CASE STUDY

Bedford Green House

BEDFORD GREEN HOUSE, FOR-PROFIT SUPPORTIVE HOUSING, NEW YORK, NEW YORK

PRODUCT CATEGORIES

CABINETRY & MILLWORK

ECHELON CABINETRY; HARDWOOD PLYWOOD WITH SOLID WOOD DOORS AND FACE FRAMES; FACTORY FINISHED

DOORS

SOLID CORE DOORS, NAUF

COUNTERTOPS

SILESTONE QUARTZ

FLOORING

DALTILE CERAMIC TILE; MADE IN THE USA, LINOLEUM

PAINT

BENJAMIN MOORE NATURA; GS-11 CERTIFIED AND ZERO VOC

Bedford Green House is a 118-unit, 13-story affordable housing development in the Bronx neighborhood of New York City. Developed by Project Renewal in partnership with Jonathan Rose Companies, the project will house over 300 residents, including formerly homeless families. The project is targeting LEED-Gold certification and incorporates biophilic design features including a rooftop aquaponics greenhouse and living façade, as well as on-site supportive services for residents.

Bedford Green House focused on sustainable design and resident health from day one, reflecting the mission of Project Renewal. The project seeks to create a community among the building residents, and to foster relationships with the surrounding neighborhood by including a community playground and park. Their holistic approach to health includes on-site counseling and medical services, horticulture therapy and healthy cooking classes, supportive services, and a layout to encourage socialization and physical activity.

HomeFree complimented and expanded on these efforts by supporting a building materials selection process that considered human health impacts as part of a holistic approach to health. The project architect, Edelman Sultan Knox Wood started with a good baseline set of materials, and embraced HomeFree as a tool to integrate additional healthy materials into the project.

WOOD AND COMPOSITES

The project's approach to healthier

homefree.healthybuilding.net

HomeFree

RESEARCH HIGHLIGHT

WOOD PRODUCTS

Wood and composite wood products are used in a variety of interior building products including cabinets, millwork, and doors. Composite wood products historically used formaldehyde-based binders. Residents can be exposed to formaldehyde, a carcinogen and asthmagen, as it is released from products over time. There are options that avoid and limit formaldehyde emission and exposure.

Consider using solid wood, even if it is just for part of a product, such as the doors on cabinets. Several HomeFree demonstration project teams report that use of solid wood doors improves durability of cabinetry, off-setting additional upfront cost over time.

When using composite wood, specify materials that are NAF (No Added Formaldehyde) or ULEF (Ultra Low Emitting Formaldehyde) when possible. You can also select composites with the smallest amount of binder - plywood contains much less binder than MDF or particleboard.

For details, visit the **Composite Wood product** page on HomeFree.

materials is illustrated by the decision to use solid core doors with a NAUF (No Added Urea Formaldehyde) core. Solid core doors commonly use composite wood for the core. Composite wood products use a binder to hold the pieces of wood together. Urea formaldehyde binders emit carcinogenic formaldehyde into the building over time. Alternatives, such as those specified here, avoid or limit the formaldehyde emitted.

The project team also considered formaldehyde emissions in their cabinet selection. They specified hardwood plywood construction which uses less binder (and therefore less formaldehyde) than particleboard and MDF. While the solid wood cabinet doors used for this project have a higher upfront cost, they are more durable, and are preferable from a health perspective.

FOLLOWING THROUGH

Specifying healthier products is only part of the process of getting healthier materials into buildings. The Bedford Green House architect also used HomeFree to screen potential changes to the material specifications during construction. When the contractor submitted substitution requests for interior paint, the architecture team worked with Healthy Building Network's research team to evaluate the potential health impacts of the substitution. Through this research, it was determined that the specified paint, Benjamin Moore Natura, was a better option. It is free of aklyphenol ethoxyaltes (APEs), and has colorants that do not add to the VOC content of the paint. APEs are a high priority for avoidance in paints, because of their endocrine-disrupting properties (their ability to disrupt how hormones work in the body). The substitution was rejected.

This example highlights an important and often overlooked aspect of material selection. Even the most thorough product specifications may be unintentionally compromised during the construction process. To help mitigate this issue, the project specifications need to clearly communicate health and sustainability goals tied to specific materials and incorporate a check for that in the product substitution request form.

CHANGING PRACTICE

Though this team was already aware of and working to use healthier products, they learned some surprising things through their work with HomeFree. One example is the fact that recycled content may contain hazardous chemicals that can be unintentionally incorporated into new products. This is in contrast to certain standards that require or incentivize the use of recycled content. They also learned that healthier products are not necessarily more expensive. The linoleum floors used were the same price as other flooring being considered (engineered wood), but are higher rated on the HomeFree hazard spectrum. They plan to build off of what was learned on this project and to use HomeFree as resource to vet materials for future projects.