• Design • Review • Guide •

Brick

Burlington is well known as a community with a high quality of life, small and cohesive neighborhoods, a vibrant downtown and waterfront – all within a spectacular setting on the shores of Lake Champlain. This deserving reputation is due in part to the City's small size, entrepreneurial spirit, civic-minded citizens and activist government. One of the many factors that makes Burlington such a great place to live, work and visit is the community's attention to detail, and respect for it's setting, heritage and quality urban design.

Burlington's Design Review process strives to protect the city's unique qualities and strong sense of place by carrying out citywide development and design objectives. The purpose of this *Design Review Guide* is to help applicants in preparing projects to be reviewed by the City's Design Advisory Board and Development Review Board. Through materials such as this, the Department of Planning & Zoning seeks to make information available well before the final design of a project, saving the applicant, and the city, time and money.

From the stately church to the former mill complex, brick is one of New England's signature urban features. Burlington is certainly no exception. From the Unitarian Church at the head of Church Street, to Old Mill on the UVM Green, Burlington's brick buildings - both old and new - weave a common thread throughout the community. This *Design Guide* is intended to help you appreciate the importance of brick as a design element of many of Burlington's historic buildings, outline some of its maintenance needs, and offer a few sources for additional information.

A Historical Perspective

Brick is one of man's oldest manufactured products. The use of brick as a building material dates back more than 6,000 years when clay was mixed with straw and baked in the sun. From single-family homes in the south end, to former estates on the hill and large commercial buildings downtown, brick is everywhere in Burlington - much of it made locally. Burlington's lakefront location and rich clay deposits were optimal for brick-production from the late 1700's through the early 1900's. Clay was mixed with a small amount of sand as a binder, shaped into brick forms and then set out to dry. After it was partially dried by the sun, the bricks were fired in a kiln. That's why most of the older brick throughout Burlington is the same size, color and texture.

Typical of many New England communities, Burlington has a wealth of brick buildings, mostly turn of the century, but some older and newer. Brick was chosen because of its durability and the sense of permanence it commands. Many commercial buildings are brick because the owner wanted the community to know they were successful and would be around a long time. In fact, brick is still being used today for many new buildings because it continues to be attractive and durable, and fits well into Burlington's urban landscape.

Care and Repair of Brick

Even though brick is durable and long lasting, it still needs maintenance and care. Like other aspects of a building, brick needs to be inspected periodically. Particularly look at the mortar between the bricks. Has it deteriorated? Are there pieces missing? Then examine the bricks themselves. Are they loose or discolored? This can be an indication of a larger problem because it means that there is moisture within or behind the brick. Problems with the roof, cornice, or eave trim may be the cause, so look beyond the bricks themselves if you're suspicious. Just like peeling paint, staining on brick is usually telling of a larger problem.

Cleaning Brick

Cleaning brick requires care as well. Typically the brick cleaning process is divided into three categories: water, chemical, or mechanical-abrasive cleaning. Water is the gentlest and most recommended method for cleaning the surface of brick. Low pressure water cleaning actually is often the most effective, the safest for the brick and the environment, and the least expensive. Chemical cleaners react with the dirt and brick in order to speed up the dilution process before its rinsed away. Brick

manufacturers recommend that the brick be thoroughly saturated to allow the cleaner to deeply penetrate the bricks. However, be careful not to spread the stain or paint to another portion of the wall. Be sure you know how to safely use and dispose of any cleaners - or hire someone who does. Additionally, chemicals can effect foundation plantings and gardens, and may be harmful to pets and children playing in the yard immediately following the cleaning.

Mortar damage

Mechanical methods - usually blasting or sanding processes - are the roughest on your brick. Unless done very carefully, sand blasting may cause permanent damage to the bricks and mortar. It erodes the waterproof surface of the brick, revealing the absorbent interior. Over time, moisture is drawn into the brick, and the building, and a vicious moisture cycle has begun. Sand blasting also can loosen or remove mortar between the bricks, allowing in moisture.

Because there many cleaning options, and all brick is different, test a small sample area first – just to make sure it works.

Repointing your brick

Mortar is the "glue" that holds the bricks together. Over time, its normal for the mortar to deteriorate, loosen and fall away. When properly done, repointing restores the physical and visual integrity of the brick and your building. When done incorrectly, it can undermine the strength of the bricks by causing them to crack and break over time. Why? Because mortar should be softer than the brick. That way, the brick 'moves' within the mortar with seasonal changes in temperature and moisture. The biggest mistake made is to use cement as mortar. Cement is hard, it shrinks as it dries, and it's water resistant. If the brick themselves don't break under the pressure, the seal between the cement mortar and the brick will separate letting in water.

Lime mortar is the best way to go – it is soft, porous and doesn't vary much in temperature fluctuations. Perfect for Vermont winters! Other characteristics to look for are color, texture, profile and tooling when selecting a replacement mortar. An experienced mason can help.

Design Objectives

√ New mortar should match the color, texture, profile, tooling, and composition of the mortar being replaced.

√ In-fill brick should match the size, color, and texture of the existing brick.

Common Terms

Belt Course: A narrow horizontal row of brick, sometimes slightly projecting such as window sills. Also called "string course" or "sill course."

Corbel: A shelf or ledge formed by successive rows of brick projecting out from the face of the main wall.

Course: One continuous horizontal row of bricks, bonded with mortar.

Efflorescence: A white powder or stain on the surface of the brick, resulting from water seeping through the brick and depositing salts.

Lintel: A beam placed over an opening in a wall such as a door or window.

Spall(ing): A small fragment removed from the face of the brick by a blow or inappropriate cleaning.

Water Table: A projection of brick at the bottom of the outside wall, slightly above ground.

Additional Information

general information

- **Burlington Dept. of Planning & Zoning**
  149 Church St., Burlington, VT 05401
  802.865.7188 www.ci.burlington.vt.us/planning/

historic building rehabilitation

- **Preservation Briefs, National Park Service**
  #2: "Repointing Mortar Joints in Historic Masonry Buildings"
  866-512-1800 www2.cr.nps.gov/tps/briefs/presbhom.htm

historic building rehabilitation

- **VT Division for Historic Preservation**
  National Life Bldg., Drawer 20
  Montpelier, VT 05620-0501
  800.622.4553 www.uvm.edu/~vhnet/hpres/org/vdhp/vdhp1

brick industry

- **Brick Industry Association**
  11490 Commerce Park Drive
  Reston, VA 20191-1525
  703.620.0010 www.bia.org

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