

MULTI-FAMILY HOUSING

SOLUTIONS FOR TODAY'S
TRENDS AND DEMANDS



UNILOCK[®]
DESIGNED TO CONNECT.



Umbriano®, Richliff® and Copthorne®

Unilock is here to help meet and exceed the expectations of today's housing developers

- | Communities with emphasis on common open spaces, amenities that promote social connectivity and environmentally-conscious forethought
- | Meeting consumer demands and municipal requirements
- | Maximizing use of available land and saleable square footage
- | Designs with a distinct blend of sophistication

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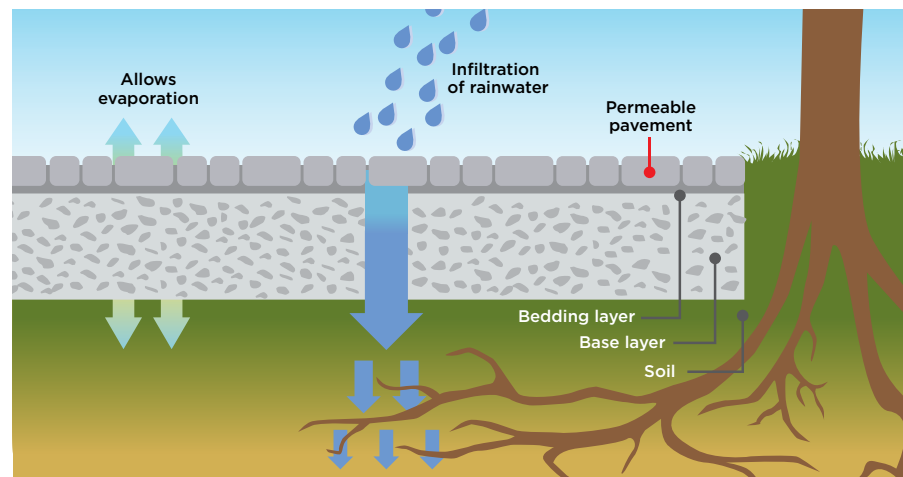
MAKE THE MOST OF THE LAND

MINIMIZE RUNOFF TO MAXIMIZE PROFITS

Reducing even a small percentage of runoff by encouraging infiltration will significantly decrease the amount of stormwater leaving a residential or mixed use site, increase groundwater recharge, and ultimately improve water quality throughout the entire watershed. Low Impact Development (LID) methods were generated to reduce site runoff and ensure adequate groundwater recharge imitating the pre development site hydrology. These methods involve site design techniques that increase surface permeability, direct water to more permeable areas, detain water to enable infiltration, intercept and hold rainwater and utilize water on-site as needed.

- | LID designs can result in development cost savings
- | Contribute to LEED® certification and qualify for government incentives
- | Less impervious surfaces such as roadways, curb and gutters
- | Decreased requirement for storm drain piping and inlet structures
- | Stormwater ponds can be decreased in size or eliminated entirely

In some instances, greater lot yield can be obtained using LID techniques, resulting in an increased return on investment for developers. Project bonding and ongoing maintenance costs can also be reduced due to less site development infrastructure.



CASE STUDY Fuse Condominium



“Creating open space that provides social interaction at a variety of scales and activities, open space that connects to the context/larger natural environment, and open spaces that somehow enhance the seasons/natural systems was essential on this project.”

*Robert Adams
Halvorson Design Partnership*

The Fuse Condominium in Cambridge, Massachusetts set out to create a residential community next to the Alewife Brook Reservation, a **designated wetland** in a very walkable neighborhood close to major highways and public transportation. Unilock® Eco-Priora™ **permeable pavers** were used for all paved areas on the property to allow for maximum infiltration while **recharging the groundwater system** from rainfalls instead of relying solely on the stormwater sewer system. Contemporary and lively patterning was achieved using special order Unilock colors that set the canvas for this residence.

Amenity courtyards and open spaces in this residential community provide highly desirable qualities of life: sunshine, nature, social spaces and more. **Two roof amenity spaces** provide various scaled spaces to appeal to a variety of users and uses. Unilock Skyline™ 24" x 24" concrete slab and wood deck tiles

were installed on pedestals to create a harmonious design for pool, lounging, dining area and conversational zones, which were established using pergola-type structures and furniture groupings. In the second roof amenity space, a large green area was created with patios and dining rooms for mid-sized groups, complete with grills, tables, chairs and side tables with intimate spaces tucked into the edges of the large central lawn. In this area, the designer was able to expand the hip and energizing paver design, using the same traditional permeable pavers as ground level. Both spaces borrow scenic vistas from the surrounding Alewife Reservation utilizing a glass railing to make the edge as seamless as possible and using the same plant types found in the borrowed landscape to tie them together. Residents benefit from direct access to the Reservation and Minuteman trails, in addition to the 10,000 square feet of these amenity spaces.



CASE STUDY Autumn Trails

Autumn Trails in Moline, Illinois, is an environmentally responsible and energy-efficient development for those over 55. Permeable Interlock Concrete Pavers (PICP) were chosen for their environmentally responsible fit and because they allowed for a number of cost savings:

- > Eliminated stormwater runoff fees
- > Reduced detention pond
- > Eliminated storm sewer inlets and pipes

As well, the use of permeable paving allowed the development to meet the municipal requirements for pervious/impervious ratio cover while constructing more housing units compared to designing with asphalt.

The base of this installation is designed to store approximately 6.5 inches of rainfall from roofs, sidewalks and driveways and will accommodate both common rainstorms and most heavy ones. The pavement is designed to overflow and drain at one end in the event that soil becomes saturated during heavy rains. This small retention pond collects overflow which is then used to irrigate lawns.

During winter, snow melts more quickly on PICP because water can drain directly into the pavement. This in turn reduces snow-plowing costs, salt use and

slip hazards from ice. The developer, Alternative Energy Builders, found that customers were willing to pay approximately 10% more than conventional construction for residences with the lower operating costs of energy-efficient designs and low-impact development strategies such as PICP.

COST COMPARISON OF PAVEMENT SYSTEM FOR AUTUMN TRAILS IN 2006

ITEM	PICP	CONCRETE	ASPHALT
Paving/sf	\$2.25	\$8.00	\$3.00
Excavating/sf	\$1.00	\$1.00	\$1.00
Stone/sf	\$2.00	\$1.50	\$1.50
Installation/sf	\$4.00	(in paving cost)	\$1.50
Curbs	\$1.50	\$1.50	\$1.50
Maintenance	\$0.20	0	Not known
Replacement	None	None	Every 12 years
Detention/Retention required	None	Yes	Yes
Storm Sewer System/sf paving	None	\$3.00	\$3.00
TOTAL/SF	\$10.95	\$14.00	\$11.50
TOTAL/LINEAR FT - Municipal street	\$171	\$218	\$179
TOTAL/LINEAR FT - 30 ft wide street	\$230	\$280	\$230

INFILL PROJECTS

Infill construction is an increasingly popular strategy for community redevelopment and growth management in urban areas. However, it can be more costly for developers due to the additional expense of removing existing structures, soil testing and cleanup, on top of the pure land costs. Therefore, developers are highly motivated to take advantage of the maximum allowable square footage. Permeable pavers can allow developers to meet minimum infiltration coverage while maximizing the building's square footage, with the added benefit of allowing rainwater to stay out of the sewer system and instead, feed back into the natural ecosystem.



CASE STUDY Casa Queretaro

This notorious brownfield site in Chicago was redeveloped utilizing high albedo permeable pavers with a porous sub-base throughout the courtyard and parking lot. While the parking lot used standard finish Unilock Eco-Optiloc™, the courtyard introduced the unique brushed finish of Il Campo® on the Eco-Line® linear paver for visual interest and added durability. This allowed designers to maximize the square footage of this affordable housing community, while minimizing stormwater runoff and reducing the heat island effect that also contributed to their LEED certification.



CREATE A LEVEL PLAYING FIELD

Incorporating all the required infrastructure and desired amenities and facilities on a multi-family site can be a challenge when the site's topography includes significant changes in elevation. On these sites, Unilock® structural retaining walls can provide a solution by carving out new space without compromising aesthetics. This will allow you to maximize saleable square footage, reduce infrastructure and can also create new functional spaces in the landscape such as public common spaces, nature trails and parkettes.



CASE STUDY Bishops Place

Bishops Place is a boutique apartment community surrounded by some of West Hartford's most desirable neighborhoods. An engineered retaining wall was built using Concord Wall™ (Pisa2), to **create a level parking area and entrance** to the condominium. This retaining wall effectively **made new land available** for building. From the street, the wall is visually appealing; terraced to create planters and gardens which enhance the features of the building. The amenity spaces within the complex include a courtyard created with pavers which echo the architectural design, where residences can come together for a BBQ or simply relax and enjoy the fireplace.





COMMUNITIES WITH SOCIAL CONNECTIVITY

Homeowners are seeking more than a dwelling; they're looking for a home in a community with a sense of place. Today's communities have been redesigned to deliver the unexpected, with more amenities like recreation centers, pools, dog parks, tot lots, natural spaces and exercise trails. These spaces foster friendships among neighbors and give buyers added reassurance that their home will enhance their lifestyle by serving as a gateway into a close knit community.



“Residents in urban settings strive to find a balance between the excitement of the city, the vast social opportunities, while trying to carve out a little serenity and relationship to nature, seasons, etc.”

*Robert Adams
Halvorson Design Partnership*



CONNECTING WITH NATURE

Whether they're small pocket parks, larger recreational areas, ample green space or trails, home buyers want them. Urban and suburbanites alike want to be able to get outside and connect with nature at some level.

CASE STUDY The Preserve

Working with Mattamy Developments and the Town of Oakville, NAK Design Strategies helped plan, design and oversee a community that recognizes and **preserves natural heritage** features, integrated views, vistas and **pedestrian systems**. Residential options within the development consist of detached and townhouse dwellings, live-work units, urban townhouses and back-to-back townhouse dwellings. Within this community, the urban stormwater management pond is designed as a central feature. Walkways paved with Unilock® Artline™ with an Umbriano® finish, connect integrated lookouts, terraces and public view sheds around this attractive, natural open space.



CONNECTING WITH FRIENDS & NEIGHBORS

The division between indoor and outdoor spaces continues to blur, with operable glass walls and wide French doors bringing the outdoors into indoor spaces. No longer is the back yard only for single family developments. Multi-family construction is evolving to accommodate this desire to create a connection between the indoors and outdoors. Condos extend to the balcony, common rooms extend to the roof deck, exercise rooms extend to the pool and living room extend to the courtyard. No matter which version of housing is being constructed, the consumer demands this element. This is where the home buyer can be social, foster friendships among neighbors, and feel like they are part of the community. Amenity spaces have never been more important or more in demand.

TRANSFORMING NEIGHBORHOODS

CASE STUDY

Amenity - The Foundry

In the heart of Lawrenceville, a gritty East End neighborhood in Pittsburgh, a hot building market is capitalizing on the city's residential boom. Vacant for many years, the Foundry at 41st was formerly a 19th-century foundry site for shaping metal. Now it has been **reimagined into an 'industrial chic' development** featuring 182 luxury apartments, with nearly 9,000 square feet of amenity space including an outdoor pool, a rooftop terrace, a dog park connected to an indoor pet spa and a public park along Willow Street. The use of Unilock® Promenade™ Plank Pavers in a variety of finishes and colors contribute to the uniqueness of the architecture and **create a hip vibe** for spaces in the entrance and courtyard. The exterior retains elements from its past including the centerpiece of the project, Bay 4, a hulking remnant of a former mill building, with rust and silver corrugated metal, glass and green accents.

Designed by Strip District-based Rothschild Doyno Collaborative, "The building will have impact beyond itself because it is a **powerful urban gesture**," says architect Daniel Rothschild. "We are creating a public plaza for the citizens of Lawrenceville and the city of Pittsburgh."



ROOF DECK AMENITY

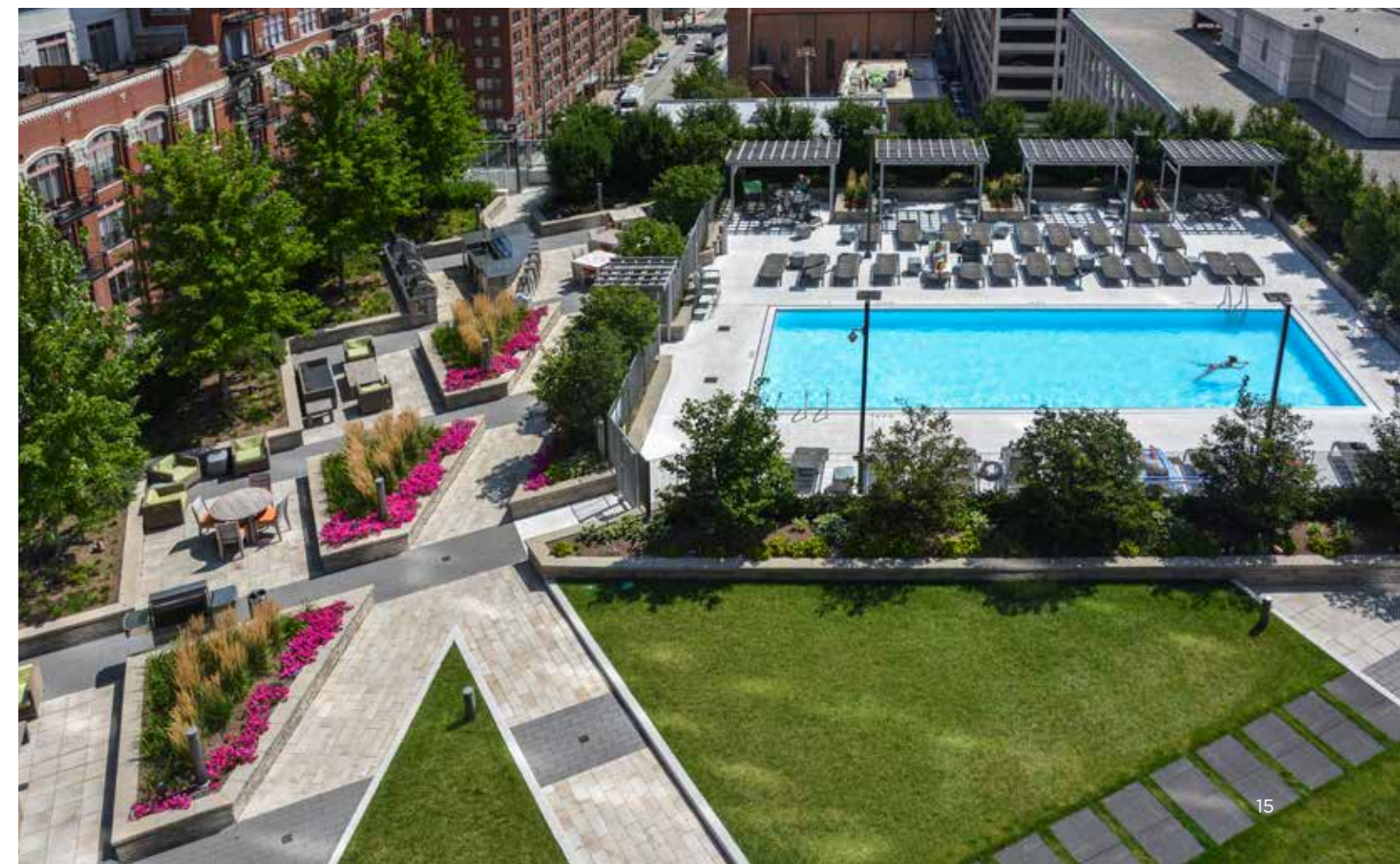
CASE STUDY

Hubbard Place

Hubbard Place is a 44-story, 450 unit apartment community in Chicago's River North neighborhood, an established tech hub in the downtown area. The building has **an entire floor dedicated to communal and entertainment amenities** including a spa, billiards room, fitness center, media, club and conference rooms. Additional amenities include a swimming pool with a sun deck, landscaped garden, fire pit and open-air kitchen on **an outdoor deck on the 9th floor**. Seat walls and room divisions were created on the roof deck with Unilock® wall systems. The paver pattern directs pedestrian flow and creates distinct spaces using different colors and textures of Unilock Umbriano® and Series™ products.

The building aimed to establish connections between Hubbard Place residents and local merchants, with thoughtful design that took an inclusive view of the surrounding community. Taking the community approach even further, the 44-story tower features a lushly landscaped park open to residents and community members.

This LEED® Silver certified project offers **luxury living** and sophistication in rental residences.



CONNECTING WITH COMMUNITY

Fusing residential, commercial, retail and service properties creates an engaging environment with things to do day and night. Walkable neighborhoods bring people together, create life on the streets and make good neighborhoods, not just good buildings.

CASE STUDY

Vaughan Metropolitan Centre

Transit oriented developments are emerging as vibrant urban neighborhoods, with strong gateways that ensure connectivity within and through the surrounding areas while ensuring streets, parks and open space are 'Place Makers'. In Vaughan, Ontario, the expansion of the VivaNext bus network and addition of a new subway station created an opportunity to transform this area into a dynamic urban hub.

Among the many design principles of high quality design to **create spaces with distinct character**, is the directive to use unique, characteristic and high-quality materials that will harmonize with the architectural design and reduce long-term maintenance and life-cycle costs. The high-quality materials used for streetscapes, parks and open spaces **set the precedence** for the quality of built forms within the community.

Unilock® Promenade™ Plank Paver was chosen for its shape, lending to trend-setting patterning, while the Series™ finish was chosen for its **outstanding surface durability**. Unlike standard thru-mix pavers, the Series finish will only look more beautiful as it wears, exposing more of the product's natural granite and quartz aggregates.

Although the Vaughan Metropolitan Centre is in the early stages of its planned 30 city blocks, the first building features an elongated public park that will stretch across the heart of the area. Its stunning paving pattern has set the stage for future phases, and will serve to **visually knit together the new downtown**.



MORE DESIRABLE RENTALS

It's no mystery why luxury apartment homes are more rentable than old, timeworn, un-amenitized units. Renters today want all the perks inside their apartment, such as stainless steel appliances and in-home washer and dryers. They also want make sure that amenities are nearby, like a health and wellness center, resort style saltwater pool or community spaces such as lounging areas with a fireplace or outdoor terraces, courtyards, grilling areas, dog runs and washing stations.

The home buying market remains well below pre-2008 levels and it is predicted that we will never see those levels of home ownership again. Rental properties will become more commonplace and owners and developers need to be clear about the wants of their client so they can achieve the best possible rental capacity.

CASE STUDY East Side Bond

Eastside Bond is a **revitalized mixed-use** transit oriented development located at the renovated East Liberty transit stop in Pittsburgh. The third phase of development includes 50,000sf of retail space, 350 apartments, and 12,000sf of amenity space. It features a **public boulevard** through the site, rooftop gardens, and apartments with energy-efficient appliances. Directly adjacent to two heavy freight lines, and Pittsburgh's rapid transit busway, three bridge-linked podium buildings reconnect the street grid and sight lines, enabling many tenants to live car-free. Careful planning and design across several disciplines ensured a seamless approach to **pedestrian connectivity** with the unique product line-up of Unilock Il Campo® and Umbriano® at entrances, walkways and roadways, **maximizing retail value** and frontage through a series of interconnected landscape spaces.



WHAT NEW HOME BUYERS WANT



FIRST IMPRESSION

Stand-out Entries - Curb appeal is a must



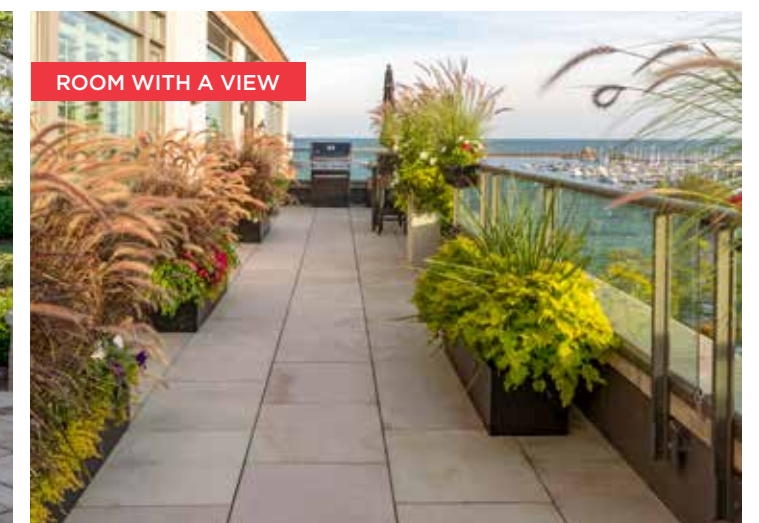
OUTDOOR OASIS

Private outdoor spaces that can be enjoyed with others



PLACE TO GATHER

Courtyards for every climate



ROOM WITH A VIEW

Roof decks - an alternative to the everyday deck or backyard patio

The way we choose to live has changed. The way we plan and develop neighborhoods and communities has also changed and will continue to change as urban centers become more populated and municipalities seek to manage urban sprawl.

UNILOCK® - WE'RE HERE TO HELP

Let us help you maximize saleable square footage and create just the right look and feel for your next creation.

CONTACT US FOR MORE INFORMATION.

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