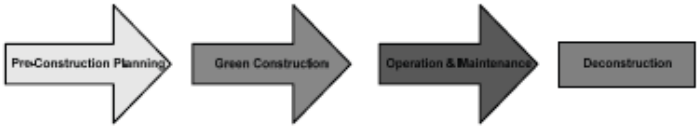
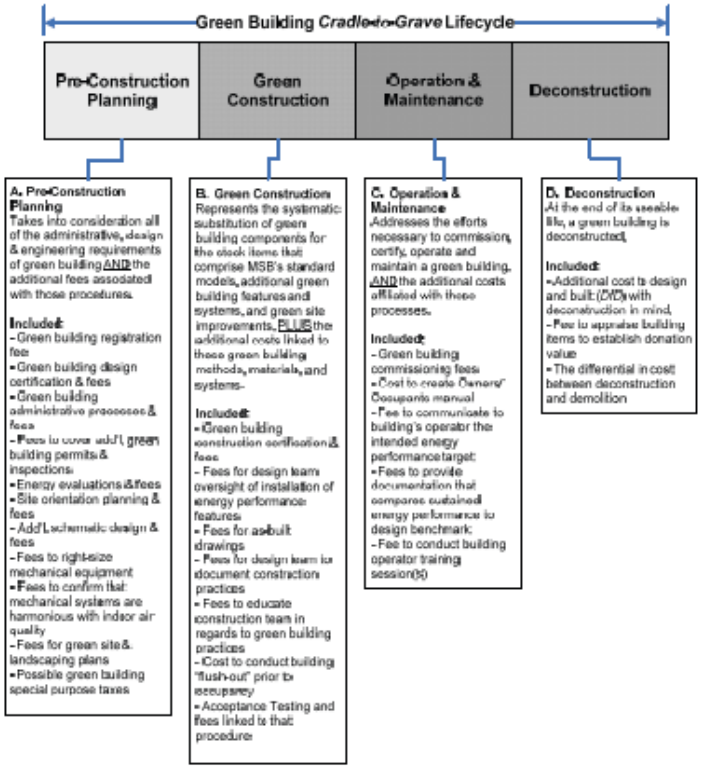
Marshall & Swift Green Building Costs
Sample Pages Only: Introduction, Costs, Glossary



Green Building Cradle-to-Grave Lifecycle

New Construction & Reconstruction



Pre-Construction Planning

This phase takes into consideration all of the administrative, design and engineering requirements necessitated by Green building. These activities are not customarily done for non-Green projects; hence they need to be recognized as additional costs. Examples of these costs include design fees, building registration fees, green permit fees, and the costs of additional administrative efforts to handle and process documentation, submittals and registration paperwork.

Green Construction

The construction phase represents the utilization of Green building materials, methods and technologies in lieu of the stock or non-Green items that comprise a conventionally-constructed building. It also includes additional green building features and systems, and green site improvements. Additional activities are required for Green construction, such as more comprehensive as-built documents, detailed records associated for specific energy-efficient products and materials and more extensive acceptance testing.

Operation & Maintenance

The operation & maintenance (O&M) phase of Green construction addresses the efforts necessary to commission, certify, operate and maintain a Green building. Since these O&M activities are not customarily connected to projects that are non-Green, they need to be recognized as additional activities and costs. Examples would be commissioning, technical documentation and conducting operator/owner training session(s) to make sure assigned personnel understand the systems and operation of the building.

Deconstruction

Deconstruction is the careful and selective dismantlement of a building, component-by-component, specifically for re-use, recycling and waste management. Deconstruction differs from demolition in that the latter focuses on the least expensive, most expedient method of clearing the site and sending the waste and debris to a landfill. Deconstruction, conversely, is a method of harvesting what is commonly referred to as waste and reclaiming it into useful building materials.

Associated with deconstruction is the possible donation of the re-useable materials to a qualified non-profit organization [501(c)3], and the benefit resulting from tax credits gained.

An aspect of Green building often overlooked is designing for and incorporation of features that will allow for quick and efficient dismantlement when the subject building reaches the end of its useful life. "Designing for deconstruction" (DfD) accentuates a simple, straightforward method of construction, such as utilizing a component or modular approach, and the use of high-grade, durable materials and un-doable mechanical fasteners instead of nails and adhesives.

Since deconstruction is seldom coupled to projects that are non-Green, fees for this activity should be recognized as additional costs related to Green building. These include but are not limited to:

- Additional design cost with deconstruction in mind.
- Fee to appraise the components that make-up the building in order to establish donation value, prior to commencement of deconstruction.

Green Considerations by CSI Division

There are several commonalities across materials which contribute to Green credits:
Regional Material condition - All materials must be extracted processed and manufactured within 500 miles of the building site.
Recycled Content requirement - Material needs to contain post consumer recycled material.
Construction Waste Management requirement - Material needs to be diverted from disposal in landfills through recycle and/ or salvage.

ADDITIONS

CONCRETE

Concrete can contribute Green credits by being a regional material or by being recycled. Concrete within the building envelope needs to come from within 500 miles and contain post consumer recycled material. The specific credit is dependent on the amount of the recycled content.

	UOM	COMMERCIAL	RESIDENTIAL
Insulated concrete, Form-in-place, Expanded polystyrene,			
*Straight, 9-1/4"x 48"x 16", 4" core	EA	$28.25	$27.25
*Corner, 9-1/4"x 60"x 16", 4" core	EA	34.00	32.75

WOOD, PLASTIC & COMPOSITES

WOOD: Wood components can contribute Green credits by meeting the Construction Waste Management, Material Reuse, Regional Materials and Certified Wood requirements. Material needs to be diverted from disposal in landfills through recycle and/or salvage and the material needs to have been salvaged, refurbished or reused within 500 miles. 50% of the wood-based materials and products must be certified in accordance with the Forest Stewardship councils Principles and Criteria.

PLASTIC: Plastic components can contribute Green credits by meeting the Regional Materials and Recycled Content requirements. Plastic needs to contain post consumer recycled material and come from within 500 miles.

ADJUSTMENTS AND RETROFIT COSTS

WOOD, PLASTIC & COMPOSITES WOOD

WOOD: Wood components can contribute Green credits by meeting the Construction Waste Management, Material Reuse, Regional Materials and Certified Wood requirements. Material needs to be diverted from disposal in landfills through recycle and/or salvage and the material needs to have been salvaged, refurbished or reused within 500 miles. 50% of the wood-based materials and products must be certified in accordance with the Forest Stewardship councils Principles and Criteria.

PLASTIC: Plastic components can contribute Green credits by meeting the Regional Materials and Recycled Content requirements. Plastic needs to contain post consumer recycled material and come from within 500 miles.

COMPOSITES: Composite components can contribute Green credits by meeting the Construction Waste Management, Regional Materials and Recycled Content requirements. Composite material needs to be diverted from disposal in landfills through recycle and/or salvage and must contain post consumer recycled material within 500 miles.

The specific credit for Wood, Plastic and Composites is dependent on the amount of the recycled content.

		NET MATERIAL COST ADJUSTMENT*		RETROFIT COST	TOTAL GREEN UNIT COST	
	UOM	COMMERCIAL	RESIDENTIAL	LABOR REMOVAL	COMMERCIAL	RESIDENTIAL
Structural plastic wall framing, Recycled content,						
2" x 4" stud, 16" o.c., 8' high	SF	—	$ 4.28	$ .48	—	$ 6.70
2" x 6" stud, 16" o.c., 8' high	SF	—	6.07	.50	—	9.50

Integrated Design

Building design in which different components of design, such as the building envelope, window placement and glazing, and mechanical systems, are considered together. High-performance buildings and renovations can be created cost effectively using integrated design, since higher costs in one place can often be paid for through savings elsewhere. For example, by improving the performance of the building envelope, the heating and cooling systems can be downsized or even eliminated.

LEED for Homes

Rating system for green homes developed by the U.S. Green Building Council. The acronym stands for Leadership in Energy and Environmental Design.

Life Cycle

Entire life of a product or material, from raw material acquisition through disposal.

Life-Cycle Assessment (LCA)

Examination of the environmental and health impacts of a product or material over its life cycle.

On-Site Wastewater System

Treatment and disposal of wastewater (sewage) from a house that is not connected to a municipal sewer system; most on-site systems include a septic tank and leach field.

Operating Cost

Cost of operating a device or building; including energy, maintenance, and repairs.

Photovoltaics (PV)

Generation of electricity directly from sunlight. A photovoltaic (PV) cell has no moving parts; electrons are energized by sunlight and result in current flow.

Postconsumer Recycled Material

Material recovered from a waste product that has been in use by a consumer before being discarded.

Postindustrial (Pre-Consumer) Recycled Material