Calculation Sheet for Extensive Green Roofs

Step A. Site Planning Recommendation
Define goals and primary function of extensive green roof based on the Extensive Green Roof Step by Step Design Procedures beginning on page 18.5.6-7 as well as Table 18.5.6-A. Refer to these sections as needed throughout the remainder of this calculation sheet.

Step B. Determine the Required Water Quality Volume Rain Event, \( R_{WQV} \) in inches (Refer to Chapter 18.3; A minimum depth of 0.6 inches must be used):

\[ \text{inches} \]

Step C. Determine the total runoff volume and drainage

1. \( A = \) Contributing drainage area to green roof:
   \[ \text{ft}^2 \]
2. \( R_{WQV} = \) Required WQ\( v \) Rain Event in inches:
   \[ \text{inches} \]
3. \( I = \) Impervious cover of the contribution drainage area in percent:
   \[ \% \]
   a. \( R_V = 0.05 + 0.009 (I) = \)

4. \( WQ_V \) Required = \( (A/12)(R_{WQV})(R_V) = \)
   \[ \text{ft}^3 \]
   Note: The green roof total volume should be equivalent to the Required \( WQ_V \)
5. Calculate required volume of green roof based on the void space of the planting media and storage of the drainage layer so that it can store the \( WQ_v \) per Table 18.5.6-A.
6. Volume of water retained by green roof:
   \[ \text{ft}^3 \]
7. Is the volume of water retained by green roof greater than the \( WQ_v \) Required?
8. Proceed to step D.

Step D. Complete O&M documentation.

Additional Calculation and Explanation (Required if design deviates from calculation sheet):

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