

How The Best Quality Green Roof Systems Can Improve Stormwater Mitigation

Why some engineered systems are more effective than others

key points:

- storm events can overload urban drainage systems
- municipalities are introducing stricter building by-laws to enhance storm water management
- standard green roofs reduce run-off
- superior green roof systems employ retention reservoirs which reduce and delay run-off

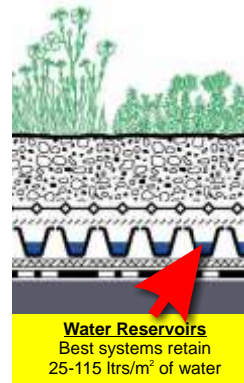


Most urban areas are covered with impervious surfaces, which deflect all of the rainwater in storm events into storm sewer systems, often overburdening their capacity during heavy rainfall.

Storm water mitigation is one of the primary benefits of green roofs in urban areas. The ability for a green roof system to retain and slow down water run-off during storm events is a key performance factor.

Many green roof systems rely on the growing medium, plants and moisture mats alone to retain the water, while the best engineered systems have water retention reservoirs designed into their drain boards.

As municipal governments in North America begin to follow the German FLL guidelines and introduce storm water mitigation into their bylaws, the water retention performance of green roof systems will be critical.



When specifying green roof systems, architects, landscape architects and municipal engineers will need to be increasingly aware of storm water retention capacity and specify green roof build-ups that are the best performers for storm water management.

➤ For more information, visit the green roofs section at: www.architek.com

Green Roof Systems With *Drain & Retain* Drainage Boards Are More Sustainable



Many new green roof systems use drain-only build-up systems in the form of mats or dimple board. This may work in extensive applications for drainage, however these green roof build-ups often require secondary irrigation systems to make up for the lack of water retention. Water reservoirs incorporated into the drainage board like ZINCO'S FLORADRAIN insure the health and vitality of the plant life and reduces further energy use for irrigation from local fresh water sources.

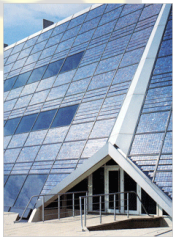
lunch & learn



Architek is an AIA/AIBC Education Provider on a range of subjects pertaining to green and sustainable building envelope design. To arrange a session, email us at lunchandlearn@architek.com or call us in Vancouver BC at 604 861-9446 or Seattle WA toll-free at 1 888 317-5585 or 206 447-1345.



Building Integrated Photovoltaic (BIPV) – Which Is The Right Product?

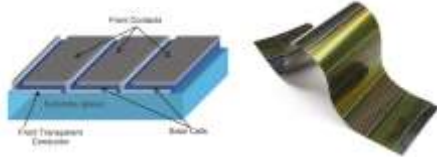


Building Integrated Photovoltaic or BIPV is starting to emerge in many contemporary commercial building designs. By integrating a grid-tied photovoltaic array into the envelope design, forward-thinking architects are using the unique aesthetics of photovoltaic modules as an integral part of their overall design theme.

Many architects prefer the subtle approach of the newer amorphous silicon or thin film technology which allows the PV to be fully integrated into the design on roofing materials, inside glazing units or elsewhere.

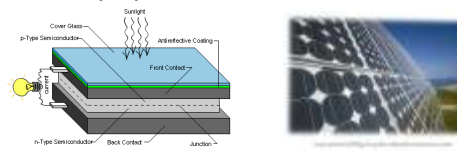
However, there is a trade-off when considering the type of PV to use. Although thin film is less expensive and easier to integrate, traditional poly-crystalline modules provide the greatest kilo-watt output per square foot and are proven to be more durable. External canopy applications, that is PV in place of spandrel and canted curtain wall appear to provide the best overall approach for design and performance.

Thin Film - amorphous silicon



Lower Cost
Modest output potential (4-5 watts per sq. ft.)
Less durable - shorter lifecycle

Mono/Poly-crystalline silicon cells



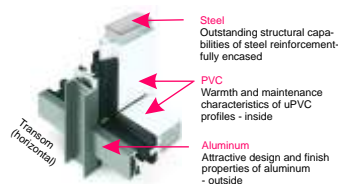
Higher Cost
Greater output potential (10-12 watts per sq. ft.)
Durable - long lifecycle

Innovative New Curtain Wall System Boosts Energy Conservation Performance



As energy conservation becomes crucial, high-performance fenestration systems become even more viable. REHAU and EUROLINE WINDOWS INC. have recently introduced the new PolyTech 50 hybrid curtain wall system. PolyTech 50 uses the superior strength of steel, encased in PVC, combined with an aesthetically flexible aluminum exoskeleton, to realize thermal values far higher than traditional curtain wall products.

REHAU CURTAIN WALL SYSTEMS BENEFITS OF COMPOSITE CURTAIN WALL SYSTEMS



Steel
Outstanding structural capabilities of steel reinforcement fully encased

PVC
Warmth and maintenance characteristics of uPVC profiles - inside

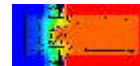
Aluminum
Attractive design and finish properties of aluminum - outside

REHAU CURTAIN WALL SYSTEMS OUTSTANDING THERMAL INSULATION

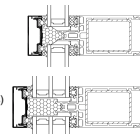
Designed for high thermal insulation requirements

U-Values for the frame only, without glazing:

REHAU-Polytec 50
 $U_f = 0,9 - 1,2 \text{ W/m}^2\text{K}$
 $= 0,16 - 0,21 \text{ BTU/hrs ft}_2 \text{ F}$



REHAU-Polytec 50 PHZ (certified for Zero Energy Houses)
 $U_f = 0,74 / 0,76 \text{ W/m}^2\text{K}$



e-sheet is published by Architek SBP Inc. We are green and sustainable building envelope specialists with offices in Vancouver, BC and Seattle WA providing design, consulting and educational services and best-in-class products that help architects win business and bring their LEED and sustainable projects to reality

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ZinCo Green Roof Seminars

Reserve Your Seat Now!

Architek is pleased to host **The 2009 Full Day Green Roof Seminars for Green Roof Professionals, presented by ZinCo**, the pioneer and worldwide industry leader in Green Roof Systems for 40 years.

You will learn:

- The newest trends and product information on Green Roof design and installation
- Green Roof policies and standards
- The benefits of Green Roofs
- Utilizing Green Roofs in combination with traditional roof technology, with a focus on various drainage layers, growing mediums and plant material
- How you can install extensive Green Roofs on traditional flat or sloped roof applications, intensive roof gardens on apartment buildings and parking decks on top of an underground parking garage

ZinCo has pioneered the development of Green Roof systems that succeed in virtually any landscape hardiness zone. The seminars will be supported by several examples of the company's reference projects from all over the world. This seminar will inspire you and provide many tools and techniques to aid in the design and installation of your Green Roof project.

Who should attend?

Architects - Landscape Architects - Specifiers - Roof & Building Envelope Consultants - Roof Contractors - Landscape Contractors - Engineers - Developers - Government Representatives

Information + Fee:

The seminars will be held throughout the year. To pre-register, please visit www.zinco.ca/seminar.htm. For further information, please contact Ron at Architek at 604-861-9446.

The fee for the Full Day Green Roof Seminar is \$125. which includes coffee, lunch and a detailed ZinCo Green Roof systems binder.

We look forward to meeting you!



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