



## MILL AT BROADWAY

Permeable Pavers Create Old-World Aesthetic as Part of Modern Drainage Solution

### LOCATION:

Sacramento, California

### PRODUCTS:

Eco Dublin® & Aqua Roc™

### COLORS:

Toscana & Victorian

### INSTALLED AREA:

190,000 sq. ft.

### INSTALLER:

California Pavers, Inc.

### OWNER:

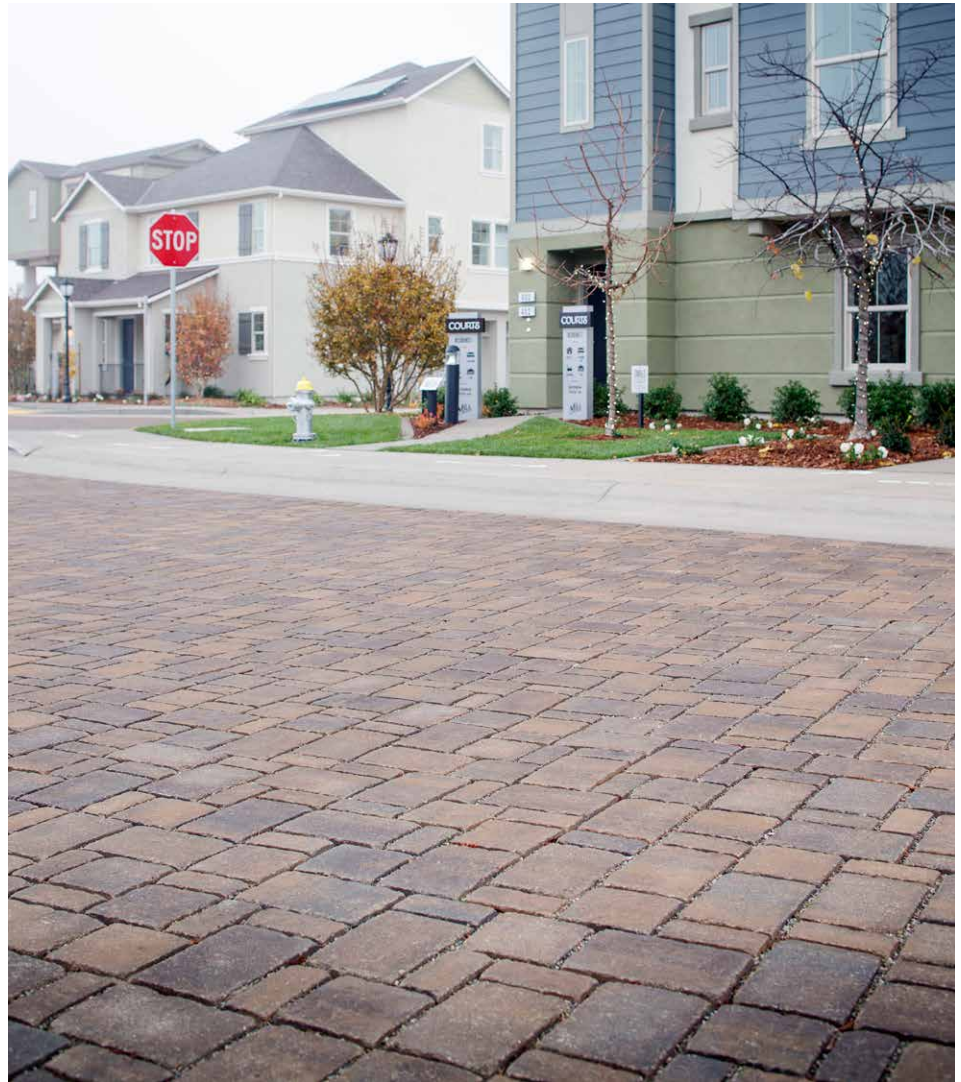
Northwest Land Park, LLC

### ENGINEER:

BKF Engineers

### GENERAL CONTRACTOR:

Bardis Homes



## Background

When completed, The Mill at Broadway will comprise about 1,000 homes on a 30-acre site that was home to a century-old sawmill. The development features a mix of condos, a six-unit elevator building and detached singlefamily homes. The community also features a 4-acre park, a 11,000 sq. ft. community resource center, and a 2.5-

acre urban farm and market operated in conjunction with the City of Sacramento.

## The Challenge

A stormwater management plan was needed that would both efficiently use the real estate and avoid overburdening the city's combined stormwater and sewer system. Planners looked at several permeable road systems,

such as pervious concrete pavement, but were unhappy with the aesthetics and maintenance needs of many pervious pavement options. "Some of those systems require regular maintenance (such as by a vacuum truck) and would need to be completely torn up and reinstalled if they were to clog," explains Rachel Bardis, co-owner of Bardis Homes, project general contractor.

**MILL AT BROADWAY**

## The Solution

The community's driveways and roadways were constructed with Belgard's® Eco Dublin and Aqua Roc permeable interlocking concrete pavers, which lend an historic Sacramento aesthetic while addressing the stormwater management needs.

"We worked with engineers to design the streets so they'd be an alternative to an above-ground detention basin on the site," explains Rachel Bardis, co-owner of Bardis Homes, general contractor on the project. "In the event of a 200-year flood, the system can hold back water from the site to keep it from burdening the city's combined stormwater and sewer system."

"This type of internal road system isn't used often in the City," adds Jim McCurdy, vice president of BKF Engineers, who designed project's roads. "This is one of the first projects I've seen where the entirety of the road system is this type of material. It's a great way to achieve the retention criteria we needed."

The system relies on rock in a 40 percent void ratio at a depth ranging from 18 to 36 inches to retain stormwater. Below the rock layer is a perforated pipe and liner so the water will eventually drain away. To make sure the water gets to the basin, the Belgard pavers were installed as the road service with onequarter by 10 stone compacted

between them to allow for permeability. The paver selections provided designers the opportunity to mimic Sacramento's historic cobblestone streets while also giving The Mill at Broadway what Bardis describes as "a more high-end look." For the roads, the pavers were tumbled for a more rustic look.

"The developer was looking for a more attractive alternative to the usual painted crosswalks, so we also used a paver solution for this. The color and pattern were simply changed at the crosswalks. We really took the versatility of the pavers and ran with it," says Bardis. She adds that the pavers also help provide safety by slowing traffic through the neighborhood. "Psychologically, pavers are a slowing mechanism. While they're not bumpy and there's no physical need to drive slower, people see them and tend to slow down."

**The response we've gotten to the paved roads has been really positive. People love them, from the city planners and developers to the residents. They feel like it's adds to the upscale design of the community.**

*Rachel Bardis  
Co-owner of Bardis Homes*

## The Result

Initially, the only reservation Bardis Homes had about using permeable pavers was the

anticipated installation time, estimated to take up to three weeks to install each city block by hand. However, installation contractor California Pavers used an Optimas mechanical paver installer to lay large sections at a time, completing a city block in as little as four days with the help of prep work done by the factory.

"Belgard hand-stacked the pavers in the designated pattern on the pallet at the factory, tumbling those designated for the road first. On site, the machine picks up a whole cube of patterned pavers from the pallet and puts it in place. Our crew then goes through and laces the sections together and completes the install," says Brian Camper, owner of California Pavers.

### About Belgard Commercial®

Belgard Commercial, part of Oldcastle® APG, offers a complete collection of paver and wall products for plazas, terraces, parking areas, roadways, rooftops and retaining walls. Available in a range of styles, premium Belgard Commercial products have been found in the nation's finest developments and award-winning commercial and retail properties since 1995.

Oldcastle APG is part of CRH's Building Products division. As the largest building materials company in North America, CRH provides a single-source solution for commercial construction projects with a full portfolio that also includes structural masonry, masonry veneers, dry mix products, hardscape jointing sands and sealants, stormwater management systems, concrete infrastructure, architectural glass, lawn & garden products, and composite decking.

