

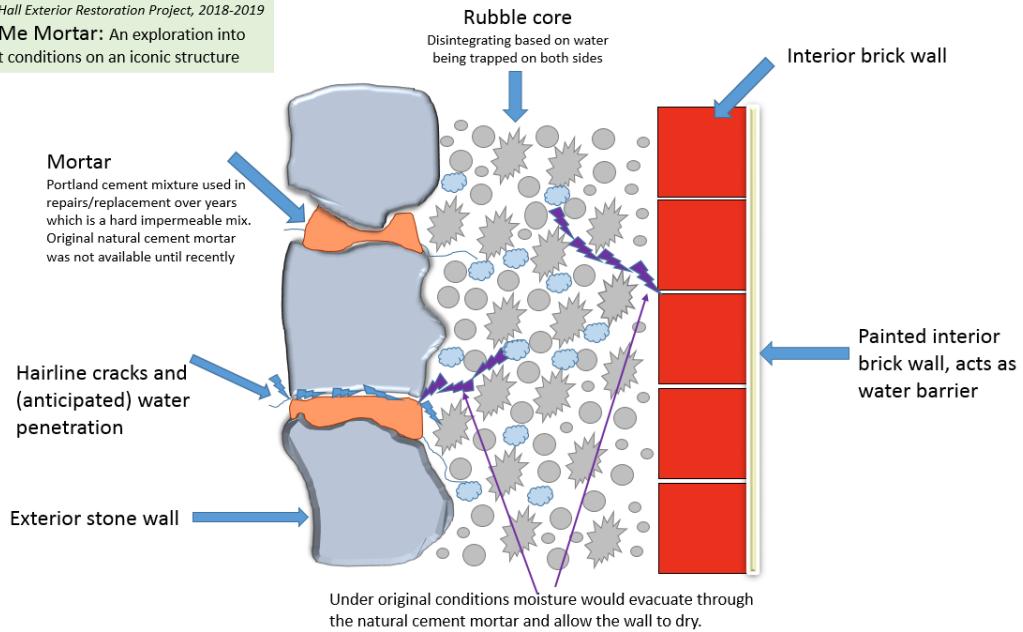
Tell Me Mortar

"An exploration into latent conditions on an iconic structure"

There is often significant discovery when construction begins on any project. When you are embarking on the first comprehensive restoration of the Town Hall's exterior envelope in 137 years, revelations tell a deeper story.

Following the 1886 addition of Town Hall to the original Library, two repair campaigns (1985 & 1997) targeted individual projects consisting of partial masonry restoration, window refurbishment, and multiple roof repairs and replacements. During these individual projects, only specific items were addressed without regard to the total building envelope. The impacts of this piecemeal approach have revealed themselves during today's restoration through the discovery of significantly damaged masonry, five different mortar types throughout the building, concealed rot, and poorly repaired structural roof damage. In 2017, a Feasibility report and subsequent Design process utilized extensive and appropriate investigative methods (non-destructive testing, engineering evaluation, infrared etc.) to help the Town understand the building's needs. Since it is the Town's goal to restore the building to its original performance and characteristics, the project team has endeavored to correct these problems in their entirety. Combining a holistic approach with attention to particular details is best evidenced in the story of mortar and how care and execution of appropriate approaches is integral to true restoration.

Better understanding the complex latent conditions of the entire exterior requires us to take a deeper dive into specific topics, one being the mortar which binds together the stone walls and keeps water out of the building. Town Hall was originally constructed with natural cement mortar which was discontinued and replaced by Portland cement mortars which were stronger, more workable, readily available, but also less permeable. In the past, the repointing (cleaning out and replacing) campaigns utilizing Portland cement mortar only went 1 ½ inches deep and invariably created a unique condition where water could enter through inevitable hairline cracks but not evacuate due to its less permeable nature. In addition the interior brick wall surface was painted creating an equally impermeable barrier on the inside of the building. The combined conditions of water entering and not evacuating inevitably caused deterioration of the rubble core over time. Why is this a surprise? It is only detectable after removing several inches (upwards of 8 inches) of mortar, which is the approach being taken by today's comprehensive restoration. So while the team had drilled and analyzed the mortar without damaging the building to estimate the repointing costs, there was no way of knowing what was behind until deep mortar was removed during construction. See the visual aid below for more detail:



Once the problem was revealed and assessed, the only logical thing to do was to complete the repointing restoration properly with structural integrity. As part of an overall safety and building longevity strategy, the architect and historical analysts devised a plan to install the right product to repoint the exterior stones. With five different mortar colors on the building, the team also had to determine the appropriate color for the new mortar. Luckily, there was another unexpected item the building would reveal. After climbing up a narrow set of stairs and over a three foot barrier into the Town Hall attic, there is a barely weathered section of the original building façade upon which the natural cement mortar original surface has been preserved in time (see picture.) This small section was enclosed after less than two years of exterior exposure and appears to have a pale tint of pink which likely informed previous restorers to use the widely known pinkish mortar color seen on much of the building. Upon further investigation, the team revealed that the “tint” was actually brick dust which had attached to the surface giving the façade of pink when in fact it was a deeper brown.



Empowered with the historical details, knowledge of previous repair and restoration missteps, the team has been returning the Town Hall exterior to its original glory. The mortar is merely one deeper dive example of the effort and care being taken by the entire project team to do things “right.” In a similar way, the other latent conditions which have been unearthed have been met with every effort to make deliberate, long-term, economical, and appropriately aesthetic approaches to properly preserve this historic site. From careful design decisions with particular regard to preservation and safety by the architects, to the high quality work produced with the general contractor and their team of talented masons, and the FMD Staff/PBC team vetting each step, this restoration is a holistic, collaborative labor of love.