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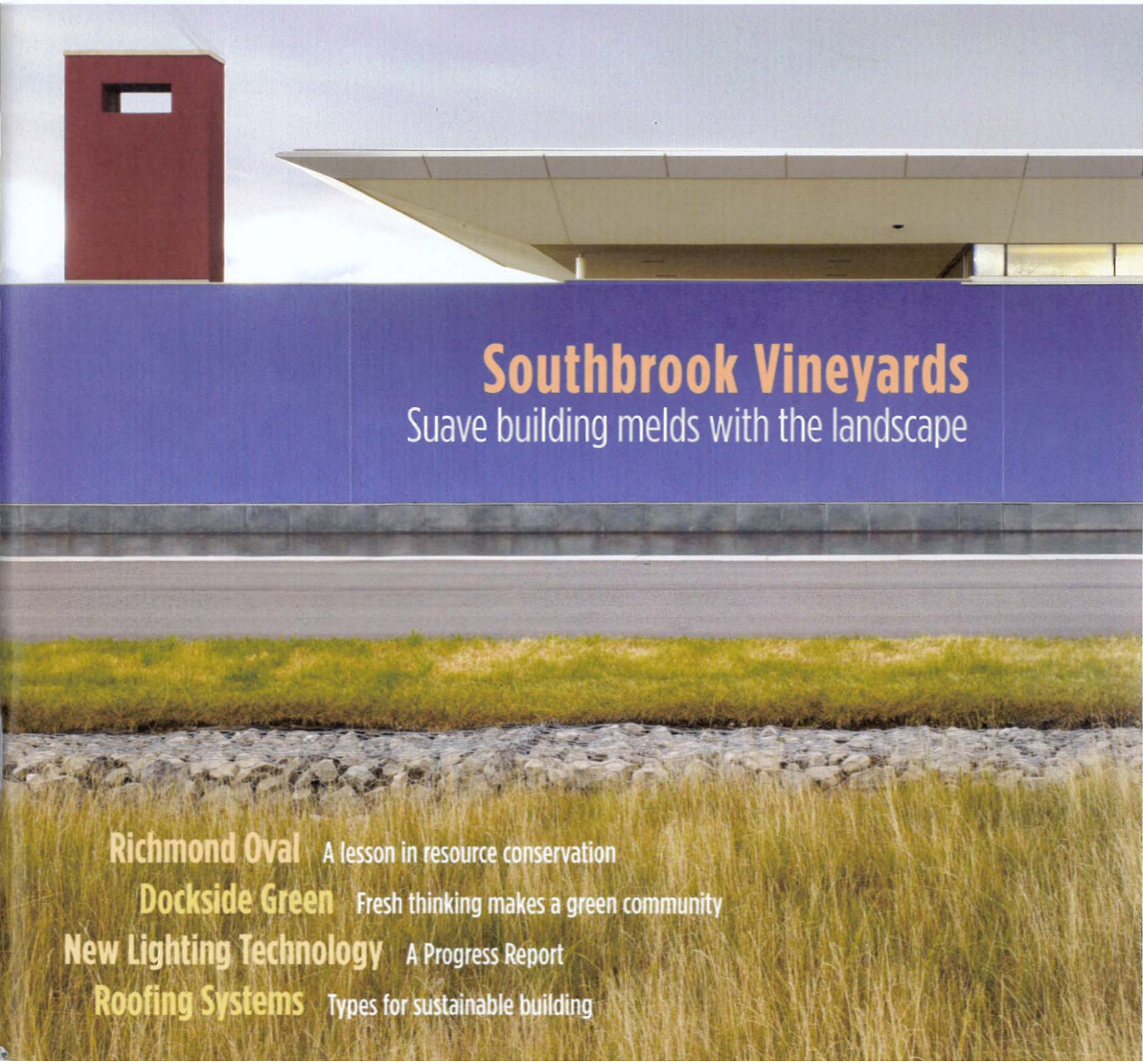

Southbrook Vineyards

Suave building melds with the landscape

Richmond Oval A lesson in resource conservation

Dockside Green Fresh thinking makes a green community

New Lighting Technology A Progress Report

Roofing Systems Types for sustainable building

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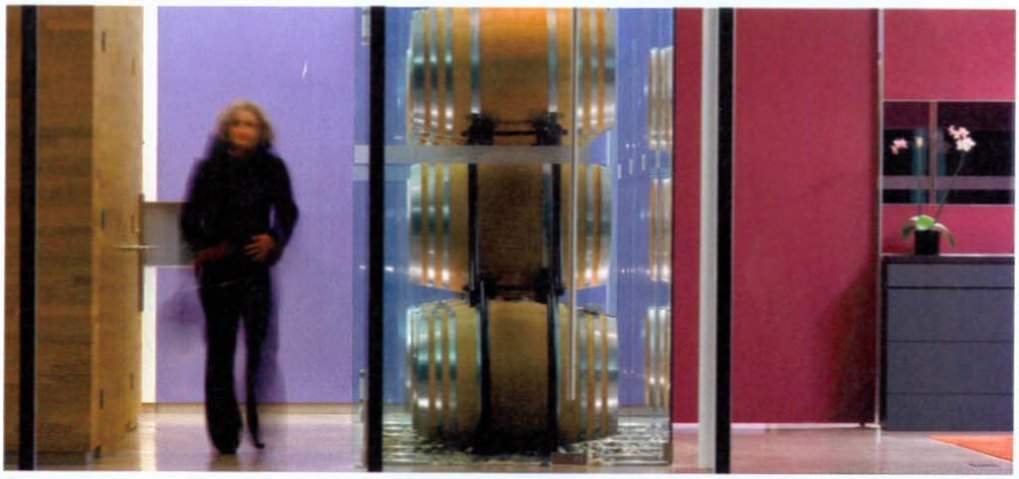


may | june 2009

Next issue: july | august 2009

SAB Awards 09

Complete descriptions, photos and drawings of the six winning projects of the 2009 SAB Canadian Green Building Awards

Living Building case study |
Canada Green Building Summit Report

Photo left SAB Awards jury. l to r: Vivian Manasc, Andre Perrotte, Dermot J. Sweeny. photo: Roy Grogan **Photo above and cover photo** Southbrook Vineyards, photos: Tom Arban

CLIENT Southbrook Vineyards, Bill and Marilyn Redelmeier, Niagara-on-the-Lake, ON ARCHITECT Diamond and Schmitt Architects [A.J. Diamond, Martin Davidson, Walton Chan, Malini Rao Smirnis, Cynthia Toyota, Jim Blendick], Toronto STRUCTURAL ENGINEER Blackwell Bowick Partnership Limited, Toronto MECHANICAL ENGINEER Crossey Engineering Ltd, Toronto ELECTRICAL ENGINEER Crossey Engineering Ltd., Toronto LANDSCAPE ARCHITECT du Toit Allsopp Hillier, Toronto CIVIL ENGINEER MMM Group, Thornhill, ON LEED CONSULTANT AND COMMISSIONING AGENT Enermodal Engineering Ltd., Kitchener, ON LIGHTING CONSULTANT Martin Conboy Lighting Design, Ottawa GENERAL CONTRACTOR Merit Contractors Niagara, St. Catherines, ON PHOTOS Tom Arban, Toronto

CLIMATE CONTROLLED FULL-HEIGHT GLASS VITRINES HOLDING FRENCH OAK BARRELS OF WINE ARE USED, INSTEAD OF WALLS, TO DEFINE THE SPACES WITHIN THE BUILDING [1]. AS PART OF THE OVERALL WATER MANAGEMENT SYSTEM, A REFLECTING POND CAPTURES ROOF RAINWATER [2].

Site plan

Southbrook Vineyards

Organic wine making needs a sustainably-designed building

Southbrook Vineyards is located on a 60-hectare estate in the heart of Ontario wine country. The project includes a production winery and a new 750 square metre facility in a separate pavilion housing retail, hospitality and administrative areas.

MARTIN DAVIDSON

The design can be read as a series of linear elements woven together in both plan and elevation. The central feature is a 3 metre high, 200 metre long wall which cuts through the vineyard and is grounded in the landscape. Lines of columnar poplar trees, wildflower beds and meadow grasses, an access road, and a bioswale for treating stormwater, are incised into the landscape in staggered rows that draw the eye out to the surrounding vines.

Juxtaposed against the mass of the landscape wall is a delicate glass pavilion, with a large overhanging roof floating above the wall. Visitors arriving from the west are presented with the monolithic form of the blue wall and the razor-thin edge of the roof set in contrast to the green foreground of grape vines. A single aperture provides entry through the wall. Once through this entry space, a horizontal band of glass provides framed views to the vineyard beyond.

Inside the pavilion, the long mass wall is carved by horizontal niches used for select wine display, storage, and a wine library. To the south of the pavilion a lower extension, concealed behind the landscape wall, houses the administrative and support functions for the building.

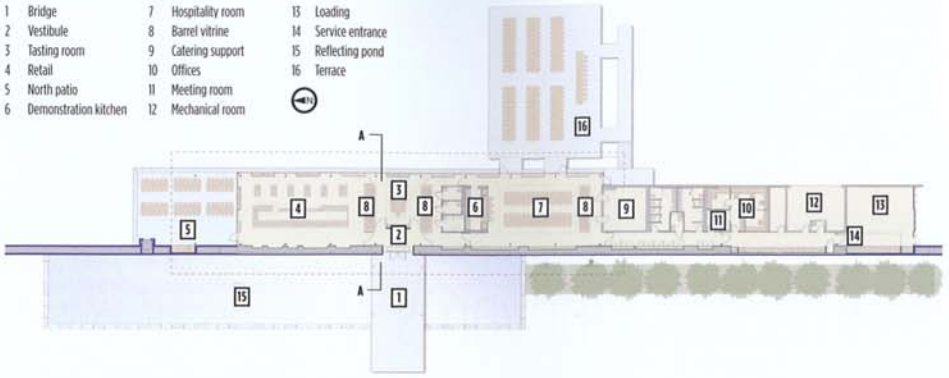
At the west end of the site is the production facility, with buildings arranged around a covered courtyard used for sorting, crushing, and bottling activities. Building services run underground linking the production facility and the retail pavilion. This approach allows for centralized mechanical, plumbing and electrical services and reduces the need for equipment at the pavilion.

SITE CONSIDERATIONS

The project mandate required that the site should not release any untreated water beyond the boundaries of the site. This was achieved through the use of a stormwater management system and a waste water treatment system. A significant sustainable feature of the site is the inclusion of a bio-swale. Configured as a long, gabion walled drainage channel reminiscent of the many regional drainage ditches in the area, it is planted with native species of wetland plants that collect stormwater from the access road and runoff from the parking lots. The swale is designed as a retention zone and

Floor plan

1 Bridge
2 Vestibule
3 Tasting room
4 Retail
5 North patio
6 Demonstration kitchen
7 Hospitality room
8 Barrel vitrine
9 Catering support
10 Offices
11 Meeting room
12 Mechanical room
13 Loading
14 Service entrance
15 Reflecting pond
16 Terrace



THE MONOLITHIC FORM OF THE BLUE WALL AND THE RAZOR-THIN EDGE OF THE ROOF CONTRAST WITH THE GREEN FOREGROUND OF GRAPE VINES [3]. FLOOR TO CEILING GLAZING GIVE PANORAMIC VIEWS OF THE VINEYARDS [4]. THE WEST ELEVATION. IN THE WETLAND WASTE TREATMENT SYSTEM, THE EFFLUENT GOES THROUGH A SERIES OF FILTERING "CELLS" THAT BREAK DOWN ORGANIC SOLIDS AND CLEAN THE WATER TO A TERTIARY STANDARD OF TREATMENT. THE TREATED WATER FLOWS INTO A DISPERSAL BED THAT SLOWLY RELEASES IT INTO THE SURROUNDING SOIL [5].

the plants filter the water before it is absorbed onto the site or released into the municipal system in the case of an overflow.

Southbrook's hospitality centre has an extensive water management strategy that begins with reducing water use. Indoors, this means the use of low-flow plumbing fixtures such as dual-flush toilets and half-flow urinals. Outdoors, the landscaping plan eliminates the need for an irrigation system due to the exclusive use of drought-resistant plants.

INDOOR AIR QUALITY

Staff and visitors at Southbrook Vineyards enjoy the health benefits of high indoor air quality. Protecting the ventilation system was paramount during construction. Air quality protection measures included sealing ductwork, regularly scheduled site housekeeping, and the protection of absorbent materials such as gypsum board. Before building occupancy, a "flush-out" ran the ventilation system to fully remove any lingering construction contaminants.

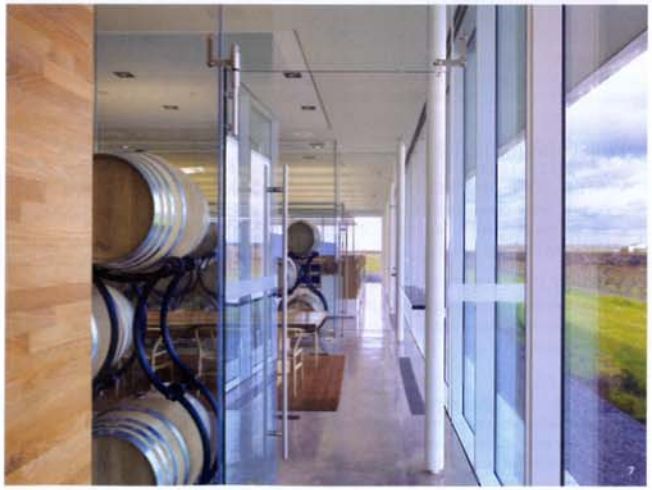
MATERIALS

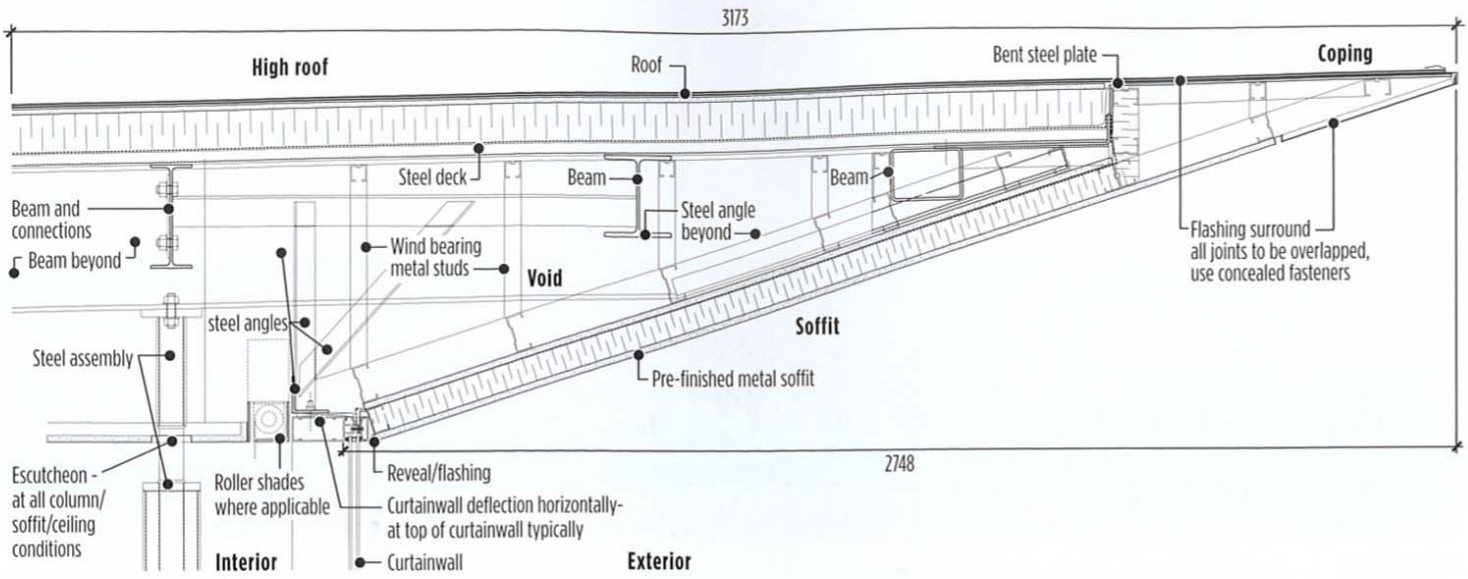
The primary goal was to use a minimal palette of robust exposed materials that did not require another layer of finish. The floors are left as exposed concrete, the steel columns painted but otherwise exposed and wood strip cladding, similar to that used in barrel making, is used around many of the high traffic areas. The major walls are defined by transparent glass boxes filled with wine barrels, stacked to provide privacy and definition to the spaces. Finally floor to ceiling glazing on the east and north façade provides panoramic views to the vineyard.

Materials and finishes were selected to limit the impacts on the indoor environment and on the health of construction site workers. Sealants, paints, coatings, and

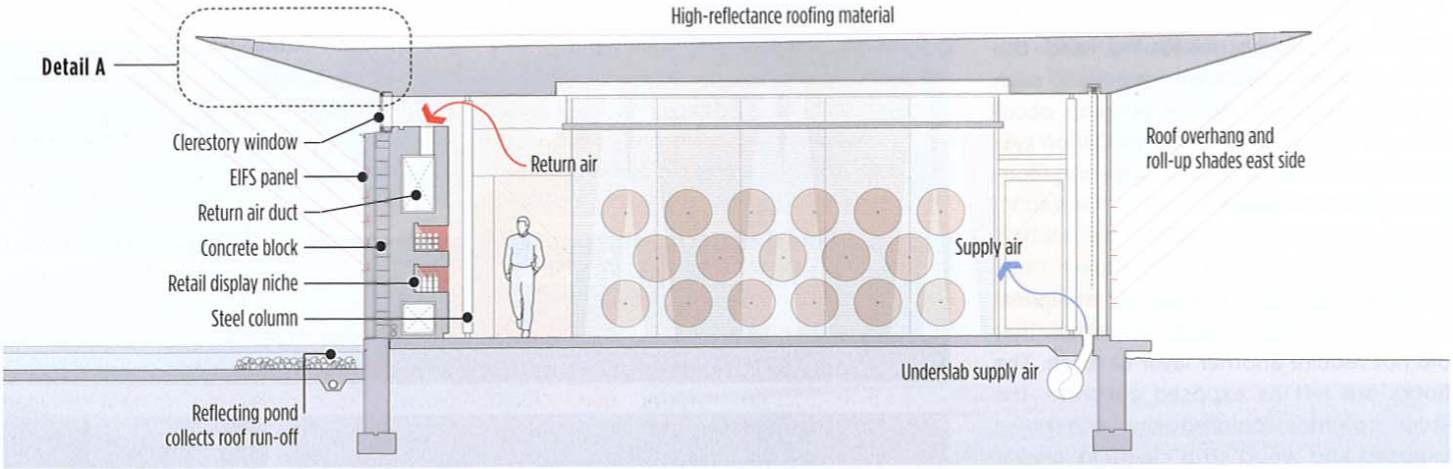
INSPIRED BY THE FLAT SITE AND LOW HORIZON LINES, REINFORCED BY THE REPETITIVE ROWS OF GRAPE VINES PLANTED ON THE SITE, THE DESIGN OF THE NEW SOUTHBROOK VINEYARDS IS AS MUCH ABOUT LANDSCAPE AS IT IS ABOUT ARCHITECTURE [6]. A SENSE OF OPENNESS AND TRANSPARENCY IS ACHIEVED THROUGH THE PERCEPTION OF THE FLOATING ROOF BALANCED DELICATELY ON SLENDER COLUMNS AND FLOOR-TO-CEILING GLASS FAÇADE [7].

East elevation





Detail A, Overhang



Section A-A

Project performance

WATER CONSUMPTION

Potable water consumption is projected to be 380 litres/m²/year, approximately 42% less than the reference building.

ENERGY CONSUMPTION

Projected energy consumption is 1,341 MJ/m²/year. This achieves a 50% reduction in energy costs.

MATERIALS

15% of the construction material is recycled, 33% of the construction material was locally sourced, 88% of construction waste was diverted from landfill.

carpeting are all designated as "low or no off-gassing". Of special interest is the millwork, which is both high in recycled content with no added urea formaldehyde.

AN INTEGRATED APPROACH

Southbrook's commitment to environmental stewardship extends to the balance and interrelationship of the vineyard's soils, plants and animals. The vineyard has received organic certification, as well as Demeter certification for biodynamic agricultural practices. The new pavilion's LEED Gold certification underlines this commitment. ◂

MARTIN DAVIDSON IS A PRINCIPAL OF DIAMOND AND SCHMITT ARCHITECTS

MATERIALS

Exterior

- Curtain wall by Fulton/Oldcastle, TPO roof membrane by Firestone, BASF Synergy Exterior Insulation Finish System

Interior

- Georgia-Pacific drywall, Dulux Lifemaster low VOC paint by ICI; lighting controls Leviton, Iguzzini light fixtures distributed by Sistemalux, Mouette hanging light fixtures from Artemide Canada Ltd.; sinks and toilets by American Standard, urinals by Toto supplied through Ross. H. Barber; office furniture by Teknion.