By Rhonda Maas

Avoiding Common Renovation Mistakes

While correcting mistakes others make in restoring old masonry structures could become a lucrative side business, it is obviously in the best interest of both the building and its owner to get it right the first time. Here are some avoidable mistakes people make when repairing or, worse, "improving" historic masonry buildings.

Mixing new with old

We've all seen buildings with sections of old bricks that have been replaced with new ones. The contrast often is painfully obvious. But the problem is deeper than just the appearance. Modern manufactured bricks may have different rates of thermal expansion and contraction, different moisture vapor transmission, even different compressive strength and weight bearing capabilities. Mixing bricks can hasten deterioration and open leak paths. If enough original bricks are not available, segregate new bricks from old in separate parts of the building.

In addition, modern mortars and joint sealing compounds are stronger and stiffer than historic mortars, so when a wall moves the bricks are more likely than the mortar to crack. Whatever the mortar used, it must be softer than the masonry.

Testing the existing building to determine material properties and finding compatible replacements can take longer, but is worth the effort as it will avoid problems and callbacks.

Moisture control

Masonry materials breathe, allowing moisture vapor to escape. Sometimes, contractors apply a waterproof coating over old bricks, thinking they are protecting them from moisture damage. In fact, they are trapping moisture inside. Masonry should be left uncoated, if possible. If moisture protection is required, consider a penetrating breathable sealer, and be sure to conduct vapor transmission and compatibility testing.

Super-insulating an old masonry building also can cause moisture damage. Insulation keeps the outside of the wall colder, so moisture condenses and increases the risk of freeze-thaw damage. If insulation is added, it should have a value no higher than R-10 and should not incorporate a moisture barrier.

Most moisture damage to old buildings comes from poor drainage, so inspecting and repairing (or adding) downspouts and flashings to keep water off the wall are effective repairs.

Doing too much

Overzealous cleaning is a major cause of damage to historic masonry. The gentlest possible water or chemical cleaning method should be used, and should be tested on a hidden part of the building, first. Abrasive cleaning methods such as sandblasting should not be used.

Some building owners literally want to raise the roof to increase space without altering the façade of a historic building. To do this successfully, the contractor must evaluate the structure to assure it can support the additional weight of a new level. He must also study how the roof ties into the walls and take appropriate measures to assure they can remain standing while the roof is off.

Another common mistake is to replace original windows on the assumption modern windows are more energy efficient. In fact, the biggest energy loss from windows is caused by poorly operating moving parts or by gaps between the window frame and the surrounding stone. If existing windows can be made to operate correctly and fit properly, they should be restored, just like the rest of the building.

Not doing enough

Just "fixing" visible problems without understanding the underlying cause does nothing to prolong the life of a masonry building. For example, stair-step cracks along a mortar joint can indicate uneven foundation settling. Repointing the mortar may improve the appearance, but it won't save the building. If the foundation is not stabilized, the whole building eventually could be damaged beyond repair.

Repairing water damage without resolving the root cause is another example of not doing enough. Contractors need to evaluate the rain gutters, downspouts and window flashings to assure they are directing water away from the masonry.

When repairing or maintaining historic structures, it is critical to take the extra steps required to get it right the first time. The National Park Service publishes a series of bulletins on correct methods for caring for historic masonry buildings at www.nps.gov/tps/how-to-preserve/briefs.htm. In addition, working with architects, preservationists and contractors experienced in masonry restoration can help you avoid costly mistakes and irreparable damage to your building. IMAS

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