



City of Portland Green Purchasing Case Study

Office Furniture

Purchasing Green

In 2017, the City began a major renovation of the Portland Building, where over 1500 City staff work. Although the primary objectives of the renovation involved addressing a failing building envelope and improving its seismic performance, the renovation afforded an opportunity to also improve space optimization to increase building occupancy. To achieve this, the City decided to invest in new office furniture for the entire building, replacing existing furniture that was over 30 years old and a variety of types and sizes. Because this was such a significant purchase, the City took the opportunity to address two additional goals: furniture standardization and stronger human health and environmental furniture attributes.

Historically, when City offices needed new furniture, they either purchased items through one of many existing price agreements or acquired them as part of a tenant improvement or construction project. The result was a mishmash of furniture that was incompatible and hard to reuse when departments moved or reorganized. The new space optimization approach stipulates that all future furniture purchases will be made off of the new price agreement, whether for use in the Portland Building or another location. Over time, all City furniture will be standardized, ensuring it can be easily reconfigured and reused.

Because the price agreement involved a large initial purchase and would affect all future purchases, the City wished to push the “green” envelope since vendors would have a financial incentive to meet more robust environmental and human health criteria. The City researched best practices in sustainable office furniture from a variety of sources. The resulting specifications raised the bar for furniture-related indoor air quality (IAQ), toxics reduction, and third-party textile certification.

The City’s IAQ specifications now require third-party certification verifying that furniture meets the California Department of Public Health Standard Method v1.2-2017 (or most current), for the testing and evaluation of volatile organic compound (VOC) emissions from indoor sources (emission testing method California Specification 01350). Additionally, all furniture components containing composite wood must comply with Phase 2 of California’s Code of Regulations, Title 17 §93120.2 - Airborne Toxic Control Measure to Reduce Formaldehyde Emission from Composite Wood Products

Toxics reduction is also a main component of the City’s new specifications. Furniture must be free of added flame retardants and intentionally added antimicrobial agents. The presence of perfluorinated chemicals is also restricted to 100ppm, and polyvinyl chloride (PVC) is limited to less than 1% of product weight. While the IAQ and toxics reduction specifications reflect best practices



Electric height-adjustable office furniture available off of the City’s price agreement.

At a glance –

Who –

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Product –

- Office Furniture

Cost –

- Reduces future office furniture purchases
- Reduces operational costs

Benefits –

- Facilitates reuse
- Reduces waste
- Reduces toxics
- Improves indoor air quality
- Reduces negative health impacts

“This project really was a unique opportunity to take a holistic approach, and in doing so, foster healthier workspaces while saving money over the long term.”

Stacey Foreman,
Sustainable Procurement Coordinator,
Office of Management & Finance

from the U.S. Green Building Council's [LEED](#) standard or the [Healthier Hospitals](#) initiative, the City's 2017 office furniture solicitation was one of the first to combine these best practices and use them all in a single solicitation.

The other cutting-edge component of the City's furniture price agreement is the use of certified textiles. Textiles for workstations and other upholstered items must be certified to one of the five following standards: GOTS, Oeko-Tex 100, STeP, Cradle to Cradle, or NSF/ANSI 336-2011.

Benefits

The main benefit of standardizing furniture is that it promotes reuse and reduces waste. Additionally, the City's specifications require that furniture be easily adjustable and reconfigurable. This further maximizes the potential for reuse and decreases long-term costs because the furniture can meet a large variety of end-user needs. Easily reconfigurable furniture supports the changing needs of departments as programs and space needs evolve over time.

Stronger indoor air quality and toxics requirements reduce potential health impacts on employees. Exposure to VOCs can cause eye, nose, and throat irritation; breathing problems; and nausea. VOCs can also damage the central nervous system and other organs, and some VOCs even cause cancer. According to studies by the U.S. Consumer Product Safety Commission, furniture treated with flame retardants are no more flame resistant than untreated furniture, yet these chemicals continue to be added to furniture. Flame retardant chemicals migrate out of products and into dust where you ingest or inhale them. Many flame retardants are linked with serious health problems, including cancer, reduced IQ, developmental delays, obesity, and reproductive difficulties. Fluorinated chemicals and antimicrobials are linked to similar health problems. (More information on the health impacts of these chemicals in furniture is available from the Center for Environmental Health's [Kicking Toxic Chemicals Out of Office Furniture](#) publication)

Textile certifications vary in the environmental and human health issues they address. To date, the fabrics selected for the Portland Building furniture are certified to NSF/ANSI 336-2011 and Cradle to Cradle. NSF/ANSI 336-2011 covers fiber sourcing, material safety, water conservation and pollution, energy consumption, air quality, recycling practices, and social accountability during textile production. Cradle to Cradle addresses material health, material reuse, renewable energy and carbon management, water stewardship, and social fairness throughout the textile's lifecycle.

Cost

The City was able to maximize cost benefits through a competitive solicitation for a large volume of office furniture. When looking at total cost of ownership over the lifetime of the furniture, the City expects to see cost savings, largely due to the furniture standardization benefits outlined above. The City also anticipates significant operational cost savings since standardization will make it quicker and easier for end-users to reconfigure workstations.

Performance

The City expects the office furniture to perform well and last 20 years or more. During the solicitation process, a City evaluation team tested mock-ups of all the proposed furniture to test quality, performance, and functionality. This evaluation included technology adaptability, since office technology is expected to change over the life of the furniture.

Lessons Learned

One of the key lessons learned is that when specifying new or cutting-edge sustainability requirements, be as detailed as possible about what you're looking for and spell out anything that may be unclear. For example, furniture distributors are not always familiar with the nuances of environmental product certifications. Furniture IAQ emission certifications can be confusing, as one certification may or may not be valid against multiple IAQ standards and there may be product-specific exclusions to the certification depending on the type of textile or finish applied to the product. As a result, the City's solicitation process involved a lot of back-and-forth communication with the proposers and manufacturers to confirm these details.

Another lesson learned is that customers – especially those that buy in large volumes like the City – can drive change by asking for strong environmental and human health attributes. For example, during contract implementation, the City ran into a challenge related to the limited number of resilient/wipeable, non-vinyl textiles that met the City's textile certification requirements. In this case, because the City was interested in such a large volume of a particular textile for the Portland Building project, the City's furniture contractor was able to work with the textile manufacturer to get a silicone-based fabric Cradle to Cradle certified to meet the City's specifications.

Lastly, the City's office furniture solicitation process benefited greatly from stakeholders planning in advance and working collaboratively. This included the Portland Building project team, City department end-users, and the City's Procurement Services division.

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About the Office of Management & Finance

The Office of Management & Finance (OMF) provides core central services necessary for the operation of the City of Portland government, from printing and fleet to accounting and procurement.

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