We Have The Tools

HSW, Inc. has the tools to assist your community or organization with your LID LEED sustainable site design needs. The primary goal of LID, also known as conservation site design or green infrastructure, is to mimic a site's predevelopment hydrology by using decentralized design techniques that infiltrate, filter, store, and detain runoff close to its source. As such, LID conveys stormwater through small, cost-effective landscape features instead of through pipe networks and large detention basins. LID is a versatile approach that integrates planning and engineering and can effectively be applied to new developments, urban retrofits, and redevelopment / revitalization projects. Many LID features are incorporated into the LEED process including sustainable site design, innovative stormwater BMPs, and water efficient practices including water recycling and reuse.

Innovative stormwater management techniques (also referred to as Best Management Practices – BMPs) are a component of LID, but can also be part of a more traditional stormwater network. Innovative structural stormwater BMPs not only deal with water quantity, but also water quality and range from porous paving to extended multi-stage detention basins. As such, these techniques can be used to address a wide range of Wet Weather Flow issues, including Combined Sewer Overflows (CSOs), National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II permits, Total Maximum Daily Load (TMDL) permits, etc. HSW, Inc. Water Resources and Civil Land Development Groups have the planning, modeling, permitting, and design expertise to develop, design and construct innovative BMPs.

HSW

Incorporated in the State of Florida in 1988, HSW Engineering is an integrated earth science and engineering firm providing proactive, innovative, and cost-effective solutions for Environmental, Water Resources and Civil / Land Development projects. HSW has distinguished itself as a leader in the environmental industry by adhering to its philosophy of strategic long-range management of environmental concerns. This successful philosophy revolves around a project organizational structure that always includes one of the firm's principals to maintain strict quality assurance, effective communication and senior leadership. HSW has successfully applied innovative strategies to technical and regulatory issues nationwide, resulting in substantial cost and time savings. This approach assures our clients of the best possible service and value and is a key reason that over 90% of our work comes from previous customers.

LOCATIONS

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HSWENG.COM

Engineering & Scientific solutions within your reach...

HSW Engineering, Inc.

LID

Low Impact Development

LEED

Leadership in Energy & Environmental Design

SOLUTIONS

HSW provides the foundation for low impact development, energy and environmental design.

HSW has the expertise and experience to efficiently address your community's LID and LEED issues.

PROJECTS

Rain Garden Design and Performance Evaluation *– Southfield, MI*	Have conducted several evaluations of bioretention cells and rain gardens including field measurements of water quantity and quality and laboratory testing of engineered planting mix design performance. Deliverables have included extensive technical design assistance for communities, rain garden design and installation, publication of guidance materials on rain garden design, and dissemination of results through local and national workshops and seminars.
CF Industries Wetland Restoration *– Hillsborough County, FL*	As part of the development of a major industrial facility multiple wetland systems were destroyed and/or hydrologically altered. The restoration efforts involved de-channelization, cypress system restoration, marsh creation, and new meandering stream system placement.
LID Database Generation *– Oakland County, MI*	Responsible for overseeing the design and development of a web-based database of low impact development (LID) techniques in southeast Michigan. The database utilizes Google Earth and is fully interactive with background information and photographs. Website was established to provide convenient viewing of LID practices for individuals desiring to implement LID techniques in their municipalities or developments.
Greenroof Performance Evaluation Project *– Southfield, MI*	Responsible for monitoring and assessing the performance of a full scale green roof on the campus of Lawrence Tech by outfitting multiple roof drains with water quality and quantity sensors. Project goals included determining overall volume of precipitation retained and detained, nutrient loading attenuation capabilities, and ambient temperature reduction associated with the green roof.
LEED Sustainable Sites Credit Determination *– Dubai, UAE*	Responsible for completing template submittal information for the Leadership in Energy and Environmental Design (LEED) Sustainable Sites Credit 6.1 and 6.2 for a development project in Dubai, UAE. This effort included statistical determination of design storms for Dubai based on 40 years of rainfall records. Design storm calculations were used along with conceptual site design and soil characteristics to develop a design that provided 100% infiltration into subsurface soils through a porous pavement system.
Structural Stormwater Treatment Unit Performance Evaluation *– Michigan*	Responsible for providing third party independent evaluation of a proprietary structural stormwater treatment unit including devising sampling protocols and conducting laboratory testing. The units provide pollutant and hydrocarbon removal as a catch basin pre-treatment device to meet local and state NPDES stormwater treatment regulations.
Basin Managment Action Plan Support Tampa Bay Esturay Program *– Hillsborough County, FL*	Provided TMDL facilitation, coordination, and technical support to develop BMAPs for three major watershed areas. This effort included identification / prioritization of water quality, natural systems problem areas, load reductions actions, projects for contaminants of concern, and responsibilities of the participants for project implementation. Other technical aspects included organization of stakeholder groups, estimation of future pollutant loads, given the projected effects of proposed load reduction projects and activities, and the effects of anticipated population growth, identification of responsible parties, timetables and funding needs for implementation of load reduction projects and activities; establishment of monitoring, evaluation and reporting strategy, and identification of adaptive management measures
Museum of Science and Industry (MOSI) Stormwater Recycling Project *– Tampa, FL*	Team member working with MOSI to fund, design, & install a stormwater recycling project on the Butterfly House of MOSI. Project will include a green roof, a living wall, & a cistern for water reuse & recycling. Project will include a monitoring & education component to demonstrate to the public the use of innovative stormwater practices. Slated for completion in 2009.

OUR TEAM

Dr. Donald Carpenter, LEED AP is a Senior Technical Consultant and a professor of civil engineering at Lawrence Technological University in Southfield, MI. As an instructor and researcher, his expertise includes Low Impact Development (LID), Leadership in Energy and Environmental Design (LEED), innovative stormwater best management practices (BMPs), hydrologic and stormwater modeling, field data collection, and performance monitoring of stormwater facilities. Professionally, Dr. Carpenter has served as an officer of several national restoration and green infrastructure task committees.

Dr. Scott Emery is a Senior Technical Consultant with HSW. His water resources experience spans 30 years of professional experience in both the public and private sectors. His primary areas of technical expertise are in minimizing impacts from water resource development projects; assessing impacts from water withdrawal on lakes/streams/wetlands; resource management and policy development for local and regional governments; water supply development, treatment, and testing; applied ecology and ecological risk assessments. He has won awards for his professional facilitation services, undertaken for a variety of water resource and habitat issues.

Mr. Dean Mades, P.E. is a Senior Technical Consultant with HSW with over 30 years of experience managing and performing water resource assessments, permitting, and environmental restoration- 9 years as hydrologist with the U.S. Geological Survey and 21 years in the private sector as an engineer and environmental consultant. His primary areas of expertise are the measurement and modeling of surface and groundwater hydrology and quality. His work has supported NPDES stormwater, water use, environmental resources and industrial wastewater permits for the municipal, industrial and individual permittees. He has qualified and provided testimony as an expert in water resources and hydrology.