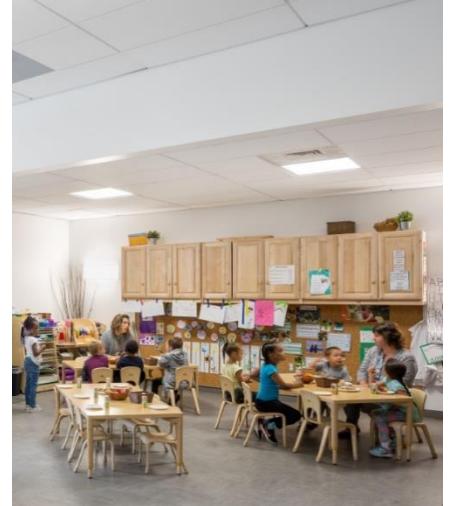


BORA

Designing with Healthy Materials: Research and Industry Implications

October 6, 2020, by Mike Manzi

Buildings are filled with thousands of materials. Beneath each product selection we make lies a cascading series of procurements that result from the extraction or generation of natural resources and chemicals. Unfortunately, many of these substances – with or without our knowledge – have the potential to harm people and our planet. **We therefore recognize that industry-wide transparency and optimization is vital to our ability as designers to improve human and environmental health through the individual building choices we make.** Our longstanding participation in this work included an intensive, grant-funded research project during the pandemic-stricken summer of 2020.



History of Leadership

As the industry became aware of unintended consequences of the early LEED focus on single-attribute characteristics, Bora started looking at products more holistically. The first step was to avoid certain obvious "red list" chemicals. That effort highlighted how little we knew about the makeup of most building products or their potential impact on ecosystems and people. In 2011, Bora jumped at the chance to participate in a new initiative to standardize the way building product ingredients and their health effects would be disclosed – the Health Product Declaration (HPD).

As Bora's Specifications Manager, my focus has always been on the technical aspects of reporting product content and health information, which turns out to be exceedingly nuanced. Along with Senior Interior Designer Amy Running, I served on the Steering Committee of the HPD Development Working Group; I later joined the founding Board of Directors of the HPD Collaborative and currently chair the HPDC Technical Committee. Bora is a founding financial sponsor and ongoing member of this organization. Amy, in addition to anchoring an interior design group at Bora that is well versed and proactive in these issues, has been a leader in outreach, co-founding the Portland Materials Transparency Collaborative (PMTTC) – a community of local designers, owners, contractors, and others who collectively work to promote healthy materials.

OASE Research

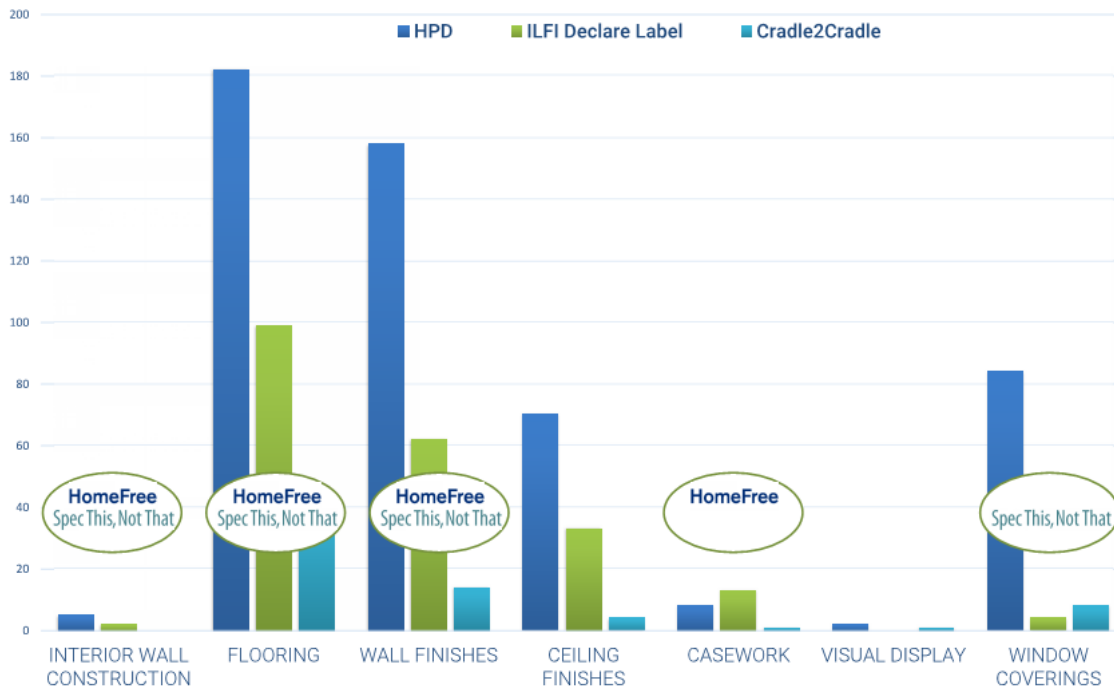
Over the years our efforts have sought to simplify the use of health knowledge in the everyday process of selecting building products, but this information is complex and incomplete. This past summer, Bora was awarded a research intern – Jake Kennedy – through the Oregon Applied Sustainability Experience, a research and fellowship program administered by Oregon Sea Grant and Oregon Department of Environmental Quality and primarily funded through an EPA pollution prevention grant. Jake, a graduate student in economics at Portland State University, with prior experience in sustainable materials research in the outdoor products and clothing industry and strong skills in data manipulation and management, was a perfect fit to tackle our primary objectives:

- Compare product compositions across similar product types in a prioritized set of product categories.
- Identify common chemicals of concern.
- Identify neediest data gaps.
- Provide summary recommendations for designers.

We decided to focus on interior building materials with the most direct impact on building occupant health, including wall construction and finishes, flooring, ceilings, casework, visual display, and window coverings. Building off a data set from the more than 4,000 product HPDs available in the HPDC Public Repository, and initial research by HPDC in partnership with Arizona State University, Jake narrowed our scope to just over 500 products that met our criteria.

In addition to HPD data, we looked at the International Living Institute's Declare and Living Product programs and the Cradle To Cradle Products Innovation Institute for optimized products within our scope, and at material selection recommendations from the Healthy Building Network's HomeFree program – a national initiative looking to make affordable housing projects healthier – and BuildingGreen's "Spec This Not That" product guide.

Available Data by Product Category



Observations and Next Steps

An expanded summary of the research and data will be available in Bora's "Balancing Health, Equity, and Carbon Reduction" presentation for Sustainable Building Week in October 2020. This research has informed internal Material Selection Guides under development for each of the product categories studied. Following are the key takeaways for our industry and next steps, which Bora will follow up on through our continued involvement with HPDC and its harmonization partners, and through our engagement with peers and others through the PMTC:

Make better use of the data we have:

- Improve HPDs and other systems to simplify comparisons across specific product types.
 - Add product type field to HPDs.
 - Expand common product composition descriptions.
- Encourage safer chemistry.
 - Categorize substances by specific functions.
 - Identify safest alternatives to identified common hazardous substances.

Improve data quality and usefulness.

- Minimize information ambiguity.
 - Lobby for public assessment of prioritized list of LT-UNK and NoGS substances.
- Maximize interpretation of health information.
 - Expand product categories covered by resources like HBN's HomeFree program.
 - Lean on chemistry and health experts to turn data into actionable knowledge.

These conclusions are in line with work already being planned by HPDC as a result of their earlier ASU research and other observations from nearly a decade at the center of building product transparency efforts. A few years ago, the building industry was like the food industry before standardized ingredient labels. Now, being in the dark about what we build with is unacceptable. These research efforts bring us a step closer to consistently having the actionable knowledge we need to make informed selections. Bora continues to be a proud partner with all organizations that put the health of people and planet at the forefront of our work.