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Question of the month: What is low impact development and what are some of the benefits of it?

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What if you could simultaneously reduce development and infrastructure costs, conserve and protect the environment, increase the marketability of your projects, and improve affordability? It may sound too good to be true, but many building professionals throughout the nation have been able to meet these ambitious goals. How? By incorporating a growing collection of innovative practices and technologies into their existing land development processes and practices.

Private developers are interested in profitable business ventures that also effectively address environmental concerns and meet regulatory requirements. Public sector officials ensure that development projects mesh with applicable zoning ordinances and help improve the surrounding community. Low Impact Development (LID) meets the needs of both groups.
LID is an ecosystem-based approach to development and storm water management. It is an environmentally-responsive design to reduce the environmental footprint of development that combines engineering, landscape architecture, hydrology, ecology, and land use planning. LID still allows land to be developed, but in a cost-effective manner that helps mitigate potential environmental impacts.

While the LID approach can result in a myriad of benefits for the developer, and the municipality, and the environment, the proposed use of LID is likely to spawn questions during the development process. However, careful project planning, close collaboration with the local municipality and education programs can minimize the challenges and effectively answer questions.
One of the keys to a successful project is to invest additional time and money in the initial planning stages of development. While this idea may be unpopular because of increased up-front costs, the expenditures are often recouped in enhanced marketability, rapid home sales, and higher lot yields.

Over the years, I have worked with a number of companies up and down the east coast to Costa Rica. One of the companies we worked with called us in the beginning of 2004. They had a huge building designed with a 20 pound snow load for the roof and had high walls that drifted snow up to 200 pounds per s/f. They said, "We have a roof that is going to collapse." So they started shoveling the snow off the roof at $100,000 worth of snow shoveling.

The initial problem of eliminating the snow grew to a large list of requirements that included; a better lit cafeteria, outdoor play area, improved parking area, and LEEDS requirements. We looked at several options from taking the roof off to reinforcing everything as a structural solution. The 200 feet by 900 feet concourse roof was removed. The result was a beautiful outdoor space visible to

interior offices that dramatically improved the lighting and view of the cafeteria and offices, an expansive play area, and improved parking. The roof reframing didn't have to happen because it did not need to be reinforced. Swales were created to contain the water runoff which was part of the LEEDS program and the snow drifting was eliminated.

Moon Island was an open sewerage treatment facility in Wollaston Bay that would over flow into the bay when we had heavy rain because many of the storm drains in Quincy and Boston tied into the sanitary sewer system. Less and less pollution is taking place in Wollaston Bay since the Massachusetts Water Resource Authority (MWRA) replaced Moon Island with one at Deer Island.

Even Deer Island has trouble handling the sewerage during heavy rain storms. If home and building owners were required to detain the storm water on their property it would percolate into the ground and recharge the ground water instead of running off into the pipes and then into the harbor. In Boston containing the water on site helps to keep the piles from drying out because the water table was drying up, keeps the ground water charged, water out of Wollaston Bay, and Boston Harbor is less polluted.

Green roofs provide a number of LID benefits. Green roofs are vegetated roof surfaces that reduce total runoff volume through rainwater storage and evaporation. Green Roofs are about three times as expensive as a regular roof but last three times longer and require less maintenance. They also improve insulation, reduce heating and cooling cost. Today, the plantings used weigh significantly less than those used in the past, making the heavy weight of the soil less of an issue. The roof is shielded from the sun and ultraviolet rays. It is not being stepped on and damaged by people maintaining equipment on the roof. It has been found that a 6 inch extensive green roof reduced heat gains by 95% and heat loses by 26%. It is a win-win but requires an upfront cost.

The investment in LID requires change in how we plan, design, maintain and invest but has environmental, social, and economic benefits that impact the entire community. It comes down to the future of our grandchildren and their grandchildren's future and our collective obligation to make it happen.

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