

## Harbourfront Fire Station, Toronto, Ontario



Adjacent to the Toronto SkyDome and the CN Tower in Toronto, this fire station uses PICP to reduce runoff pollutants entering nearby Lake Ontario.



Located on a Lake Ontario, the Harbourfront Fire Station features 11,000 sf (1,022 m<sup>2</sup>) of PICP in its entrance and parking lot. Built in the winter of 1998, the City of Toronto required a pavement that would reduce runoff pollution to Lake Ontario through infiltration while providing a parking lot in a highly urbanized area.

Built with a dense-graded base, the project exemplifies the ability of PICPs to withstand heavy loads from fire trucks in a winter environment with deep penetra-

tion of frost in pavements. The pavement is plowed and salted in the winter, but not sanded to prevent clogging of the aggregate in the openings and reduced infiltration. The lack of raised curbs enables snow plows to push snow directly off the pavement.

PICP withstands salt and snow plowing, a regular part of Toronto winters.



### Typical cross-section:

3 1/8 in. (80 mm) thick permeable concrete pavers  
2 in. (50 mm) bedding material  
6 in. (150 mm) MTO Granular A aggregate base  
12 in. (300 mm) MTO Granular B aggregate base

### Architect:

Paul Jurecka Architect  
Toronto, Ontario

### Engineer:

Lloyd & Nodwell  
Toronto, Ontario

### General Contractor:

Dixon General Contractors  
Mississauga, Ontario

## Historic Tree Preservation at Alden Lane Nursery Livermore, California

### Typical cross-section:

3 1/8 in. (80 mm) permeable pavers  
1 in. (25 mm) 1/4 in. by No. 10 (6 to 1 mm) crushed stone bedding layer  
6 in. (150 mm) 3/4 to 1/2 in. (25 to 20 mm) crushed stone base  
Geotextile

### Subgrade:

Clay soil

This upscale nursery in the San Francisco Bay area used 12,000 sf (1,115 m<sup>2</sup>) of environmentally friendly, mechanically installed PICP to allow air and water to nourish the roots of a very large, 300 year-old oak tree. It is so old it has been designated as a heritage tree which protects it from being removed. The tree lives in clay soil and PICP was built to ensure that additional air and water reach its roots. The nursery's owner decided on permeable pavers as a solution to preserve the historic tree and provide an environmentally sensitive entrance to the store. Local runoff regulations were not a significant motivating factor. The owner simply wanted to give the tree an opportunity to survive and grow.

The sidewalk adjacent to the nursery entrance uses permeable paving units to return water to nearby vegetation.



Roots feeding a 300 year-old oak tree receive additional air and water from permeable paving units at a landscape nursery in Livermore, California.