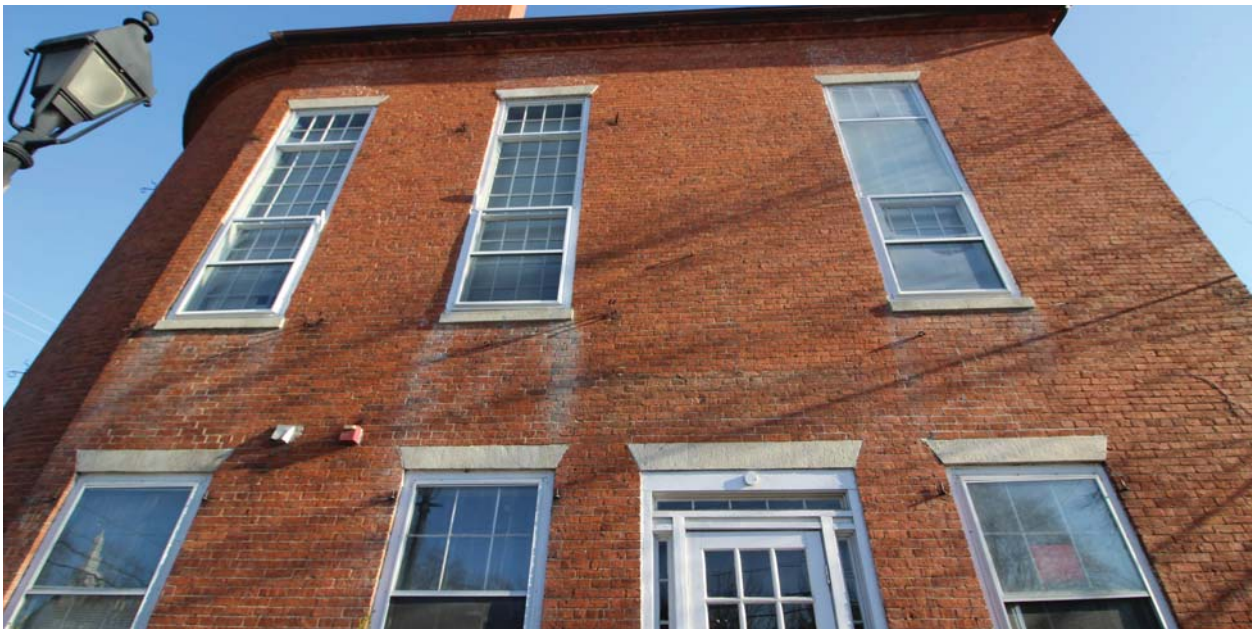


Durham Old Town Hall

Existing Conditions Photo Report

By Jessica MilNeil | December 11, 2019

1 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:01 AM Jessica MilNeil

Southwest Elevation. The Durham Old Town Hall is truly one-of-a-kind. Built in 1925 by Joseph Coe, it is an impressive example of Federal-era brick architecture. This entrance has been referred to as the "store entrance" in HABS drawings. At that time, it was a double door, with no transom or sidelights.

2 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:01 AM Jessica MilNeil

South Corner. This is one of two corners that creates a right angle.

3 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:02 AM Jessica MilNeil

West entrance. Curved door, casing and transom ae early or original. High preservation priority.

4 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:01 AM Jessica MilNeil

The street is very close to the building. Many cities are choosing to remove slip lanes like this one to improve pedestrian access.

5 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:00 AM Jessica MilNeil

Southeast elevation. This elevation was remarkably blank, the two left windows have been added since 1935.

6 NH-108 | Durham, New Hampshire Nov 13, 2019 | 8:58 AM Jessica MilNeil

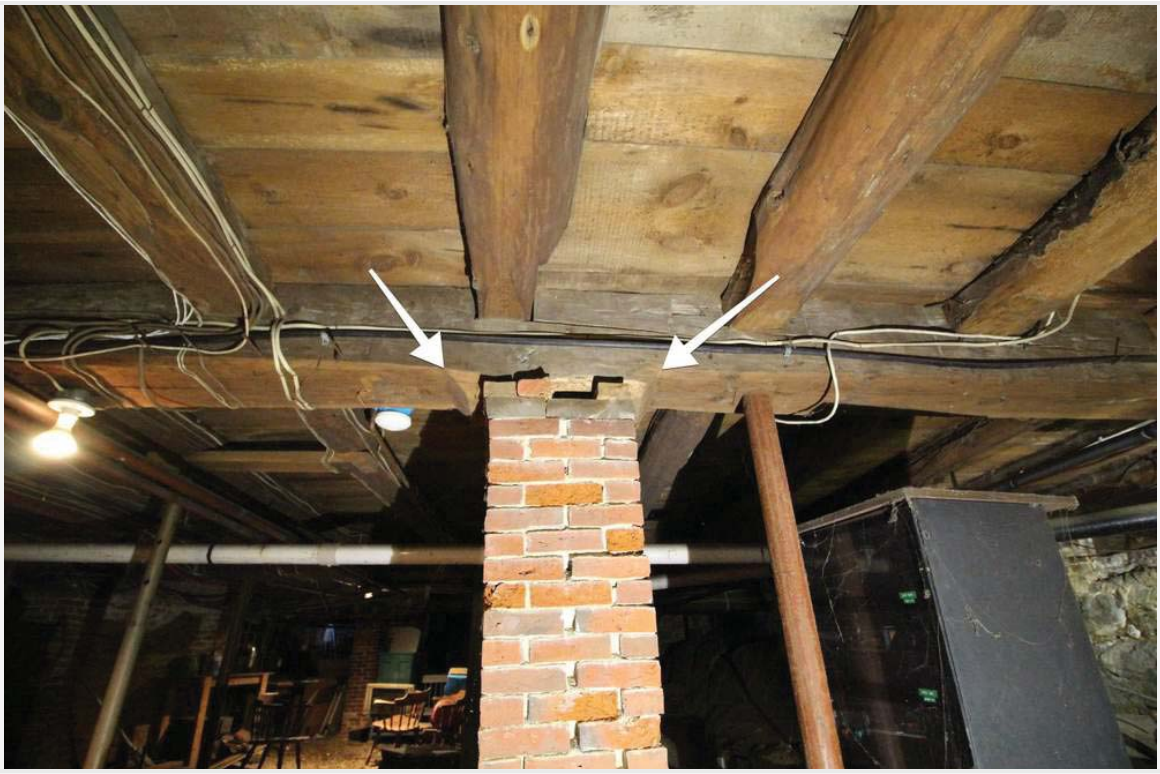
Northeast Elevation. This door has been changed. There are detailed drawings of a vertical plank door present in 1935. The split window was present then, according to photos.

7 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:02 AM Jessica MilNeil

This one-story entrance allows access to the stairs. Notice the granite lintel above the entrance.

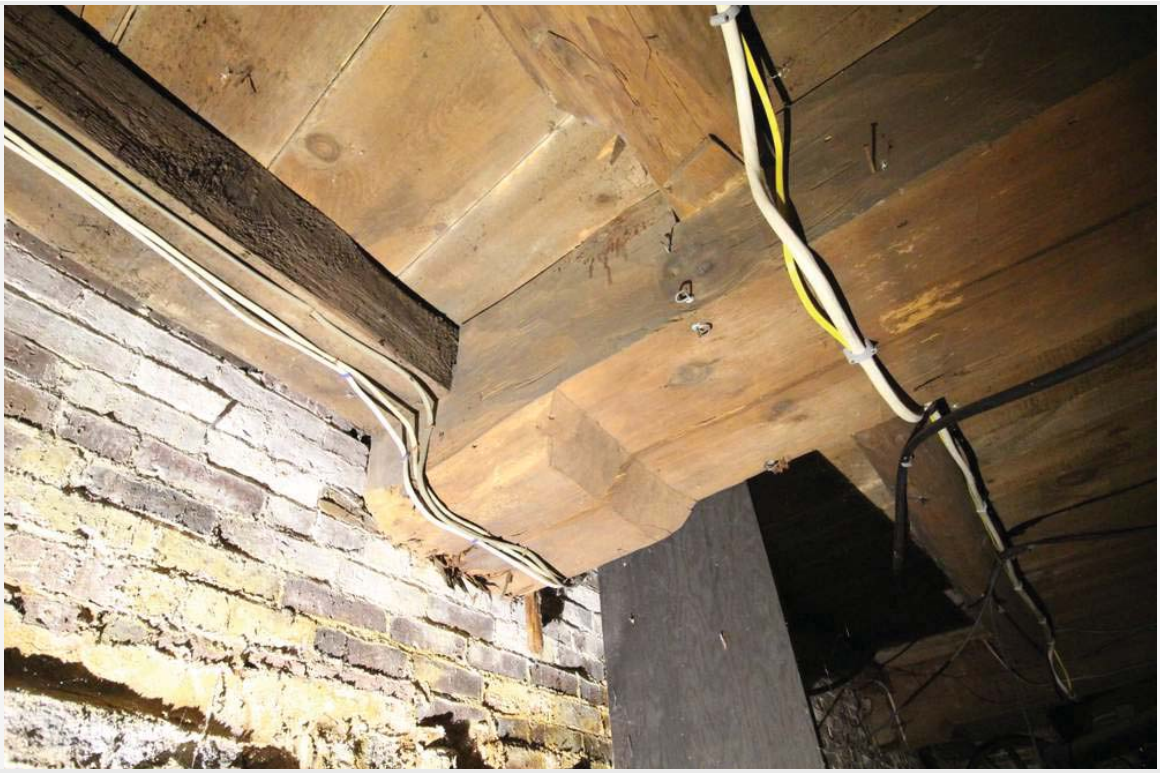
8 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:53 PM Jessica MilNeil

Undercarriage is supported by five major floor girts, only two of which are full length from brick to brick. The girts are enormous; at the piers they measure up to 14" x 17". The girt is relieved where it crosses the open span, which would have taken an enormous investment of labor.



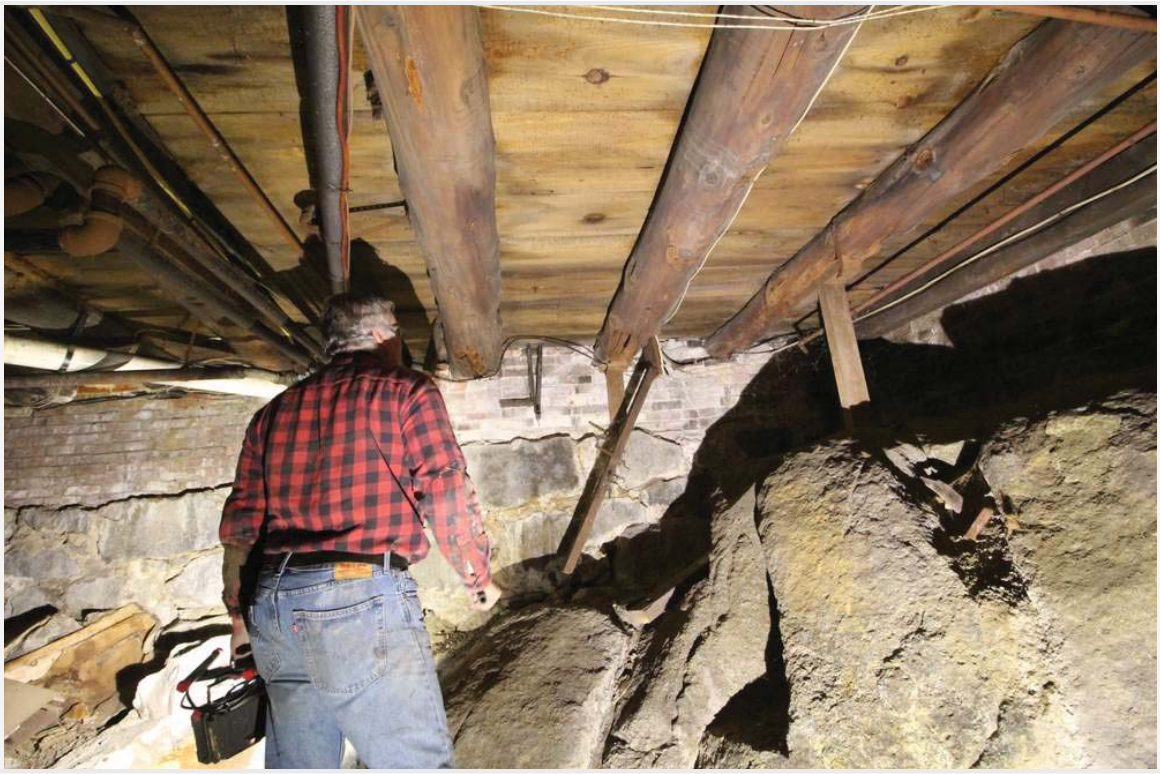
9 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:04 PM Jessica MilNeil

Here, common log joists can be seen cogging into a major floor girt. The floor girt is 3-4" deeper as it passes over the piers; the white arrows point to the chamfers. The pier is spawling and will need to be repaired by a mason with restoration experience.



10 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:07 PM Jessica MilNeil

Here, a major floor girt enters the brick wall. The chamfer is present at this joint as well. This is fortunate because the bottom face is showing signs of rot, but there is ample good timber remaining. A rim joist extends from the girt to the upper left corner.

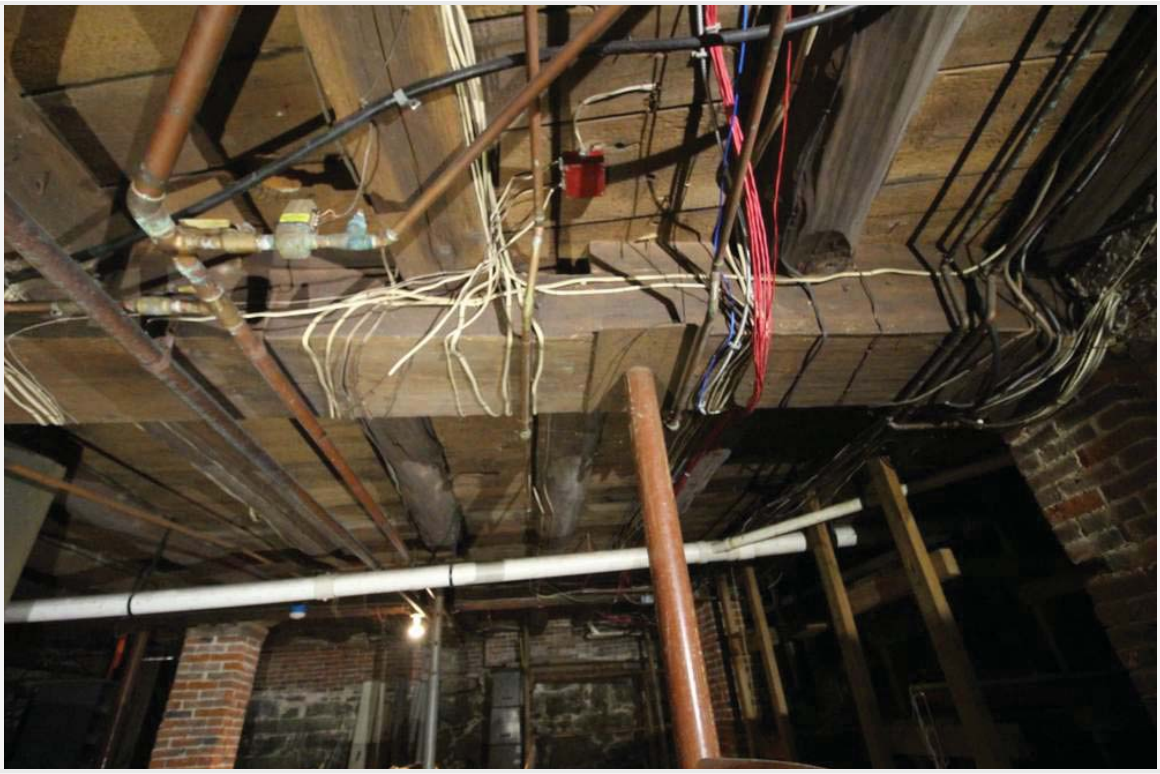


11 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:28 PM Jessica MilNeil

East corner, undercarriage. Log joists and ledge. This is the joist layout under the large rec room. The spacing is ok for tai chi and yoga, but maybe not step classes. The rotted portions will need to be excavated and consolidated. A few ends will need to be replaced with a scarf repair.

12 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:05 PM Jessica MilNeil

South corner, undercarriage. Log joists here are spread pretty wide. Infill joists are a reasonable addition, but should be installed on hangers.



13 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:57 PM Jessica MilNeil

A combination of hewn square and round log joists can be seen on either side of this major floor girt. A lally column provides additional support near an original pier. (probably to carry the excess cable weight).

14 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:01 PM Jessica MilNeil

This floor girt borders the quadrant of joists in the west, rounded, corner. The west floor joists have been sistered with conventional 2x8s, but the new joists were hung on nailed cleats. The cleats should be replaced with proper hangers.

The white arrows point to areas of rot. This timber is large and it may be possible to excise rot and leave the remainder to support the floor. There is some indication of center rot, however. If it is extensive, the entire floor girt will need to be replaced.

15 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:00 PM Jessica MilNeil

West corner, with log joists, hewn, squared joists, and sisters.

16 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:05 PM Jessica MilNeil

Undercarriage, standing in the south corner, looking west. The gravel floor allows water vapor to enter the basement from the ground up. Instead of a vapor barrier, we recommend installing interior perimeter drains and a sump pump, as well as exterior drainage, where feasible.

17 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:28 PM Jessica MilNeil

East corner, undercarriage. Ledge is very close to grade here and limits drainage capabilities.

18 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:12 PM Jessica MilNeil

Nearby, along the northeast foundation wall, an appliance drains into the basement. This is not what we mean by "installing drainage."

19 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:59 PM Jessica MilNeil

Joists in the west quadrant are badly rotted and have been sistered. The entire assembly should be painted with Bora-care fungicide and the sisters hung on hangers.

20 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:15 PM Jessica MilNeil

Closeup of joist in the west quadrant. This joist will probably need to be replaced in full.

21 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:15 PM Jessica MilNeil

The short floor girt bordering the west quadrant is badly rotted. Fortunately, the timber is quite large, 14" x 14". Rot should be excised and the remainder consolidated with epoxy. A lally column should be installed at its midspan, where a floor girt comes in the from the southeast wall and intersects.

22 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:30 PM Jessica MilNeil

Center floor joists, northeast bay. These floor joists show evidence of a former fire. They also show some rot. The damage can probably be addressed with excavation, epoxy consolidation and application of Bora-care.

23 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:10 PM Jessica MilNeil

These are the joists further to the east in the northeast bay. The damage here is worse.

24 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:28 PM Jessica MilNeil

These joists will need to be repaired with scarf repairs, and with the scarf supported over a short post and footing pad, or directly onto the ledge. Alternately, the joists may need to be replaced in full, which is more invasive and expensive.

25 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:26 PM Jessica MilNeil

This rim joist is rotting where it touches the brick wall. Water condenses against the cool masonry and gets trapped against the wood, causing rot.

26 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:20 PM Jessica MilNeil

This is the NW end of the center floor girt. The end has rotted so badly that it dropped out of its brick pocket and is now being support on a 4x4 bolster and 2" pad. This end will need to be replaced and scarfed back into good wood.

27 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:21 PM Jessica MilNeil

Above is the same center floor girt as it passes by the corner of the vault. It is badly rotted here, too.

28 NH-108 | Durham, New Hampshire Nov 13, 2019 | 3:07 PM Jessica MilNeil

This is the opposite end of the timber, where it enters the southeast wall. Here, the rotted material can be removed and replaced with a pad, white oak might be a good choice here.

29 NH-108 | Durham, New Hampshire Nov 13, 2019 | 1:44 PM Jessica MilNeil

This large open space is created by the heavy timbers above. This room is supported by the timbers in Photos 11,12,16,17, 22-24.

30 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:31 PM Jessica MilNeil

The major second floor girts were intended to be seen. Their exposed corners were molded with a molding plane. Evidence of former column locations can be seen in the paint shadow lines.

31 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:30 PM Jessica MilNeil

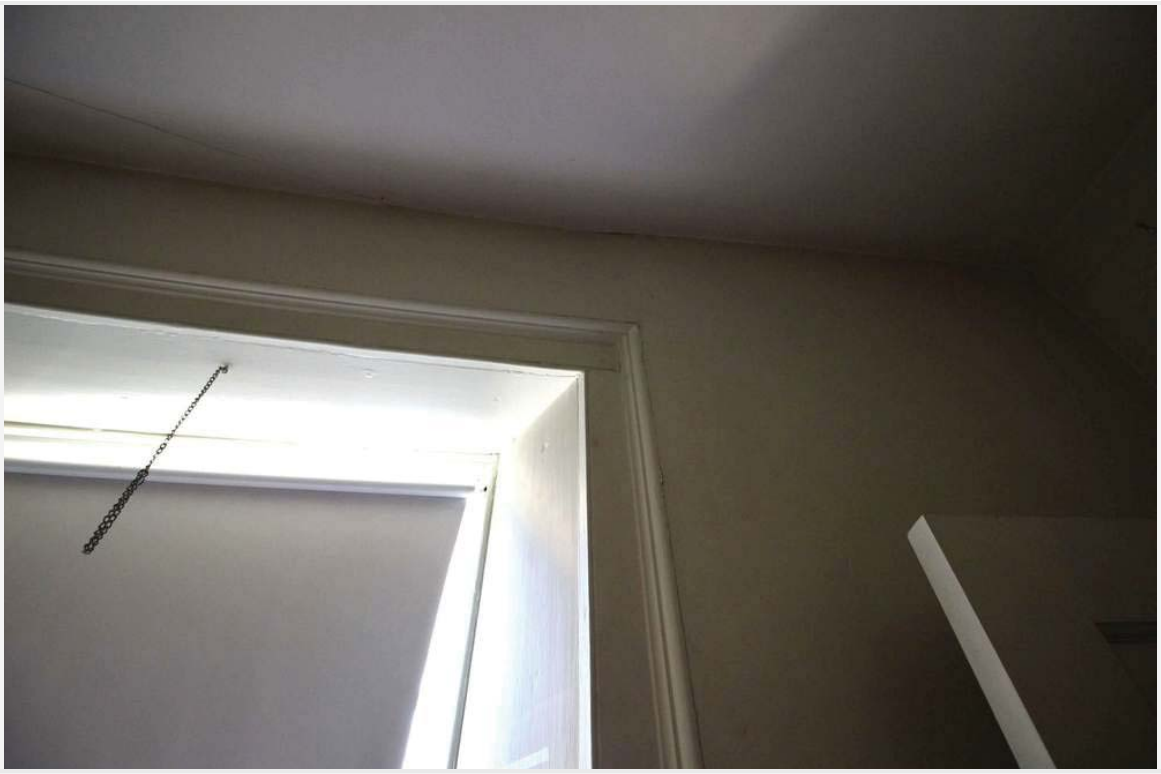
Girts were also left exposed in the corridors. It is lovely that the frame can be seen, rather than hidden behind a drop ceiling.

32 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:29 PM Jessica MilNeil

Another girt intersection is visible in the corner of the corridor, showing that the partition walls align with timbers, where possible. The exposed corners of these timbers are molded, as well.

33 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:28 PM Jessica MilNeil

Like the rest of the building, the corridors not parallel with exterior walls. There is a bend in the corridor where it passes the leading edge of the former vault.



34 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:30 PM Jessica MilNeil

The casing surrounding this exterior window in the front office is likely old or original. The casing is flat with a simple interior bead. Significantly, the back-band has been used as a ground for the plaster.

35 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:32 PM Jessica MilNeil

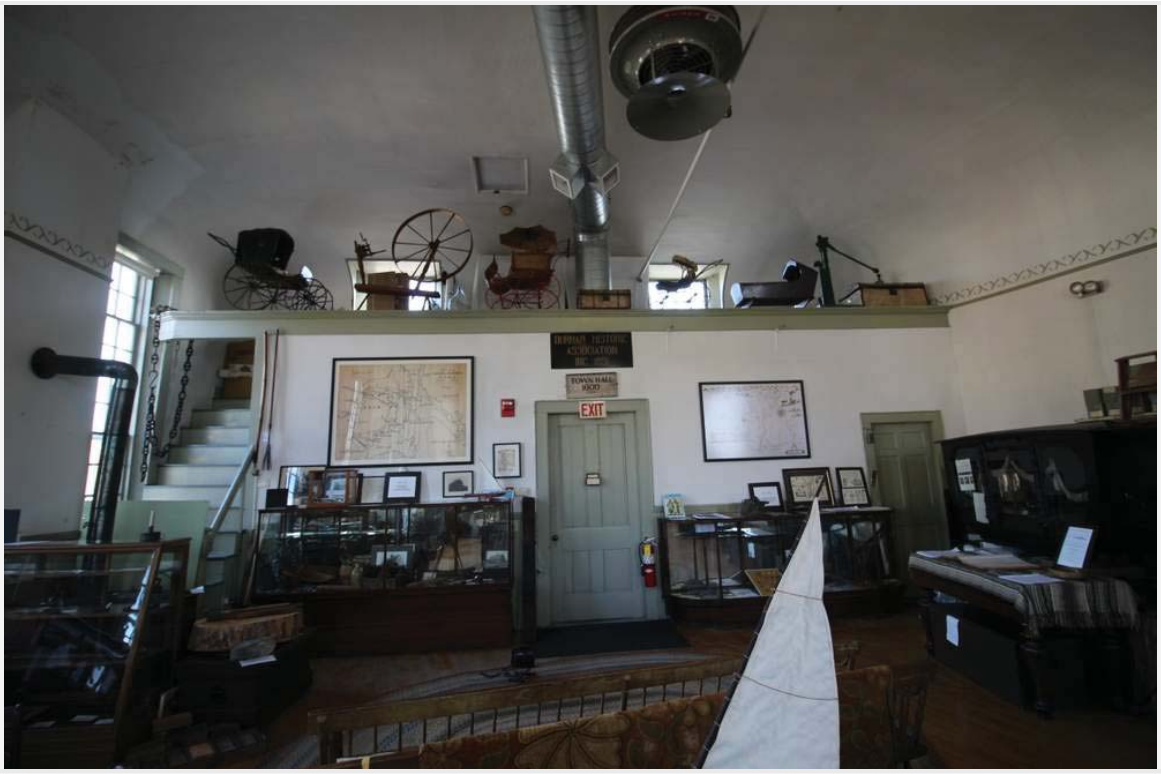
These door casings within the partition walls are a later addition, but they blend well will the original elements of the building.

36 NH-108 | Durham, New Hampshire Nov 13, 2019 | 1:45 PM Jessica MilNeil

This door appears to retain its original casing and back-band, especially where it is co-planar with the surface of the plaster. The door and transom show an extremely high level of craft and would be extremely difficult to duplicate.

37 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:04 AM Jessica MilNeil

The stairs to the second floor are quite wide for a 19th century building. The bottom stair is co-planar with the outside wall. Presumably, the stairs were altered when the third story was removed, in 1852.



38 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:10 AM Jessica MilNeil

The second story partition walls have been in place since the town removed the third story. Note the heating and ductwork.

39 NH-108 | Durham, New Hampshire Nov 13, 2019 | 10:12 AM Jessica MilNeil

Looking out into the hall from the balcony. The ductwork looms large, and makes it even more difficult to access the attic.

40 NH-108 | Durham, New Hampshire Nov 13, 2019 | 10:12 AM Jessica MilNeil

Balcony windows may be original to the third story. They are cased by both the angled casing found throughout the building, and an extension jamb that follows the curve of the coved ceiling. The jambs and the casing are beautifully hand planed.

41 NH-108 | Durham, New Hampshire Nov 13, 2019 | 1:15 PM Jessica MilNeil

These balcony stairs are steep and lovely. One wonders whether they date to the 1852 renovation, or were the original means of ascent to the third floor.

42 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:45 PM Jessica MilNeil

The ceiling is coved in four directions, creating excellent acoustics in the hall.

43 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:45 PM Jessica MilNeil

Heating systems are overloading the framing above and drowning out speakers when presentations are given.

44 NH-108 | Durham, New Hampshire Nov 13, 2019 | 1:37 PM Jessica MilNeil

The plaster at the center of the ceiling is showing cracks and may be loose. Loose plaster can be re-adhered and preserved.

45 NH-108 | Durham, New Hampshire Nov 13, 2019 | 1:23 PM Jessica MilNeil

The heating system or ductwork appears to be leaking and causing damage to the ceiling and walls below.

46 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:45 PM Jessica MilNeil

Chimneys show evidence of long term leakage and multiple generations of paint and plaster repair.

47 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:04 AM Jessica MilNeil

Attic and roof system looking southwest. The roof is framed out of principal rafters, hip rafters, gable rafters, jack rafters and the horizontal purlins that connect them. Arron leans against a modified king post, which picks up the principal rafters, hip rafters and gable rafter of the northeast end.

48 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:04 AM Jessica MilNeil

The rafters are connected by horizontal purlins which fan out over the pitch, rather than align with the ridge or the exterior wall. The framing is covered in vertical sheathing.

49 NH-108 | Durham, New Hampshire Nov 13, 2019 | 10:31 AM Jessica MilNeil

The hip rafters and ridge purlin are supported by a modified king post. In a typical king post truss, the king post hangs from the rafters, and supports the tie beam at the middle of its span.

50 NH-108 | Durham, New Hampshire Nov 13, 2019 | 10:54 AM Jessica MilNeil

The tie beams cross the exterior walls over a wide plank and support the fascia and cornice. Here the curved fascia can be seen, the interior face was scored to create the curve. The rafter lands on the end of the tie beam in a nice, tight birds-mouth joint.

51 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:02 AM Jessica MilNeil

The roof framing is beautifully hewn. Another beautiful birds mouth here.

52 NH-108 | Durham, New Hampshire Nov 13, 2019 | 10:59 AM Jessica MilNeil

This birds-mouth has suffered from water infiltration. There also appears to be a fracture along the grain, which may be a separate issue related to the thrust of the rafters.

53 NH-108 | Durham, New Hampshire Nov 13, 2019 | 10:47 AM Jessica MilNeil

The "king post" has the flared head typical of a king post truss. The post appears to have dropped away from the principal rafters slightly.

54 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:24 AM Jessica MilNeil

This is the back side of the same king post. The rear half accepts two additional hip rafters and a rafter coming up from the northeast wall.

55 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:17 AM Jessica MilNeil

This is the opposite "king post", showing the ridge purlin and its associated brace. There are two additional jack rafters intersecting the principals and hips at this location.

56 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:15 AM Jessica MilNeil

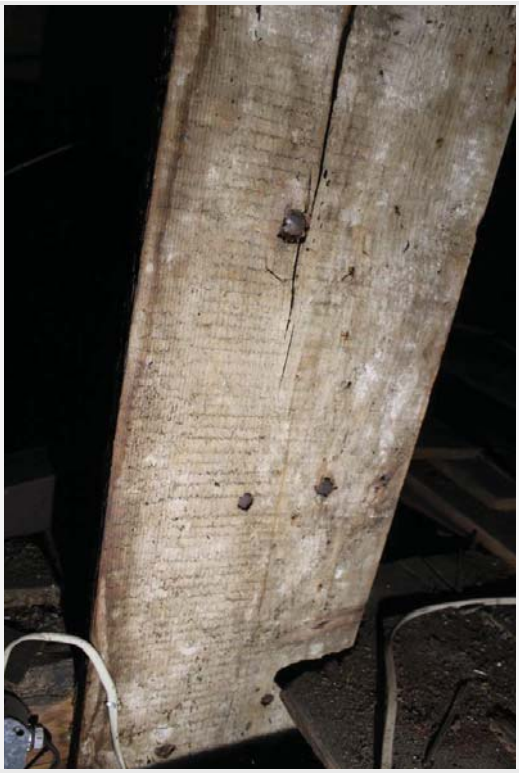
The ceiling girts join the tie beams with a thick, horizontal tenon. The joint is slightly open, due to the sag of the ceiling.

57 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:06 AM Jessica MilNeil

In this ceiling frame, the "king post" joins to a ceiling girt rather than a tie beam. The joint has opened by more than 2". There is a wide board nailed to the faces of the beams, and secured with wrought nails.

58 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:11 AM Jessica MilNeil

Here, the arrow points to the joint's broken pin.



59 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:16 AM Jessica MilNeil

The improvised bolster is secured with wrought nails. A wrought stirrup would have been better, but this appears to have worked, so I guess we should be learning rather than judging.

60 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:40 AM Jessica MilNeil

South hip rafter and strut. Four struts were installed beneath the hip rafters. The joints are at varying levels of spread, but the culprit appears to be the sag in the tie beam, the hip rafter appears to be stable.

61 NH-108 | Durham, New Hampshire Nov 13, 2019 | 11:38 AM Jessica MilNeil

West hip rafter, strut and jack rafters. This photo shows the curve of the roof over the west corner, and the kerfed and curved purlins that support it.

62 NH-108 | Durham, New Hampshire Nov 13, 2019 | 10:56 AM Jessica MilNeil

The chimney headers are joined to the adjacent ceiling joists with a double tenon more typical of furniture construction. Little details like these confirm the skill of the joiner.

63 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:47 PM Jessica MilNeil

West corner, from northwest wall. The masonry is very skillfully laid. The bricks are old, the joints are narrow and the mortar is relatively soft. The gutter on this face has been replaced, but the profile does not appear to match the original.

64 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:47 PM Jessica MilNeil

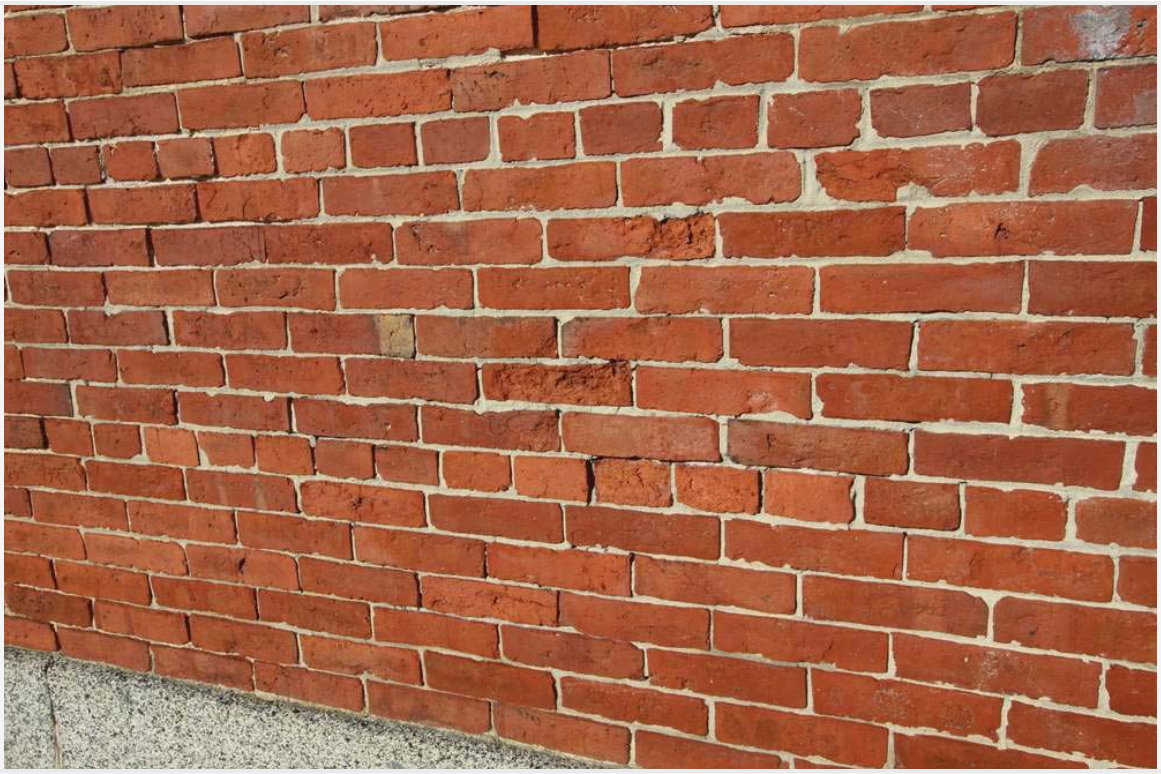
West corner, from southwest wall. The building has lasted so long because it was built so well.

65 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:47 PM Jessica MilNeil

The gutter extends along the southwest face and the downspout drains off to the southeast.

66 NH-108 | Durham, New Hampshire Nov 13, 2019 | 8:59 AM Jessica MilNeil

The bricks and mortar are relatively soft by contemporary standards. The Hill report recommends hand-raking when re-pointing.



67 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:52 AM Jessica MilNeil

This part of the wall was repointed.

68 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:49 AM Jessica MilNeil

Granite lintel over an original window.

69 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:48 AM Jessica MilNeil

Concrete-style header with metal lintel. This window was added after 1935.

70 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:51 AM Jessica MilNeil

71 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:50 AM Jessica MilNeil

Concrete-style sill is a pretty accurate reproduction. Window trim needs scraping and repainting.

72 NH-108 | Durham, New Hampshire Nov 13, 2019 | 2:48 PM Jessica MilNeil

Stone steps should be re-set to ensure that they drain water away from the building rather than trap water against it.

73 NH-108 | Durham, New Hampshire Nov 13, 2019 | 9:55 AM Jessica MilNeil

The door is a later replacement and is showing signs of rot. Instead of repair, it may make sense to reproduce the vertical plank door drawn in the HABS details.