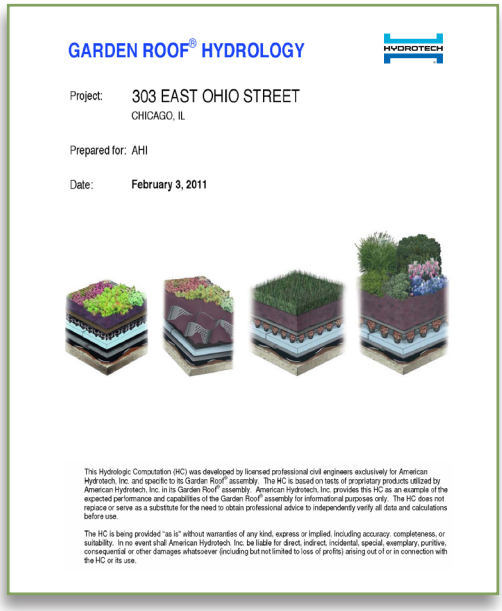
HYDROTECH HYDROLOGY TOOL (HHT)

Hydrotech's Hydrology Tool (HHT) is an industry first.

Building sites and the structures on them cannot be developed without accounting for their overall stormwater impact on the surrounding region, with respect to the volume of water runoff as well as water quality. Green roofs are widely recognized for their stormwater management benefits and are now being utilized by design teams in their green infrastructure efforts. Currently there is little (if any) data available to assist an architect or engineer in their assessment of a green roofs specific contribution…until now.

Recognizing the lack of accurate and quantifiable information in the marketplace, Hydrotech developed a hydrologic tool specific to our Garden Roof® Assembly, based on known and accepted means and methods for the design team to utilize in developing green infrastructure BMP and LID concepts for any given site.


GARDEN ROOF® HYDROLOGY

Project: 303 EAST OHIO STREET
CHICAGO, IL

Prepared for: AHI

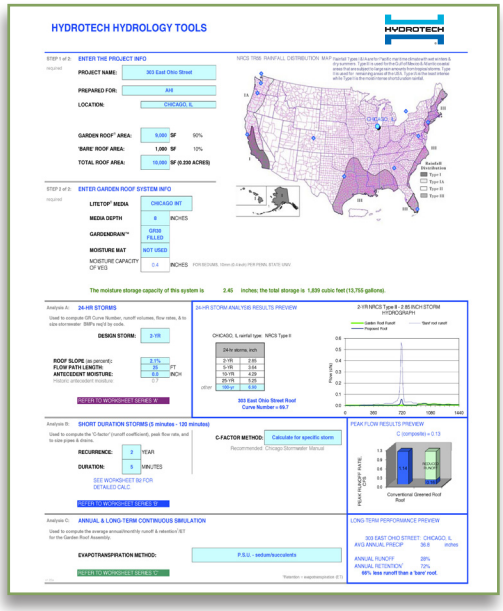
Date: February 3, 2011

This Hydrologic Computation (HC) was developed by licensed professional civil engineers exclusively for American Hydrotech, Inc. and specific to its Garden Roof® assembly. The HC is based on tests of proprietary products utilized by American Hydrotech, Inc. in its Garden Roof® assembly. American Hydrotech, Inc. provides this HC as an example of the expected performance and capabilities of the Garden Roof® assembly for informational purposes only. The HC does not replace or serve as a substitute for the need to obtain professional advice to independently verify all data and calculations before use.

The HC is being provided "as is" without warranties of any kind, express or implied, including accuracy, completeness, or suitability. In no event shall American Hydrotech, Inc. be liable for direct, indirect, incidental, special, exemplary, punitive, consequential or other damages whatsoever (including but not limited to loss of profits) arising out of or in connection with the HC or its use.

This tool calculates how the Garden Roof Assembly affects stormwater runoff volumes, the rate at which it slows water that does run off the roof, long and short term simulations and the potential for LEED compliance. All of these are calculated by utilizing site specific storm events, as well as other unique regional climatic conditions.

The HHT will provide a design team and/or owner with an array of project specific stormwater data based on the selected Garden Roof Assembly components utilizing their particular performance characteristics. As more agencies and municipalities across the country begin to adopt green roofs as an effective green infrastructure tool, it is critical to be able to definitively show how a given roof can be integrated into a project's overall requirements, goals, and/or restrictions.


HYDROTECH HYDROLOGY TOOLS

Why are vegetated roofs effective green infrastructure tools? They...

- Intercept, retain rainfall and delay runoff
- Decrease run-off into combined storm/sewer systems (CSO's)
- Decrease sediment and soil erosion into waterways
- Reduce non-point source pollution (oils, gasoline, fertilizers, etc)
- Absorb airborne toxins and particulate matter that are destined for waterways

How will the HHT benefit the design team?

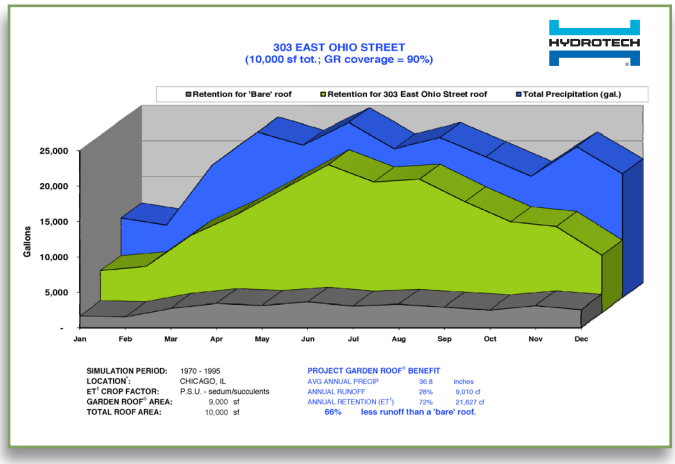
It will...

- Help the design team address and meet local and project specific green infrastructure and stormwater management requirements
- Help with BMP and LID processes and concepts
- Prove compliance with project specific LEED requirements
- Prove Hydrotech's Garden Roof® Assembly performance by accounting for local climatic and assembly variations
- Determine the "real life" retention/detention abilities of the Garden Roof Assembly
- Reduce or eliminate dollars spent on retention/detention ponds, cisterns and bio-swales

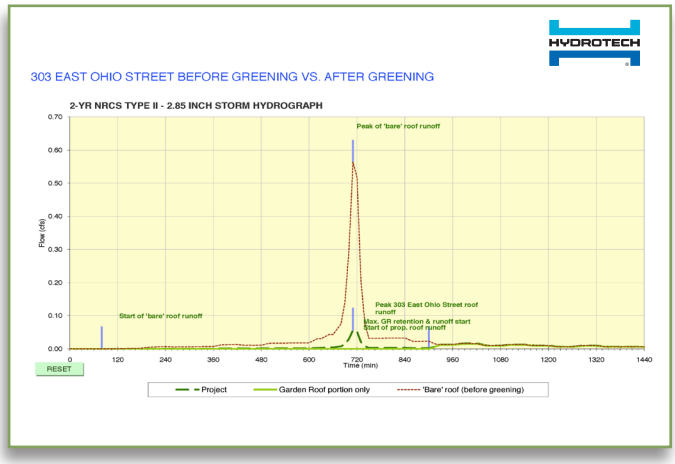
How can the HHT meet the project specific requirements?

By using established means and methods to meet project specific requirements, the HHT can provide the following information...

- **24 hour storm event evaluations (TR55)**
  - Provides a composite Curve Number for both vegetated and non-vegetated roof surfaces
  - Predicts retention and runoff volumes
  - Provides anticipated lag time (the time at which water begins to flow off the roof, compared to a typical "bare" roof)
- **Short duration storm events (Rational Method)**
  - Provides a composite C-factor (runoff coefficient) to help size drains/pipes, detention/retention ponds, cisterns, etc.
  - Predicts peak flow (how fast water is leaving the roof)
- **Long term storm evaluations**
  - Predicts long term and short term retention, run-off and evaporation values
  - Effectively compares a Garden Roof to a "bare" roof
- **Help to establish LEED compliance**
  - LEED SS 6.1 & SS 6.2
- **Pass/Fail information**
  - For certain city-specific requirements and incentive programs



Long Term Performance
Comparison of retention on a "bare" roof, Garden Roof and total rainfall



Hydrograph
Graphically depicting the "peak flow" of this roof

For your project specific HHT, contact Hydrotech's Garden Roof Department at
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