

## ROOF/DOME

The narrow, flat surface of the roof around the dome is covered in mid-1970s, flat-seamed sheet metal. A 7-1/2" wide gutter wraps around near the edge of the roof to drains in the northeast, northwest, southeast, and southwest corners.

Access to the roof is through a roof hatch in the southwest corner. The opening dates to the post-fire construction. A gabled door, covered with sheet metal, opens to stairs that descend to the southwest stairwell. The flat roof surface immediately east of this hatch may be the location for the original bell.

The chimney vents protrude through the east and west ends of the roof; metal mesh screens cover the vents. Ventilation pipes extend up through the northeast, northwest, and southwest corners of the roof. Originally, there were probably chimney flues at all four elevations. The 1856 lithograph published by Casimir Bohn [*Figure 33*] shows some of these chimneys, and they are seen in views taken after the fire. In 1827, sheet metal funnels may have been installed at each flue. The north and south chimneys were needed for the fireplaces in the north oval rooms and the stair landing fireplace in the main hall. A chimney must have also vented the small ovens in the ground floor east oval room.

The seven concentric steps at the base of the dome are finished in 3'-10" to 4'-1" wide flat-seam sheet metal. The first riser is 2'-6" high, and 1'-9 1/2" deep; the five intermediate risers are 1'-3-1/2" to 1'-4 1/2" high, and 1'-2 1/4" to 1'-6-3/4" deep. The top riser is 1'-1 1/4" high, and 1'-6 3/4" deep. The original steps were constructed of wood, and covered in tin.

The Guastavino tile dome is made up of two shells, approximately 1'-6" apart. Between the tile layers, the cement layers are approximately 1/2" thick. The outer dome is currently covered in flat-seam sheet metal, installed in the mid-1970s. According to the Ballou & Justice drawings, the metal was installed over 1-5/8" insulation, and was tied to the tile structure through 2x2 treated wood strips, fastened with 1/4" diameter bolts with lead cinch anchors.

The original wood-framed dome had a slightly lower profile, according to Jefferson's front elevation drawing. In 1824, the roof and dome were covered in tinplate and copper was used for gutters. By 1826, the roof was leaking and the surfaces were covered or patched with additional tinplate.

The mid-1970s extruded aluminum skylight frame has twenty-eight sections, each with double glazing. The torus curb around the oculus opening, installed in the mid-1970s, is covered with sheet metal. The diameter of the current opening is about 17'-8"; Jefferson's elevation drawing indicates an opening of above 16'.

Jefferson's skylight was problematic, as it leaked. There were constant requests to fix the leaking skylight, as water continued to come into the library. To remedy the problem, in around 1840 a large glass and tin lantern was installed over the opening. Atop the