AIA+2030: Professional Training for the Sustainable Design Work Force

AIA Albuquerque in collaboration with the New Mexico Architectural Foundation will bring the AIA+2030 Professional Training Program to New Mexico in 2012. AIA Albuqueque is the program managing partner in charge of the program implementation.

INTRODUCTION

A program of the American Institute of Architects Seattle in collaboration with Architecture 2030, AIA+2030 trains greencollar workers in the architecture and engineering fields to design buildings that use 60% less energy.

The AIA+2030 Professional Series™ is a comprehensive, ground-breaking curriculum that includes ten, 4-hour sessions teaching strategies to reach 60% reduction in fossil fuel greenhouse gas emissions. AIA+2030 gives design professionals the knowledge and leverage to create next-generation, super-efficient buildings and provide firms with the skills that will set them apart in the marketplace.

The AIA+2030 Professional Series™ was developed by AIA Seattle in partnership with Architecture 2030, Betterbricks and the City of Seattle. The AIA+2030 program was launched in Seattle in 2009, and has been extremely successful.

GOALS

Buildings produce almost half of US greenhouse gas emissions. In fact, US buildings are responsible for 10% of total greenhouse gas emissions. Buildings are an important part of the climate change solution. Training architects and engineers to significantly reduce the energy use of their buildings is a critical step on the path towards energy independence and climate change reduction.

- Impact climate change: give architects and design professionals the tools they need to design for the future of the planet
- Position architects: demonstrate the leadership of the architecture community on energy efficiency and carbon issues
- Support continued R&D: expand AIA+2030's reach and resources to fuel continual improvement

THE PLANNING COMMITTEE

To comply with the course requirements for the AIA+2030, AIA Albuquerque has formed a planning commitee comprised of architects and engineers comitted to the reduction of greenhouse gases and to address energy efficiency and carbon issues. The committee is charged with identifying speakers that can effectively deliver the knowledge and tools nedded to meet the 2030 Challenge.

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AIA+2030 Committee Chair
UNM School of Architecture and Planning

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AIA+2030 PROFESSIONALTRAINING PROGRAM IN 2012 + 2013

In order to meet the program needs and to better serve sustainable design workforce AIA Albuquerque is planning to straddle the program between 2012 and 2013. This schedule will benefit architects required by law to accrue education credits for licensing. This means that participants will obtain 20 HSW, SD and LEED credits each year.

We are currently in the initial planning stages and will have detailed information on our web site www.aiaabq.org as soon as it is available. **If you have any question please contact AIA Albuquerque Executive Director Cecilia Portal at 505-242-9800 or by email director@aiaabq.org**

TEN SESSIONS SUMMARY

Session I: The 2030 Challenge: setting + achieving energy goals with integrated design™

Integrated design is an important element in the creation of next-generation 2030 Challenge compliant buildings. In this session, we will explore the Integrated Design Process (IDP) and Integrated Project Delivery (IPD). We will explore collaborative strategies that can achieve the targets outlined in the 2030 Challenge, and how this process can be used as a roadmap throughout the design process. In particular, we will examine the utility of IDP in defining core, early design decisions such as building form and orientation.

Session II: Getting to 60: the power of targets + load reduction™

The goal of the 2030 Challenge® is to create buildings that are designed to meet a fossil fuel, greenhouse gas emitting, energy performance standard of 60% less than the regional (or national) average for that building type now, with the standard rising to a 70% reduction in 2015 and incrementally increasing 10% in efficiency every five years until 2030, when the goal of zero emissions is met.

One of the more compelling aspects of dramatic energy reductions is the mounting evidence that if done well, such ambitious goals can actually be done with little or no added costs. This session will explore the use of EPA's Target Finder (ENERGY STAR) to establish design targets and metrics, such as Energy Use Intensity (EUI). The session will include multiple examples of projects that have achieved exemplary energy performance, offer approaches for incorporating targets into the design process, and explore how providing targeting and EUI information can be a value-added service for design firms.

Session III: Accentuate the positive: climate responsive design™

Conventional building design presumes that a building's energy will be imported in the form of electricity and fuel. Integrated design accounts for on-site resources, as well as minimizing unwanted environmental conditions. In this session, we'll explore using climate data and site characteristics to conduct a Site Resource Inventory to inform building design and lower building energy loads. This will set the stage for future sessions that will address specific strategies in more detail.

Session IV: Skins: the importance of the thermal envelope™

The building skin is the critical interface between occupant comfort and outdoor climatic conditions. A high performance building requires a high performance envelope, one that responds to exterior environmental impacts at various times of the year. This session will explore design, material and technology approaches to wall and window assemblies, from straightforward low cost methods to advanced double skinned wall applications. We will also address moisture issues associated with various wall insulation approaches.

Session V: Aggressively passive: employing passive systems for load reduction™

Properly designed, a building captures existing resources such as light, wind, and solar radiation to provide for the comfort and needs of occupants. Passive systems work in concert to allow the building to manage energy demand through design. This session will build on the concepts introduced in Sessions 3 and 4 to flesh out a holistic strategy to designing passive systems.

Session VI: Illuminating savings: daylighting and integrated lighting strategies™

Lighting constitutes 29 percent of a typical American office building's energy load. Proper lighting is also critical to occupant comfort and productivity—and an exploration of daylighting and efficient artificial lighting is and of itself an exploration of integrated design. This session will explore the nature of natural light as part of a site's resource inventory, and identify strategies for maximizing access to beneficial light while controlling for glare and unwanted heat gain. It will couple this discussion with the latest research and application of artificial lighting choices designed to meet residual lighting needs.

Session VII: Right-sized: equipment and controls for superefficient building system™

After designing for maximum passive use of site resources and mitigating energy loads, the next step to a breakthrough building is properly sized equipment and employment of advanced controls. This session will explore the concept and application of designing and specifying equipment and controls for buildings that are already designed to take care of themselves, and need mechanical intervention only during periods of peak demand. Systems such as hybrid natural-mechanical ventilation systems and other approaches to engineer the mechanical system to be as small (efficient) and effective as possible will be explored.

Session VIII: Site power: renewable energy opportunities™

The ultimate goal of the 2030 Challenge is fossil fuel free buildings by the year 2030. As buildings approach zero for their carbon footprint, on-site renewable energy sources become a key element to the strategy. As the lower up-front cost conservation and efficiency measures are exhausted, renewable energy emerges as the final step to reaching aggressive carbon elimination goals. This session will explore the relationship between conservation and renewable energy, and explore current renewable energy opportunities, both onsite and offsite systems, such as combined heat and power and local district energy (valuable for load sharing).

Session IX: The hand-off + staying in shape: operations, maintenance + education™

Design intent is important, but at the end of the day, how the building actually performs is really what matters. The closer the match between predicted and observed performance, the more likely a client will be happy. This session will explore the tools available to an architect to help match performance with expectations, including building commissioning, maintenance staff and occupant training, and building performance monitoring. Using building performance data to validate and improve on design and construction decisions will also be explored—providing a strong tool for iterative learning and innovation.

Session X: Putting it all together: achieving 2030 goals on the project and at the office™

Success with advanced energy performance projects requires not only a detailed understanding of the individual strategies involved, but also a strategic understanding of the architect's role in the design and construction process and how to orchestrate an already dauntingly complex process. This session revisits the integrated design and target creating process, and then looks outward to contextualize the architect in the larger environment of the project and—equally important—the firm. Key to the success of the 2030 Challenge is movement from learning to action. This session will examine the movement from in-class exercise to on-site implementation. Additionally, the session will provide tools for helping your firm institutionalize the creation of high-performance buildings and becoming a change agent within your community.

For information on the AIA+2030 Professional Training in New Mexico contact
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