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Written by Ken St. Onge Monday, 28 April 2008

What lurked beneath the surface of the new courthouse site? Laying The Groundwork For A Downtown Icon

The Central Mass Green Awards

Public Sector:
Regional Courthouse, Worcester
Awarded to O'Reilly, Talbot & Okun

Jim Okun, co-founder of the Springfield-based environmental engineering firm O'Reilly, Talbot & Okun Associates, stands in front of the new regional courthouse in downtown Worcester.

It was more than five years ago when state officials first announced plans to replace Worcester's aging court-house with a new regional justice center in the city's downtown. At the time, they likely had little idea of the types of things hidden just beneath the surface of those plans.

That's why they hired Jim Okun.

Okun, a co-founder of the Springfield-based environ-mental engineering firm O'Reilly, Talbot & Okun Associ-ates, specializes in finding cutting-edge ways to reuse contaminated land - a key piece needed to complete the Worcester District Court puzzle.

"We really needed to get a handle on what might have been done at the site" where demolished buildings were in some cases well over a century old, Okun said.

A Look Through History

The first step lay in finding all the pieces. His initial work on the 2.75-acre, Main Street plot started not in down-town Worcester, but in Okun's Westborough office where he began sorting through various historical documents to gain a sense of what might lurk beneath the yet-unbuilt building. He checked everything - files from the Depart-ment of Environmental Protection, EPA, historical records and maps, old aerial photos and even old insurance maps. "They were the best back in that time for tracking what went on with a property," Okun said.

The Earth In Mind

What he built was something of a guide map to a long-gone version of the city's center. He used it to make a best guess to the amount, type and location of the now-buried artifacts - metal, chemical and otherwise - of Main Street's manufacturing history. And much of it remained.

"There was a lot of oil there," Okun said. "We found 10 underground storage tanks that weren't on any map. We also found metal-plating waste, and organic solvents like Trichloroethylene, (which was) used in manufacturing as a degreaser. We also found high concentrations of lead in the soil - and cyanide."

On a pollution scale of one to 10 - with one being a cow pasture and 10 being a Superfund site - the stretch of downtown now occupied by the District Court House was about a "seven or eight," Okun said. To borrow a phrase: knowing the size and scope of the pollution, unfortunately, was only half the battle.

Next, Okun and his team worked with Massachusetts' Department of Capital Asset Management to devise a plan to haul away some 35,000 cubic yards of soil from the site - about 1,500 dump trucks' worth.

Okun said one of the tenets of his green building phi-losophy is to minimize the amount of material sent to landfills. Most of the contaminated soil taken from the court house site ended up being used to make lower grade asphalt typically found in the lower layers of paved streets.

Asphalt binds contaminants, rendering them non-pollutive. The remaining, more heavily contaminated portions went to a specialized disposal facility.

They also designed a unique vapor collection system that prevents ground fumes from entering the building, and draws any through a system that funnels toxic gas-ses away from the building. A core piece of the system is a massive plastic membrane called Liquid Boot, which insulates the district court building's foundation from any ground contaminants.

What makes the district court project so unique is its scope.

"This is much larger than anything we have done be-fore, and as far as I know, anyone in the state has done," Okun said. "For a state building, this is a break-through. We are going to see this type of engineering for a lot of urban renewal sites in the future..."