

Athena Institute Releases Important Update to the Acclaimed Impact Estimator for Buildings Software

OTTAWA, Canada — June 8, 2010 — The **Athena Sustainable Materials Institute** and its collaborator in software development, **Morrison Hershfield**, today released an important update to the acclaimed building assessment software, the ATHENA® Impact Estimator for Buildings 4.

Version 4.1 offers new locations, new materials, more assembly options, new comparison graphs and increased functionality, along with a number of database updates and bug fixes. These new features are in addition to the numerous enhancements made to the software in its transition from Version 3 to Version 4 (released December 08), which greatly increased its capacity to handle data flows, allowing inclusion of more impact measures and enhanced functionality and flexibility for design teams in specifying building assembly components.

The Version 4.1 release includes:

- **New Locations.** Los Angeles and Seattle have been added as selectable locations and seismic effects have been added to the structural calculations for these two locations. In addition, the seismic effects for Seattle have been applied to Vancouver.
- **New Materials.** New materials include Air Barrier, EPDM membrane white (60 mil), Fiber Cement, MDI Resin, Natural Stone and PVC.
- **New Assembly Options.** Envelopes can be defined once and reused over and over again across multiple assemblies and projects, and saved to a library of "Predefined Envelope Systems". Users now have the option of selecting Structural Insulated Panels (SIPS) as a new Wall Type in the "Custom Wall" assembly. The "Steel Stud Wall" assembly has also been enhanced, with the addition of "Load Bearing" and "Non Load Bearing" options. And the "Wood Stud Wall" type label has been refined from "Exterior" or "Interior" to "Load Bearing" or "Non Load Bearing".
- **New Comparison Graphs.** Users can once again compare two or more projects using Project Baseline Comparison Graphs. If you have two or more projects, pick one as a baseline and compare the others as a percent increase in various summary measures relative to the baseline project.
- **Database Updates.** The following materials have been updated: Aluminum (all regions), EPDM membrane black (60 mil), Large Dimension Softwood Lumber Green & Kiln-Dried (Canadian regions only), Small Dimension Softwood Lumber Green & Kiln-Dried (Canadian regions only), Softwood Plywood (Canadian regions only), Oriented Strand Board (Canadian regions only), Mortar, All Siding Materials, Cedar Shiplap Siding (all regions), Cedar Wood Bevel Siding (all regions), and Cedar Wood Tongue and Groove Siding (all regions).
- **Bug fixes.** Bug fixes dealt with issues pertaining to the registration process, display tree values, reports options, graphs, the loading process, labels, edit menu options, certain assembly calculations and conversion factors.

The Impact Estimator is a whole building, environmental life cycle based decision support tool for use by building designers, product specifiers and policy analysts at the conceptual design stage of a project, when key decisions are made about the shape and material make-up of a building's structure and envelope. The software makes comprehensive Life Cycle Inventory (LCI) information easily accessible to the building community, fostering more holistic and informed environmental decisions. The Impact Estimator is capable of simulating over 1,200 different assembly combinations and is applicable to approximately 95% of the building stock in North America.

The Impact Estimator is a decision support tool, not a scoring or rating system. The software indicates the environmental implications of different material mixes or design choices; users can then consider the trade-offs among the various environmental effects. The essence of the software's decision support role is its ability to compare several design scenarios across a set of selected environmental impact measures. Users may have two or more building designs in mind or they may start with a baseline design and then look at various ways of improving that design.

The Impact Estimator provides a cradle-to-grave LCI profile for a whole building over its expected life. The inventory results comprise a long list of flows from and to nature in the form of energy and raw material flows as

well as emissions to air, water and land.

As the user inputs basic design information, a component bill of materials is determined, at which point the software applies the Institute's LCI databases for product extraction and manufacturing, transportation, on-site construction and ongoing maintenance and replacement. It also takes into account structural system demolition and transport to landfill where appropriate.

Depending upon user-supplied information, the software is able to perform a variety of calculations. For instance, when the project's location is selected from a list of supported regions, the software turns on appropriate electricity grids, transportation modes and distances and even product manufacturing technologies applicable to the product mix for the selected region. The choice of expected service life, type of building and, where relevant, whether the building is owner occupied or rental, turns on effects specific to the maintenance, repair and replacement for envelope materials such as roofing, cladding and window systems.

The Impact Estimator also allows the user the option to input the building's annual operating energy by fuel type (from a separate energy simulation tool). It is then able to calculate primary operating energy, including pre-combustion energy (the energy used to extract, refine and deliver energy) and the related emissions to air, water and land over the life cycle of the building. The software can subsequently compare and contrast the life cycle operating and embodied energy and other environmental effects of the building design, allowing the user to better understand the inherent trade-offs associated with adding more envelope materials (e.g., insulation) with reductions in operating energy use.

For more information please contact Mr. Wayne Trusty, President of the Athena Institute, at 613.269.3795.

Distributed by Morrison Hershfield, the ATHENA[®] Impact Estimator for buildings is available for purchase through the Sustainability section of www.morrisonhershfield.com.

About the Athena Institute

For almost two decades, the Athena Materials Institute has been helping



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Sustainable architects,

engineers and others to evaluate the environmental impacts of new and existing buildings. Through offices in Canada and the United States, the non-profit Athena Institute furthers the use and science of LCA through the development of groundbreaking software, comprehensive, comparable databases, and by working collaboratively with the international research community. www.athenaSMI.org

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