

Green Globes® for New Construction:

A More Effective Approach to Selecting Materials & Resources

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INTRODUCTION

The Green Building Initiative has taken a more sustainable and innovative approach to the selection and specification of products in the newly updated Materials and Resources section of the Green Globes® for New Construction (NC) program for assessing and certifying high performance commercial buildings. The selection of sustainable products is no longer based upon an outdated and less rigorous single attribute approach. Due to the advent of evaluating life cycle criteria and with product certifications now available, products can be selected based upon multiple attributes, providing design professionals a more comprehensive view of a product's environmental impact. Green Globes® NC recognizes that products need to be compared based upon the appropriate application to building design and location as well as the anticipated building service life. Green Globes® NC separates each building into two categories for materials assessment: Building Assembly (the core, shell, and envelope) and Interior Fit-Out (the interior partitions, finishes, and furnishings used within the Building Assembly). Further, each of the two categories has two paths for

product selection compliance within the Green Globes® online survey: “Path A: Performance Path” and “Path B: Prescriptive Path.” By utilizing multiple categories and multiple paths, users of Green Globes® NC can employ different approaches to product selection for the Building Assembly and Interior Fit-Out, thereby increasing options for compliance as well as opportunities for broader comparison of products.

PERFORMANCE PATH

Green Globes® NC has always supported a life cycle approach and continues to do so. Over the past few years, several organizations have created life cycle assessment tools and databases specifically used to evaluate building assemblies. Building owners and design professionals can use these tools to compare various building assemblies that meet client desires and functional needs. Ideally, interior fit-outs should be evaluated through comparative life cycle assessment as well; however, there are no tools readily available for analyzing and comparing interior fit-outs like there are for building assemblies. This is because interior fit-outs include products with multiple formulations and varying and often proprietary feedstocks (ingredients). If a building owner or design professional decides to pursue life cycle assessment of comparable interior fit-outs, a third-party LCA consultant would be required. Nonetheless, Green Globes® NC does include a path for life cycle assessment of interior fit-outs as an acknowledgement that LCA is the future for comparing different interior solutions. Currently, databases on chemicals and feedstocks used for proprietary products are

growing and being vetted, and as they improve, it is anticipated that they will contribute to the future development of LCA tools for evaluating comparable interior fit-outs. In the meantime, if the Green Globes® NC Performance Path for Interior Fit-Out is not selected, using the Prescriptive Path to evaluate individual products from a multiple attribute perspective is another way to improve the process of comparison and selection of sustainable products.

PRESCRIPTIVE PATH

Most green building standards, codes, and rating systems utilize single attributes”—such as recycled content, bio-based content, VOC emissions, etc.—as a means for sustainable product selection. Unfortunately, this process does not necessarily provide the most sustainable solution for a particular application. If you are reviewing a product selection only from a single attribute perspective, such as the amount of recycled content, then the best environmental decision may not be made. It is better to review all appropriate product criteria rather than just one aspect. Therefore, a design professional should evaluate various products based upon the comparison and review of multiple attributes. Green Globes® NC allows multiple attribute evaluation of products selected for both the Building Assembly and Interior Fit-Out using three methods.

The first method is the use of Environmental Product Declarations (EPDs). In an effort to provide transparency of product contents, Environmental Product Declarations have been deemed an appropriate vehicle for identifying the ingredients (feedstocks) used to manufacture a product. However, only providing a listing of the contents of a product without completing a comparison of products for their appropriate application does not necessarily result in the most sustainable

choice. Therefore the completion of a Type III EPD that is based on ISO Standards 14040, 14044, 14025 and 21930 or EN 15804 utilizes additional criteria that evaluates durability and building service life, which are critical in making specification decisions regarding products. Environmental Product Declarations shall be completed utilizing recognized Product Category Rules so that products are evaluated based upon the same criteria. There are two classifications of Type III EPDs: Industry Wide EPDs, which are generic to a product type, and Product Specific Declarations, which are manufacturer-specific for a family of products. Type III EPDs require conformance to the ISO Standards as well as minimally include cradle to gate scope. Another appropriate way to compare and evaluate products for specification is the utilization of third-party certified multiple attribute standards. The multiple attribute standards are based upon a consensus (usually ANSI) process that includes all of the product specific stakeholders. Criteria for product evaluation are agreed upon through the consensus process and include information on feedstocks and manufacturing processes. Examples include NSF International sustainability assessment standards, UL Environment sustainability certifications, and sustainable forestry certifications.

The third way to evaluate products is to utilize third-party certified life cycle assessments of products. Some manufacturers complete third-party life cycle assessments of their products that demonstrate the complete life cycle of their product. These LCAs can be completed by a manufacturer and third-party certified, or the LCA could be completed in its entirety by a third party. This option allows a design professional to compare products based upon their environmental footprint.

HEALTH PRODUCT DECLARATIONS

The latest development in understanding the impact of products on the environment and human health is the request by designers for Health Product Declarations (HPDs) from manufacturers. Unfortunately, in lieu of evaluating thresholds and risks, there is a “red-list” approach being utilized as a way to evaluate product “hazards.” This is misleading to the design community, as there is a perception that products and their ingredients are either “good or bad.” Most lists developed by the EPA or other agencies in the US and abroad evaluate risks based upon thresholds (the amount of a substance or chemical utilized) and provide labeling and handling instructions as a result of a certain threshold. Evaluation of products through de-selection is not a sustainable, life cycle approach to product specification. It is recommended that criteria for HPDs be developed through an ANSI or other consensus process that includes all stakeholders, including those in the building and chemical industries that have

an understanding of appropriate thresholds and associated risks. It is appropriate to recognize that almost anything in excess can cause harm. For example, it is recommended to have eight 8-ounce glasses of water per day. However eighty 8-ounce glasses of water per day would be excessive. Although this is an overly simplistic analogy, it illustrates the current illogical approach to HPDs. The logical approach is to create consensus-based criteria for evaluating health risks in relation to thresholds. This approach is similar to having EPD Product Category Rules that are recognized and fully vetted. Because Health Product Declarations do not have standardized criteria or consensus based category rules, they are not included in the updated Green Globes® NC evaluation tool.

CONCLUSION

There are multiple ways to evaluate, compare, select and specify products. One is the performance based life cycle approach for building assemblies and interior fit-outs. Another is the prescriptive based approach with three methods to evaluate multiple attributes of products: Environmental Product Declarations, third-party multiple attribute standards, and specific product life cycle assessments. Ultimately, the goal is to consider durability and building service life during product selection, resulting in the use of environmentally preferable products that meet the functional and aesthetic needs of the application. Green Globes® NC includes the latest innovative thinking in regard to selection of environmentally preferable products and establishes options and alternatives for compliance to meet green building criteria.

Sustainability is an on-going process. Design professionals and their clients are becoming increasingly savvy and informed. The development of more sophisticated sustainability tools and rating systems like Green Globes® for New Construction keeps pace to provide industry professionals with additional support in reaching their sustainability goals.

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Jane Rohde champions a widespread global cultural shift toward de-institutionalized and sustainable senior living facilities through her consulting, research and advocacy, which provides services to non-profit and for-profit developers, government agencies, and senior living and health care providers. She also focuses on sustainability and completed pilot assessments and updates for Green Globes®-CIEB Healthcare module and Green Globes®-New Construction module

Jane's consulting practice includes the promotion of person-centered environments, sustainability, and universal design solutions. She sits on the Environmental Standards Council, part of The Center for Health Design and is the former AAHID Board of Regents VP. Her leadership has garnered the creation of the Facility Guidelines Institute's *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*, a guideline utilized as code for the licensing of long term care and related facility types. This ground breaking document includes guidance on not only traditional models, but provides guidance for designers, regulators, and providers for creating person-centered environments. Jane founded and chairs the Senior Living Sustainability Guide® committee, a committed group of volunteers that created a sustainability guide for senior living projects and has been accessed for utilization in over 10 countries, including China; where she is working with China Senior Care on the first residential aged-care facility that focuses on skilled nursing and adult day care. Jane speaks internationally on senior living, aging, healthcare, evidence based design and sustainability.