo a green building evaluation what the project is seeking certification or not.
- Document all projects in the case study format with consistent criteria to help measure performance and progress.
  - a Healthcare Client (energy "audit") - [http://www.map-lab.com/lab\\_blog/2010/5/18/sustainability-and-energy-audits.html](http://www.map-lab.com/lab_blog/2010/5/18/sustainability-and-energy-audits.html)
  - a major University focused technology with progressive/innovative space layout needs
  - a genetics laboratory with progressive/innovative lab layout needs

### **Institute Staff Training and Education**

- Ensure staff is invested in the firm's sustainable design goals and can contribute to the success.
- Determine a minimum amount of staff training and education on sustainable design issues
- Provide support for staff to attend conferences and education programs focusing on sustainable design programs
  - we are not only attending conferences but giving talks at these conferences about programs we are implementing
- **Implement programs** that recognize individual and team sustainable design contributions
  - *this seems unnecessary at map lab. we all pull together and are not too big for efforts to be lost. everyone is expected to explore and integrate their ideas into projects as best its available.*

### **Evaluate the Design Process**

Engage in a design process that is multidisciplinary, collaborative, goal-oriented, and metric driven:

- Use an integrated design process that promotes early involvement of stakeholders and engages in collaborative design process.
- Use life-cost analysis and consider the life-cycle effects of the materials and systems in a project.
- Develop metrics for sustainable design goals at the outset of the project. Green building rating systems such as LEED or **Living Building 2.0** or Green Globes can be a useful tool.
- Develop consistent measurement standards for building and site design performance.
- Create feedback procedures to gather information about building performance that include such things as meters, sensors, controls, and post-occupancy evaluations.

### **Sustainable Operations**

Develop a sustainable operations plan that sets goals aimed at reducing the negative impact of firm operations related to:

- **BASELINE Office Energy Use**
  - map-lab's (occupying 28% of co-habitated space) office space energy use in 2010 = 22,106 kWh (at \$ .089/kWh = \$1,967.44) @ 28% = **6.190 kWh \*(share of use)**
  - Emissions factor for New England = 0.908902 lbs CO2/kWh
  - 22,106 kWh x 0.908902 lbs CO2/kWh = 20,093 lbs CO2 emitted
  - Space total of 20,093 lbs CO2 = 9.2 metric tons CO2 @ 28% = **2.6 metric tons CO2**

- (1 Metric Tonne = 2,204.6 Pounds)
  - Our actual energy consumption is much less than this due to behavioral expectations that include:
    - EQUIPMENT - all desktops and printers are Energy Star compliant
      - also it is policy that shutting down all machines at the end of the workdays is mandatory.
    - LIGHTING - an almost complete lack of necessity for the office lighting due to the substantial access to daylighting for all employees.
      - Summer lighting needs is ZERO (during normal 8-10 hour work day)
      - Winter lighting needs is around 2 hours/day and its generally at-desk task lighting
    - HVAC - our office has no air-conditioning system apart from a central building-distributed heating (via iron hydronic radiators at window wall)
      - Substantial ocean breezes through the operable windows render a select few days where warm-month comfort levels approach less than ideal
      - Ceiling fans were installed in 2010 to alleviate the tougher warm days.
    - HOT WATER - Currently the office has an under-counter point-of-use HW heater for the kitchen sink and a bottled water system (that provides hot and cold water) that require electricity.
- **Waste Reduction and Supplies**
  - we have sustainability integrated into our daily operations:
    - a day-lit office reduces wear on lighting thus reducing supply needs
    - energy-efficient workstations, lowers heat and plug loads
    - reduced printing strategies, less resource needs (inks, paper)
    - use of recycled materials (paper, et al)
    - minimization of non-recyclables, including lunch items such plastic utensils
    - use of non-toxic goods (i.e. cleaning products)
    - substantial recycling and composting program
- **Transportation**
  - we take seriously the minimization of our carbon footprint by taking advantage of our access to and heavy use of public transportation (ONLY 1 OF 4 employee drives to work the rest take public transportation)
  - when driving is necessary we have used car share programs such as Zip Car
- **Meetings**
  - we have conducted many meetings for a variety of projects and presentations via Skype and GoToMeeting as a standard of practice.
  - we use file sharing web sites such as Dropbox for the distribution of materials for projects ranging from Vancouver BC, New York City, Haiti, and Panama.
  - use of Google Aps not only cuts costs from the overhead of business operations but also reduces the need for shipping software packages to the firm as well as being able to share/edit files across the various consulting team members.

### **Develop a Business Strategy**

Develop a business strategy that communicates why a sustainable design approach is important and why the firm is qualified:

- **Put together information that supports the value of the firm's sustainable design services (include information on projects costs, operating costs, and occupant satisfaction)**
  - our approach has ALWAYS been to be a resource for information as teachers as well as practitioners.
    - we explore and research the latest publications and progressive thinking in the areas of architecture, urban design, technology, and offer commentary through our blog, social media, as well as our speaking opportunities. This not only allows us to integrate the latest thinking into our projects but serves to engage other professionals in a dialogue that perpetuates professional growth beyond our firm.
    - We are educators as well. Our core team actively teaches at institutions such as The Boston Architectural College, Wentworth Institute of Technology, Northeastern University, Rhode Island

- School of Design as well as many professional and community group conferences.
- Through proactive assessment and action, we work to educate our employees, colleagues, and even our clients on methods of improving operational performance and lessening impact on the environment. This is rooted in our research conducted in the areas of transportation, water and energy use, and indoor air quality, right down to things like office consumables.
  - Some clients need approve what is to be discussed outside of the project still.
  - Develop marketing materials that highlight the sustainable design aspects of the firm: define the design philosophy; list accredited staff; highlight benefits of sustainable design, etc...
    - Our website and marketing materials have been completely revamped to reflect the strides the firm takes and its credentials. It is also interactive and dynamic, in that information updates multiple times a day.
  - Make your sustainable actions and operations available to clients
    - This goes for excluding items by understanding the complete needs of the client as much as it would be for integrating “green items”! The integration of systems that require ongoing maintenance and a sophistication of use understanding (complicated controls) that add to operations costing, even if it saves energy, when an open window would suffice.