



FACT SHEET

INTEGRATED DESIGN

INTEGRATED DESIGN is a technique that engages the design team early in the decision making process to identify systems that can be integrated to achieve short and long-term cost savings, resource efficiency, and an all-around better building. The goal is not simply to build a building; rather it is to build a building that is functional, efficient, appealing, and valuable long into the future. Integrated design ensures that all of these goals are met in the most cost-effective way.

DEFINITIONS

Eco-charrette, n. a collaborative planning process.

LEED

THE LEED CREDITS THAT CAN BE OBTAINED THROUGH AN INTEGRATED DESIGN PROCESS ARE LIMITED ONLY BY THE NUMBER OF CREDITS POSSIBLE.

BETTER OUTCOMES

Why design and pay for redundant systems, when you can achieve better results at a lower price? An integrated design team will utilize synergies between individual building systems to create truly high-performance results.

At Portland State University in Portland, OR, the integrated design team for Epler Hall developed a system to capture 26% of the rainwater from it and an adjacent building, to use for flush water and irrigation. The University expects to harvest 230,000 gallons of water for this system.

The design partners at Evergreen State College in Olympia, WA used natural ventilation and thermal storage to reduce construction costs of the mechanical system by 40% and annual maintenance costs by 25% compared to traditionally designed HVAC systems. The outcome is a building with indoor air quality higher than what code requires and LEED Gold certification.



Eco-charrettes are effective ways of promoting integrated design, such as this one for the San Gabriel River Discovery Center. Photo courtesy of Green Building Services.

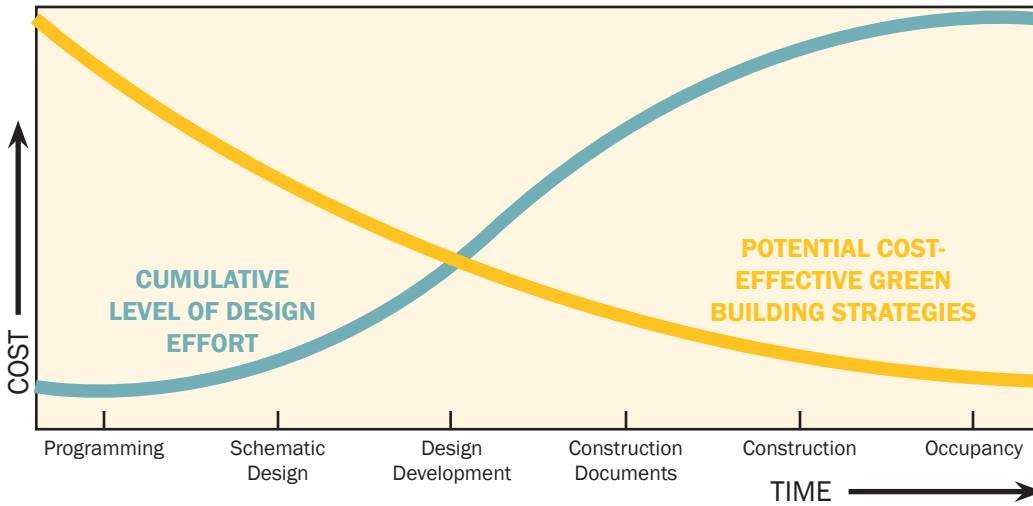
PROCESS

Decision making is accomplished jointly throughout all design phases, which does not increase design fees, but reduces them thanks to avoided redesign in later phases. Key partners may include owner, architect, engineers, facility manager/operator, contractor, commissioning agent, landscape architect and even building occupants.



DESIGN STRATEGIES

When identified early in a project, green building strategies can be incorporated into a project successfully and at a lower cost than if they are incorporated later in the design process.



CASE STUDY

CENTER FOR HEALTH & HEALING AT OREGON HEALTH AND SCIENCE UNIVERSITY'S RIVER CAMPUS

The Center for Health & Healing dispels the myth that high-performance buildings cost more. The project aims to be the first LEED Platinum building in Oregon and everyone involved will credit one factor over all others: an integrated design process. The building has 12 integrated design features including a rainwater/groundwater reclaim system that provides cooling to various building elements and water reuse to plumbing fixtures, integrated exhaust systems, and the concrete structure itself is used to store energy

and moderate temperatures in the building. The results compared to conventional building systems include a 61% reduction in energy use, a 56% reduction in potable water demand, and reduced CO₂ emissions equivalent to taking 5,000 cars off the road. These results were realized at \$3.2 million under the initial mechanical and electrical systems budget of \$30 million, which is a 10% cost reduction. Annual operating cost savings are estimated to be \$660,000 per year.



A ROADMAP FOR SUSTAINABLE BUILDING

RESOURCES

THE FOLLOWING RESOURCES SERVE AS A STARTING POINT FOR A LARGE QUANTITY OF AVAILABLE INFORMATION:

THE NATIONAL CHARRETTE INSTITUTE

www.charretteinstitute.org

WHOLE BUILDING DESIGN GUIDE

www.wbdg.org/design/sustainable.php

FOR MORE INFORMATION ON THIS TOPIC AND OTHERS, VISIT

www.cascadiagbc.org

Total Project Budget: \$145.5 million

Building Size: 400,000 sq ft (16 stories)

Intended Use: Physician practices, outpatient surgery, wellness center, labs, and educational space

Location: Portland, Oregon

OHSU photos courtesy of Interface Engineering
Photographer: Sally Painter

