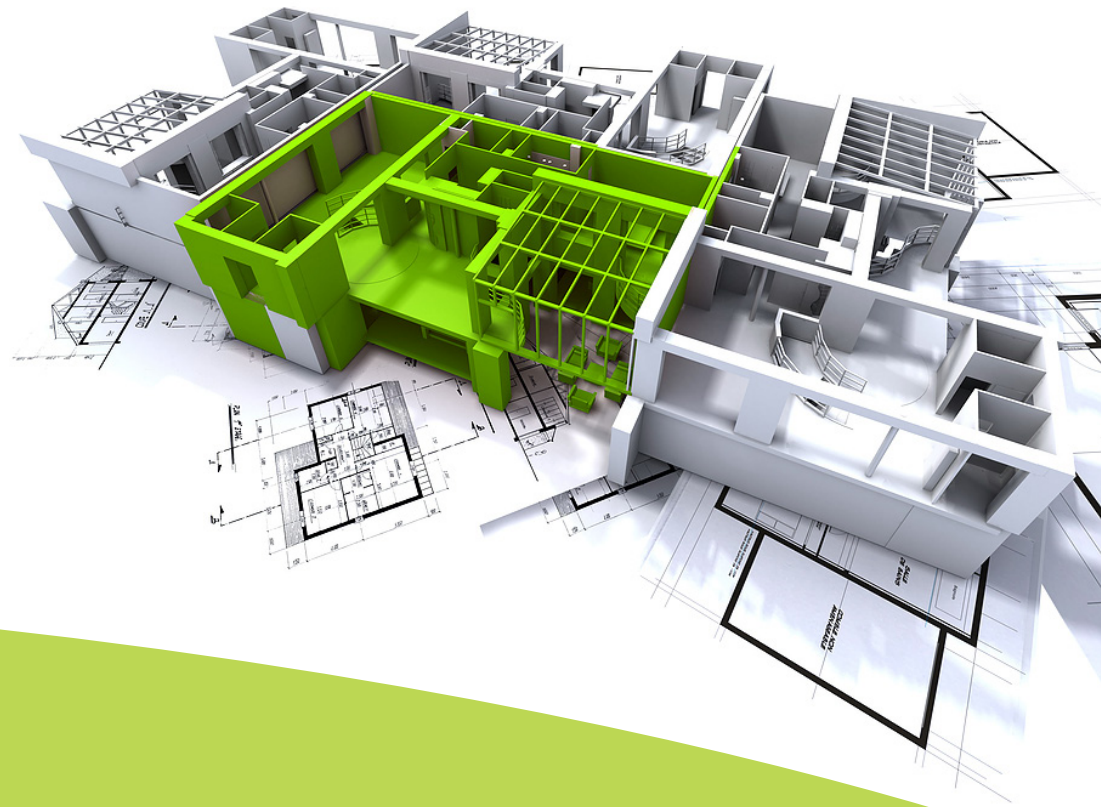


ENERGY EFFICIENCY INITIATIVES TRANSFORM BUILDING DESIGN

-WHITEPAPER



Global efforts to reduce energy consumption are rapidly advancing green building practices and have created new trends in architecture. Federal and local governments are pushing for energy efficiency improvements as critical for keeping business costs down and staying competitive in the global economy. In response, the building industry is embracing environmental responsibility and the need to incorporate sustainability measures.

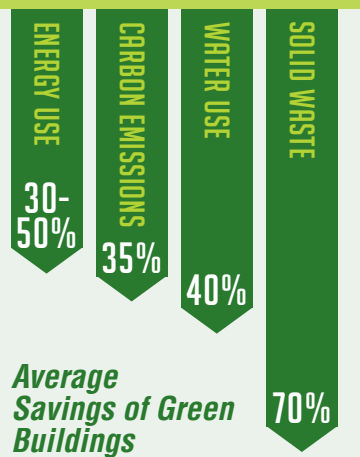
We are experiencing a re-boot of architecture, where many of the old techniques and ideas just don't work in today's environment. Government and business

leaders are calling for innovative ways to conserve energy and promote environmental awareness. Concurrently, architects are changing the way we look at traditional practices, and designing buildings that have a lower impact on the environment and communities. Many architects are striving to achieve the high status Leadership in Energy and Environment Design (LEED) rating for the buildings they design. Yet, even those without a LEED rating are designed as ten times more energy efficient than buildings that were constructed 15 years ago.

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Supported by advances in technology, modern energy practices, and federal funding, new trends in building design techniques have emerged. They are stimulated by the heightened focus on environmental sustainability and encourage economical, resourceful methods that align closely with industry standards and government initiatives. Building restoration, designs inspired by nature, and use of cost-effective materials are some of the innovations architects are incorporating today.



Source:
University of Washington -
Capital Projects Office



RENOVATING OLDER BUILDINGS

Restoration and remodeling of existing buildings is a growing trend for homes, commercial buildings, and historic architecture. Modernizing a building to suit green standards is a unique challenge, often involving the use of recyclable materials, updating windows and lighting, changing HVAC systems, and reorganizing spaces. The results are rewarding with a revitalized environment that's sound, uplifting, and energy efficient.



BIOMIMICRY

This design technique is based on patterns of nature that inspire the architectural designs. As a result, the free-flowing creation of a curved high-rise architecture reflects a more natural design, rather than a rigid looking building. Mimicking natural forms sets the tone for the structure to be more efficient in the construction process and cost-effective throughout the lifetime of the building.



PREFABRICATION AND MODULAR DESIGN

This design style is not your father's modular design. With prefabrication, building elements are assembled in a controlled environment with easier access to engineers. Cost-effective products pave the way to a better built environment. Consider how automobiles and televisions are basically built in a pre-fab process. They are very reliable. The cost of purchase is lower as the manufacturing process has streamlined, passing on the cost savings to consumers.



GLASS

Glass today has a higher insulating value than an insulated wall. The right glass will save thousands of dollars on energy usage. There have been huge strides in Photovoltaic glass, which will be incorporated into all glass in the future. Another type of glass called Electrochromic uses electricity to change the glass tint to lighter or darker, depending on the time of day or season. This feature helps to reduce the cost of lighting, heating, and air conditioning.

Green architecture certainly is considered the new standard for the building industry. More trends will continue to emerge as advancements in design and construction materialize. Communities that invest in sustainable architecture will reap enduring, highly rewarding benefits in terms of environmental health, economic stability, and opportunities for growth.

ABOUT JOHN OLIVIERI

John Olivieri is a licensed architect with a bachelor's degree in architecture design for the University of Illinois at Chicago. Olivieri Brothers Architects strives to achieve high standards in sustainable design and green architecture, and is committed to improving local communities and the environment.