

US EPA ARCHIVE DOCUMENT



Deconstruction and Building Material Reuse to Foster Community Redevelopment in Lynchburg

Sustainability Pilot Background

EPA's Brownfields Sustainability Pilots provide technical assistance to assist communities in achieving greener, more sustainable results when redeveloping brownfields. These pilots also provide models for other communities across the country.

EPA provided the City of Lynchburg, Virginia with technical assistance to develop best practices for deconstructing the Allen-Morrison site, a large scale industrial brownfield. EPA's technical assistance included developing a building materials inventory tool, assessing the feasibility of deconstructing project buildings, and a quantitative inventory that identified building materials that can be sold through reuse and recycling markets or reused onsite as part of redevelopment. The city plans to redevelop the former Allen-Morrison site into a park to serve both the neighborhood and the larger community, while promoting the principles of sustainability.



Allen-Morrison Project Background

Starting in the early 1900s, the 16.9-acre site was home first to the Thornhill Wagon Company and later to the Allen-Morrison Corporation, which produced metal signs. Two primary facilities stand on the site: Allen-Morrison (87,800 square feet) and Thornhill (86,400 square feet). Since 1996 when the property was abandoned, the City of Lynchburg formulated conceptual site plans for redeveloping the area into a public park. The plan includes a community center, playground, and picnic areas. The city also wants to facilitate citizens' connections to the city stadium and Lynchburg Grows, a nonprofit urban farm, through this redevelopment. Lynchburg Grows hopes to demonstrate the importance of green, healthy living as well as local agriculture, through the project.

The Virginia Department of Environmental Quality, through the Voluntary Remediation Program, conducted Phase I and Phase II environmental assessments on the Allen-Morrison site using EPA funding. The assessments revealed soil contaminated with metals and semivolatile organic compounds. Additional soil and ground water tests are currently being conducted using EPA funding.

Project Highlights

EPA's technical assistance to the City of Lynchburg included: developing a material reuse inventory tool to collect information on building materials, estimating recoverable quantities of deconstruction materials, estimating costs or values of materials inventoried, and identifying regulatory concerns; conducting a hazardous materials survey; assessing the feasibility of deconstructing the Allen-Morrison and Thornhill facilities; conducting a quantitative inventory of the Thornhill facility buildings; and providing recommendations for onsite material reuse.

Based on the feasibility assessment, EPA's technical assistance team determined that the condition of building materials within the Allen-Morrison buildings rendered the materials generally unsuitable for reuse. In addition the assessment results indicated that it would not be cost effective to deconstruct the buildings. Therefore, demolition with mechanical separation and salvage of recyclable materials (particularly scrap metal, brick, and concrete) was recommended.

The technical assistance team determined that portions of the Thornhill facility were more suitable for deconstruction, thus a quantitative deconstruction inventory was conducted. The quantitative inventory of the materials within the Thornhill buildings focused on identifying recoverable materials with the greatest market value potential and materials suitable for reuse in the proposed redevelopment that could promote sustainability, highlight the industrial heritage of the site, or be used by Lynchburg Grows.

Challenges and Lessons Learned

Building Local Capacity

The technical assistance provided by EPA helped the city develop innovative, creative ideas and solutions to the concerns associated with a large deconstruction project. For example, the city is including deconstruction, material reuse and recycling language in its bid documents for the project, is linking the deconstruction project with new construction and renovation projects and plans to open a local building materials reuse store to facilitate the reuse of recovered materials.



The Allen-Morrison site in Lynchburg, Virginia.

Employ Full Cost Accounting to Reduce Market Uncertainty

The technical assistance team estimated potential salvage value of materials based on discussions with local vendors and businesses.

A summary of the building materials and their potential market values included:

- 173,000 board feet of lumber with an estimated reuse market value of \$103,880
- 409,300 pounds of metals with an estimated reuse market value of \$20,500
- 760,500 bricks with an estimated reuse market value of \$190,100

The technical assistance team also made recommendations for the reuse of certain materials. The reuse of these materials will promote sustainability aspects of the project and highlight the site's architectural heritage such as large (six inch width or greater) timbers and wooden doors with interesting pressed metal (likely tin) finish. Milling and reuse of the high quality lumber in an onsite shop will provide additional job opportunities and may generate additional income for the project or Lynchburg Grows. Where structurally appropriate, salvaged bricks could be reused as part of the onsite redevelopment to recreate the historic architectural masonry of the site or as retaining walls or other decorative structures. It may be possible to leave a portion or entire wall of the Thornhill buildings intact as a backdrop for a small outdoor theatre or other aspect of the redevelopment.

Based on the materials inventory and recommendations, the EPA technical assistance team is helping the City of Lynchburg draft bid documents for deconstruction of the Thornhill buildings. The city is scheduled to complete the bid documents in late 2009.

Sources for Additional Information

For more information on this project, please see the full Allen-Morrison technical assistance study at:
http://www.epa.gov/brownfields/sustain_plts/factsheets/allenmorrison.pdf

Regional Contact Information

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