

Measurements guide of Form A

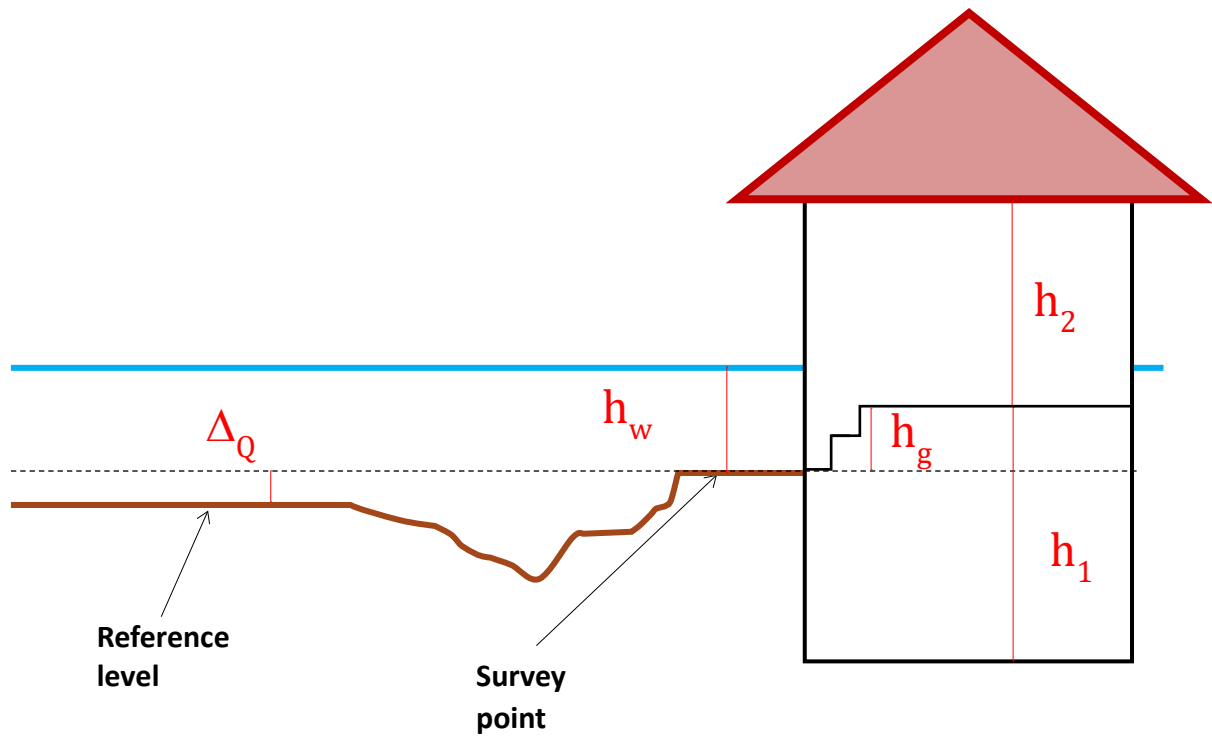


Figure 1. Sketch of the cross section of a building depicting the measurements taken in the field (Δ_Q , h_w , h_g , h_1 , h_2), reference level and survey point. Case with Δ_Q and h_g positive, and h_1 negative.

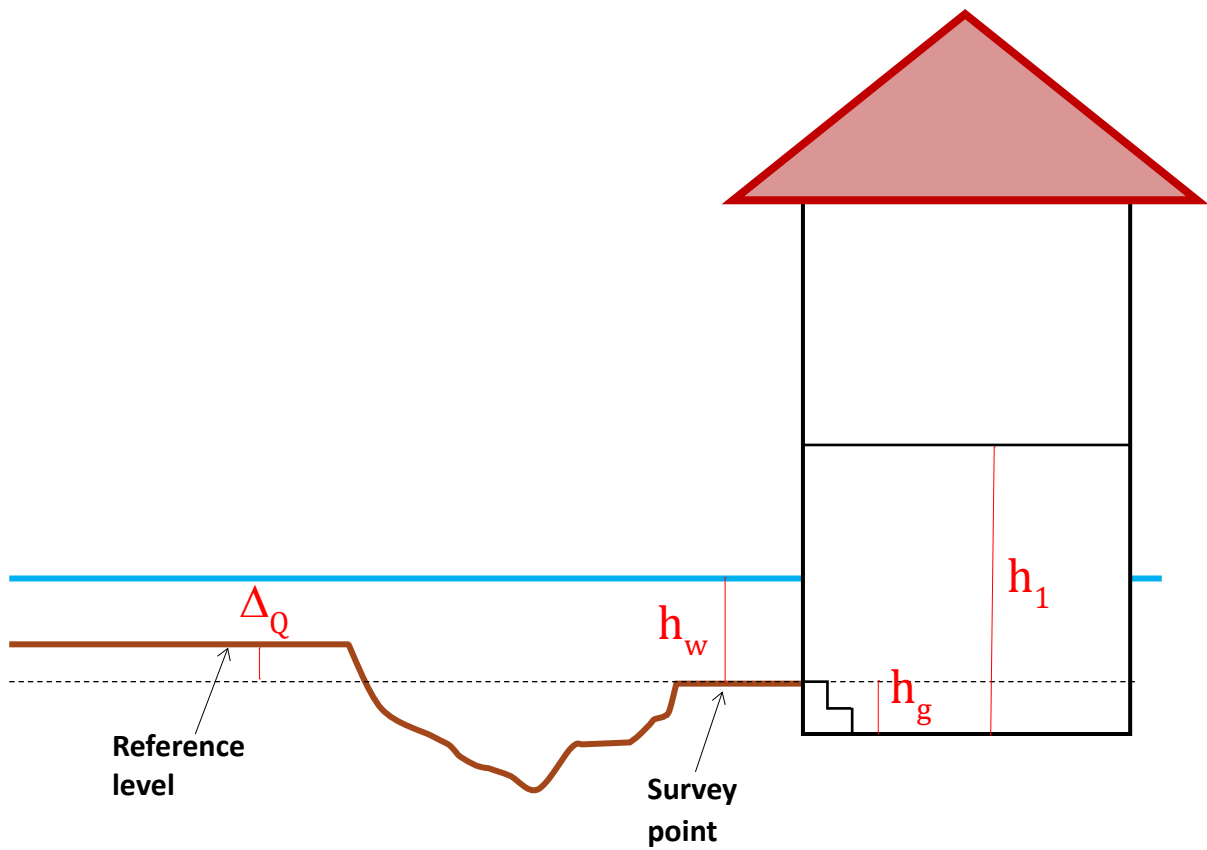


Figure 2. Sketch of the cross section of a building depicting the measurements taken in the field (ΔQ , h_w , h_g , h_1), reference level and survey point. Case with ΔQ and h_g negative, and h_1 positive.

Variables

- ΔQ indicates the height difference between the elevations of the survey point and the reference level. The value is positive when the survey point is located at a higher elevation relative to the reference level point, and negative when it is below it. Figure 1 depicts the case in which this measure is positive; Figure 2 depicts the case in which this measure is negative. The measurement is taken in the field by two surveyors.
- h_w indicates the external water depth outside the building, measured at the survey point.
- h_g indicates the height of the first floor with respect to the survey point. This measurement is taken, for example, when the first floor is accessed via stairs. It is positive when the first floor is higher than the survey point, and negative when it is lower. Figure 1 depicts the case in which this measure is positive; Figure 2 depicts the case in which this measure is negative.
- h_1 represents the total height of the first floor measured relative to the h_g level. It is positive when the first floor is above the h_g level, and negative when it is below. Negative values clearly indicate that the first floor is a basement or semi-basement level. Figure 1 depicts the case in which h_1 is negative; Figure 2 depicts the case in which h_1 is positive.
- h_2 represents the total height of the second floor measured relative to the h_g level if h_1 is negative, and relative to h_1 if h_1 is positive. h_2 is always positive, as it refers to floors above ground level.

Survey Point and Reference Level

- The **survey point** serves as the primary spatial reference from which vertical distances to the building floors and reference level are recorded relative to this point. Specifically, it is the exact location on the ground where the external water depth h_w is measured.
- The **reference level** is a fixed elevation benchmark defined locally for each building, typically corresponding to a flat area adjacent to that building. This allows, by using a Digital Terrain Model (DTM), for all measured heights to be accurately converted into absolute elevations (e.g., the water surface elevation at the building location, provided in *FORM_A.xls*, was determined by summing ΔQ , h_g , and the ground elevation of the reference level).