

Academic Institutions

CAMPUS INVESTMENTS
WITH DIVIDENDS



JNILOCK[®]
DESIGNED TO CONNECT



Série 3000 University of Toronto, Mississauga Campus, Mississauga, ON

UNILOCK[®]
DESIGNED TO CONNECT.



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For decades, Unilock has been trusted by Academic Institutions to create outdoor spaces that pay long-term dividends in form and function.

Common spaces that foster social engagement and collaboration, statement-making entrances, programmable spaces, pedestrian wayfinding, parking, and strategies to unlock new land are all creatively tailored solutions accomplished with Unilock products.

Pavers and walls

Ready to ship and custom options

Contemporary and traditional style choices

Heavy duty vehicular

Permeable pavements

Engineered retaining walls



YOUR SCHOOL IMAGE PAYS DIVIDENDS

Each Academic Institution has its own unique brand identity which communicates to students, parents, donors, staff and community ratepayers what that school stands for. The outdoor landscape has a vital role to play as a highly visible demonstration of your academic institution's values, be they environmental, social, technological, or historical.

CASE STUDY Miss Porter's School

FOR OVER 325 YEARS, a building has stood on the east bank of the Farmington River. Originally a Grist Mill, over the years this historic landmark has been a residence, boutique shop, fabric store, bookstore, and even a successful restaurant. In 2014, the building and land were donated to the Miss Porter's School, Farmington **Connecticut's premier preparatory school**, and renovated to become the new admissions building.

The school saw the importance of preserving the historic features and character of the original building on the captivating site, while ensuring aesthetics were in keeping with the school's **reputation for excellence in academics and athletics**. What was once a sea of asphalt parking spaces was converted into an arrival garden and accessible walkway by The Berkshire Design Group, Inc of Northampton,

MA. It was important to find and use materials that would **keep the historic feel** of the site and endure for future generations. Unilock Town Hall® pavers utilized in the plaza and walkway adjacent to the large lawn area create a destination for school celebrations. A raised planter, of Unilock Rivercrest® Wall, is filled with plants, ground covers and bulbs, to frame a spectacular view of the river.

The admissions building is now a fitting stage for Miss Porter's School to welcome new generations of students to the school for years to come, while celebrating the history and beauty of this Farmington site.







A DEFINING DIFFERENCE

Defining spaces and improving wayfinding with retaining walls provides academic institutions with the opportunity to incorporate facility signage, reinforcing the brand image in multiple locations.



CASE STUDY Daemen College

DAEMEN COLLEGE has completed the third phase of **campus beautification efforts** with a newly installed decorative wall along the west front of the college grounds, with new signage and other improvements to further spruce up the campus.

“By extending the wall around more of the campus perimeter and installing additional entrance signs, we’ve made Daemen more visible to the surrounding community and **improved the overall appearance** of our college grounds,” said Daemen President Gary A. Olson.



ROOF DECK SPACES OFFER A PRIVATE OASIS

As available land on which to build new amenities dwindles, we start to think outside the box. Already hot in the multi-family housing market, and mandated by some municipalities as part of greener roof initiatives, are rooftop amenity spaces. They are more common at academic institutions than ever before. The roof space is now the running track, or the common area for student and faculty gatherings. Consider the possibility of an outdoor gym complete with pool.

CASE STUDY College of DuPage

THE COLLEGE OF DUPAGE CULINARY & HOSPITALITY CENTER is a LEED certified facility and home to the Hospitality and Culinary and Pastry Programs. The building houses a boutique hotel, two restaurants and state-of-the-art instructional kitchens, where students work and learn, acquiring real-life training as part of their education. To provide students with quick and easy access to fresh seasonal ingredients, a **roof deck herb garden** was created in addition to outdoor patios for the restaurants.



Skyline® Umbriano® 24 x 24" College of DuPage, Glen Ellyn, IL



REAP THE REWARDS OF NEWFOUND SPACE

Incorporating all the desired amenities and facilities on an academic campus 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. In addition to this, they can be used to create new functional elements in the landscape such as stadium seating or an outdoor amphitheater.





SienaStone® Roxbury Latin School, Roxbury, MA



CASE STUDY

Roxbury Latin

ROXBURY LATIN SCHOOL, in Boston's West Roxbury neighborhood, undertook a \$30 million upgrade to the athletic facilities on its 100-acre campus including new tennis courts and a baseball diamond, an indoor sports complex with a new access road, field upgrades and new landscaping to help buffer the facilities from the surrounding neighborhood. The project also presented the opportunity to substantially improve the quality of stormwater and reduce the rate and possibly the volume of stormwater from the project site.

The **terrain of the property presented elevation challenges** for this massive project. These obstacles were overcome using two different Unilock wall products in a number of locations on the site.

Unilock Concord Wall™/Pisa2® XL was used to shore up the perimeter of the new tennis courts, **creating level playing surfaces** on the rocky terrain. For the Chauncey Baseball Diamond, this Unilock product was used again to

support the load of a new two-lane access road and manage the elevation change between the diamond and a new indoor athletic facility. As well, a Unilock SienaStone® engineered retaining wall was used to **unlock new land** by carving new team areas and the backstop into a hill. This allowed the new diamond to be reoriented for improved solar exposure.

Artificial, free-draining turf was installed in most of the athletic fields to allow them to quickly drain between storm events, and improve the quality of storm water from the site, with an added benefit of increasing the life of the playing fields.

Since its founding in 1645, Roxbury Latin has developed an exceptional reputation for its **commitment to academic excellence**. The expansion project provides students with facilities commensurate with the quality of the rest of their student experience and created the necessary infrastructure to nurture generations of scholar-athletes.

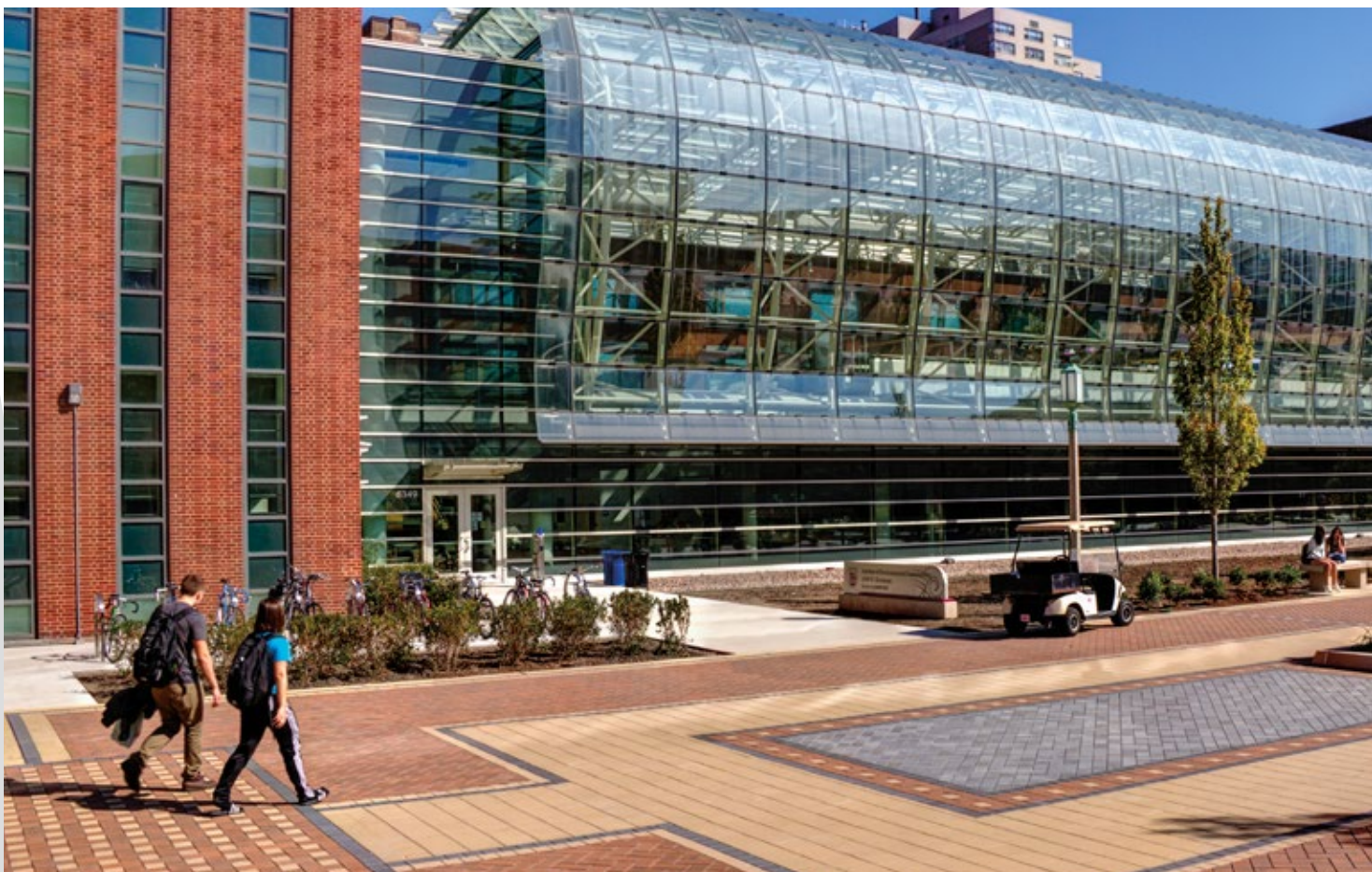
“The university has made a substantial investment in these new facilities and it demonstrates the enormous level of commitment that Loyola has to address our critical environmental issues.”

Nancy Tuchman, director of the institute.



GREEN INITIATIVES PAY OFF

The needs of the environment and how the school and the campus can contribute to a healthy society are top of mind for students, faculty and community stakeholders. Unit paving and permeable paving work hard contributing credits towards your LEED certification goal, helping to meet or exceed local water management strategies and supporting your sustainability initiatives and school practices.





Promenade™ Plank Paver & Eco-Priora™ Loyola University, Chicago, IL

CASE STUDY

Loyola University

THE LOYOLA UNIVERSITY has been advancing sustainability practices across the university for decades and has many accomplishments including 10 LEED certified buildings. Their **commitment to sustainability** is reflected in their campus, curriculum and culture. As part of this initiative they have been recognized as a leader in water conservation, diverting 18 million gallons of rainwater from the Chicago sewers. Permeable pavers are an integral component throughout the campus.

When Loyola University in Chicago expanded its Lake Shore campus to the south, planners decided to buy an entire avenue from the city, close it to vehicle traffic, and replace the street with a wide concrete paver shared-use plaza. This is one of the first pedestrian-only streets on the city's far north side.

The designers wanted to **allow pedestrians and bicyclists safe passage** between the southern areas of the school, including the new Institute of Environmental Sustainability building, and several student dormitories, as well as the main campus.

Building upon the university's commitment to sustainability, the plaza features a storm water management system which includes permeable pavers, native plantings, and a living-learning laboratory for students and visitors. Stormwater

management is a particularly important component of the campus design due to its proximity to Lake Michigan. The majority of the campus is within a half mile of the shoreline, with soils highly suitable for infiltration.

Permeable path systems are found throughout the campus, along the St Ignatius Plaza, the West Quad, East Quad and CTA Station. This **eliminated the need for underground storage tanks**, as rainwater naturally filters back into the ground. This change from impervious asphalt to permeable paving is a more sustainable best practice for the campus.

"In the past, runoff pouring from Loyola's impervious streets and parking lots created flooding problems and sent more than 6 million gallons of water annually into Chicago's storm sewer system and Lake Michigan," wrote planner Doug Kozma, RLA, Principal at SmithGroupJJR's Campus Planning Practice.

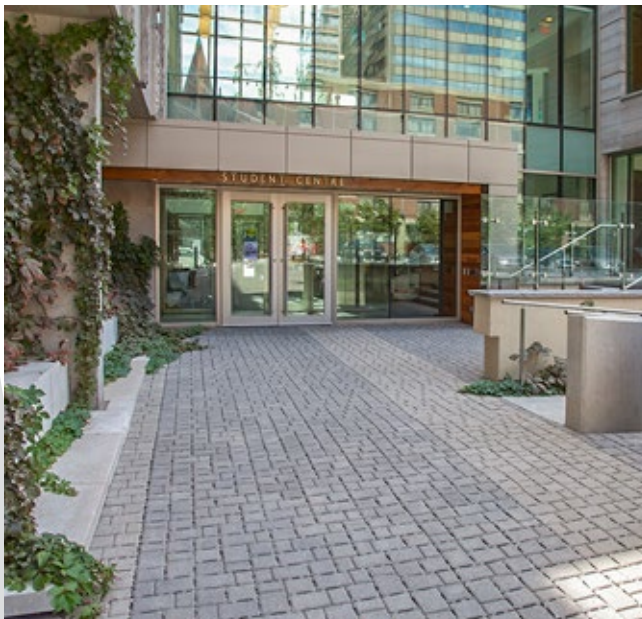
The permeable pavers, he wrote, is part of "a **remarkable stormwater management system**" that is a "testament to the university's environmental ethics."





UNLOCKING LAND WITH PERMEABLE PAVERS

Maximize the physical use of your property by using permeable pavers to unlock land. Ever-soaring real estate costs are motivating academic institutions to think strategically about the land allocated for structure versus open space, while meeting required quotas. By installing a permeable pavement system, more land can be designated for structures and less money is required for stormwater infrastructure.



Creating the **GOLDRING STUDENT CENTRE** on The Victoria College Campus at [University of Toronto](#) provided much-needed space for meeting rooms, student government offices and more than 20 student clubs, a renovated cafe, two-story lounge, assembly space, landscaped quad courtyard and the addition of lockers for commuter students. Moriyama and Teshima preserved many of the iconic heritage features of the former student union building built in 1952, a historically listed building.

The [infill project in uptown Toronto](#) required new landscaping for the entire site and the addition of a new fire route. Site services were carefully designed and permeable paving was chosen for lane-ways, pedestrian and vehicular components in order to meet [municipal limits for the ratio of impervious surface area](#) on the project.

Unilock Eco-Optiloc™ pavers were chosen to deliver [high infiltration rates and heavy-duty vehicular capacity](#). Two colors, natural and charcoal, were used to integrate wayfinding in the space. These pedestrian and bicycle paths and roadways provide access and harmony through the site.

CASE STUDY Goldring Student Centre



VITAL PARKING LOTS

REDUCE RUNOFF

While many facilities are reducing parking spaces to encourage the use of public transport, parking remains a vital component of school properties. This is an ideal location for permeable pavements. Permeable paver systems can reduce potentially harmful stormwater runoff, minimize the risk of flooding, present the opportunity to reduce heat island effect, and are often more cost efficient with a longer life cycle than traditional asphalt. Incorporating parking-space lines into the segmental pavement design also eliminates the need for additional painting maintenance.

CASE STUDY

Orozco Academy in Chicago



OROZCO ACADEMY has been transformed with the help of Space to Grow, an innovative public-private partnership program that develops **Chicago schoolyards** into centers for school and community life to support active healthy lifestyles, outdoor learning, physical education and engagement with nature.

The City Department of Water Management and the Metropolitan Water Reclamation District are funded to **reduce flooding and combined sewer overflows** but often have no available land to temporarily store runoff. The Chicago Public Schools have land but limited budgets, which are typically targeted to classrooms and teachers rather than playgrounds and parking lots. The Space to Grow program partners these groups for mutual benefit.

The stormwater management improvements at Orozco include 10,000 square feet of Unilock Eco-Priora™ permeable pavers and have the capacity to hold more than 303,000 gallons of water. Additional site improvements include: a multipurpose turf field, play equipment for younger and older students, an outdoor classroom area, a rain garden with native plants and seating throughout the schoolyard.

Students now have a **much-needed play space** while runoff rates and volumes are significantly reduced eliminating the likelihood of future flooding and greatly **reducing the pollutant load to local waterways**.

LEED CREDIT OPPORTUNITIES

LEED®, Leadership in Energy & Environmental Design, is a green building certification program that recognizes best-in-class building strategies and practices that have a positive impact on the health of occupants, while promoting renewable, clean energy. To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Unilock products can help with your certification goals.

POTENTIAL LEED CREDITS LEED V4

RAINWATER MANAGEMENT: LEED V4

Up to three points can be achieved for retaining rainwater onsite based on the percentile kept.
 85% (zero lot line projects only) • **3 points** - 95% • **2 points** - 98% • **3 points**. (All except Healthcare - subtract one point)
 See LEED v4 for more specific project/site details.

MATERIALS AND RESOURCES: LEED V4

Building Product Disclosure and Optimization - Sourcing of Raw Materials - Sourcing of Raw Materials and Extraction • **1 point**
 Building Product Disclosure and Optimization - Sourcing of Raw Materials - Leadership Extraction Practices • **1 point**
 Building Product Disclosure and Optimization - Material Ingredient Reporting- Material Ingredient Reporting • **1 point**
 Building Product Disclosure and Optimization - Material Ingredient Reporting - Material Ingredient Optimization • **1 point**
 Building Product Disclosure and Optimization - Environmental Product Declaration • **1 point**

HEAT ISLAND REDUCTION - NON-ROOF: LEED V4

Paving materials with a three-year aged solar reflectance (SR) value of at least 0.28. If three-year aged value information is not available, use materials with an initial SR of at least 0.33 at installation OR use an open grid pavement at least 50% previous
 • **2 points** (except Healthcare - 1 point)
 See LEED v4 for more specific site calculations.

SOLAR REFLECTANCE

Solar Reflectance Index (SRI) is a criterion used by USGBC that measures values of sunlight and radiation bouncing from built surfaces. It is used to measure urban heat island effects in city centers. Dark pavement absorbs heat during the day and then releases it at night. This process creates a situation that causes urban centers to stay warmer all the time which contributes to air pollution and increased energy consumption. Careful selection of materials and colors can help reduce urban heat island effects.

SAMPLE OF QUALIFIED UNILOCK COLORS (≥33)				
SURFACE FINISH	COLOR	SWATCH	SOLAR REFLECTANCE	SRI*
Umbriano* (mottled)	Summer Wheat		0.42	48
	Winter Marvel		0.35	38
Series 3000* (exposed aggregate)	Golden Tan		0.40	45
	Chardonnay Tan		0.39	44
	Coral Gem		0.37	41
	Ice Grey		0.35	38
	Mineral Ice		0.31	33
Smooth/Premier (any Unilock paver shape)	TX Active White		0.46	53
	Tuscany Blend		0.39	44
	Opal		0.32	34
Standard Finish	Nevada		0.31	33
Stonemark Finish	Iron River		0.52	61

Values may change slightly by region due to variations in local aggregate. Please be sure to contact your Unilock Representative for a comprehensive and current list of SRI product values.



UMass Commonwealth

The LEED certification was the driving force in the selection of permeable pavers. Chris Fee, RLA project manager at Stantec says, "We like to be environmentally responsible. The money isn't always there, but if you measure the upfront costs and balance against energy benefits, lower maintenance costs, and higher efficiency, it's a good choice and it lends prestige to your project. We feel good about using it." Fee further describes the paver choice: "It looks more like a traditional paver and the joints act as a locking unit. We wanted a look of a traditional paver and one that was heavy-duty, but gave the permeability that satisfied LEED which requires a certain percentage of groundwater recharge."



PERMEABLE PAVER OPTIONS

No longer are the design possibilities stymied due to lack of style choices, with Unilock the possibilities range from the classic rectangular, to old-world heritage brick, to multi-unit riven finish, hexagonal and even long, linear plank. Combined with the custom capabilities for your large-scale projects, the possibilities are endless and uncompromising.



ECO-LINE®



CITY PARK PAVER™



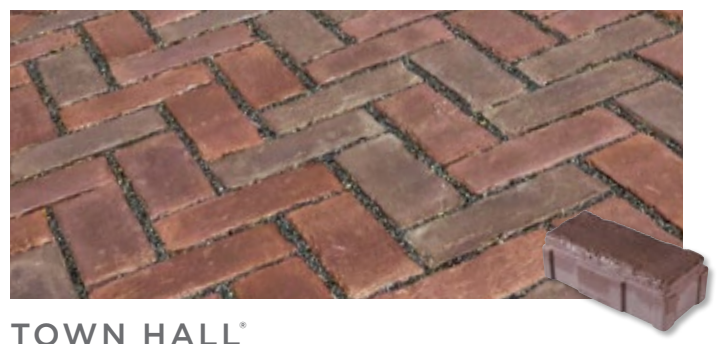
ECO-PRIORA™



THORNBURY™



ECO-OPTILOC™



TOWN HALL®



ECO-PROMENADE™



TRIBECA COBBLE™

Consult your regional Product Data Resource Guide to find locally stocked products and colors.

PAVER BUDGET CONSIDERATIONS

Product selection is greatly influenced by the application and desired aesthetic of your project. However, the latest manufacturing technologies must be taken into consideration when choosing your products as they can result in a substantial differential in maintenance and life cycle costs. Unilock products exceed ASTM standards.

FOR ESTIMATION PURPOSES

GOOD provides you with a basic, thrumix style paver. \$2.00 – 4.00 per sq ft

BETTER is an EnduraColor™ paver, manufactured to be highly **resistant to fading** and wear. \$4.00 – 7.00 per sq ft

BEST will give you **the longest lasting surface** finish with EnduraColor Plus Architectural Finishes. This technology provides ultra-realistic surface textures and unique style options that are exceptionally durable. \$7.00-11.50 per sq ft

INSTALLATION - A typical sand set over granular base including installation is approximately \$10-12 per SF.

**Contact your Unilock Representative for local pricing.*

GOOD CLASSIC

STANDARD THRUMIX is the original, most rudimentary process for manufacturing pavers. The paver is produced in a single layer with a mix of small and large aggregate, with color dispersed throughout. The downside of a standard thrumix is that in time the smaller colored aggregates on the surface of the paver will wear away, exposing larger, lighter colored aggregates. While the structural integrity of the paver remains solid, the surface color may appear to have faded.

BETTER ENDURACOLOR™

The larger aggregates that give Enduracolor products their strength, are hidden below a layer of wear-resistant, finer aggregate and concentrated color. This gives the surface a smoother, more consistent appearance that will stand the test of time. This manufacturing process is commonly referred to as **FACE MIX**.



Transformed under the supervision of our Unilock experts, natural and mineral elements are combined with concrete and synthetic iron oxide pigments to create remarkably durable paving stones and walls. Unilock is the only company in North America with memberships in Eurobeton and Stein + Design, two prestigious European concrete product innovation groups, which give us exclusive access to leading-edge product designs and manufacturing processes.

BEST **ENDURACOLOR™**
PLUS ARCHITECTURAL FINISHES

Only Unilock offers EnduraColor™ Plus Architectural Finishes. These products set a new standard for everlasting beauty thanks to proprietary blends of some of nature’s highest performing minerals such as granite and quartz, combined with manufacturing technologies that are exclusive to Unilock.



PROPRIETARY UNILOCK TECHNOLOGIES

Proprietary manufacturing technologies from Unilock deliver benefits that promote durability and reduce maintenance costs.

COLORFUSION™ TECHNOLOGY



THE LOOK OF GRANITE

A proprietary technology that disperses color randomly to achieve the look of natural granite.

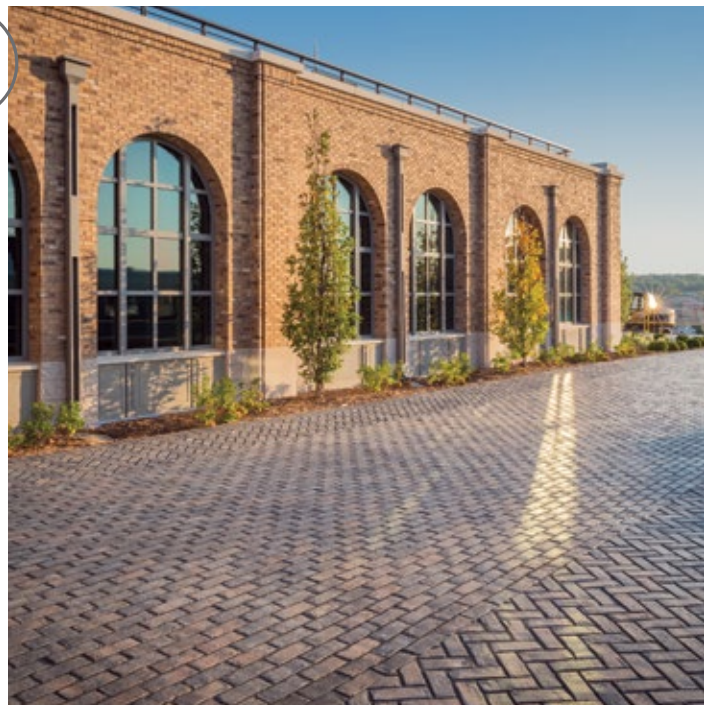


REALA™ TECHNOLOGY



NATURAL STONE TEXTURE

Ultra realistic textures are cast from natural stone, brick and historic cobblestones.



ULTIMA™ CONCRETE TECHNOLOGY



EXTRA STRENGTH

A proprietary manufacturing process that creates pavers and walls with up to four times the strength of poured concrete.



EASYCLEAN™ STAIN RESISTANCE



STAIN RESISTANCE

An integral surface protection that allows for easier cleanup before a stain can develop.

EasyClean CleanFactors (CF®)

EasyClean is available in several strengths. CleanFactor (CF) indicates the extent of protection provided. The higher the CF number, the easier the cleaning.

CLEAN FACTORS (CF)	CF 90	CF 100
Reduced dirt absorption	•	••
Stains from leaves, coffee, ketchup, mustard, wine and BBQ oils are easier to remove	•	••
Enhanced resistance to weathering	•	•
Color enhanced surface		•
Frost and de-icing salt resistance	•	•
Pavers are pre-sealed at the factory	•	•



Easier, less frequent cleaning

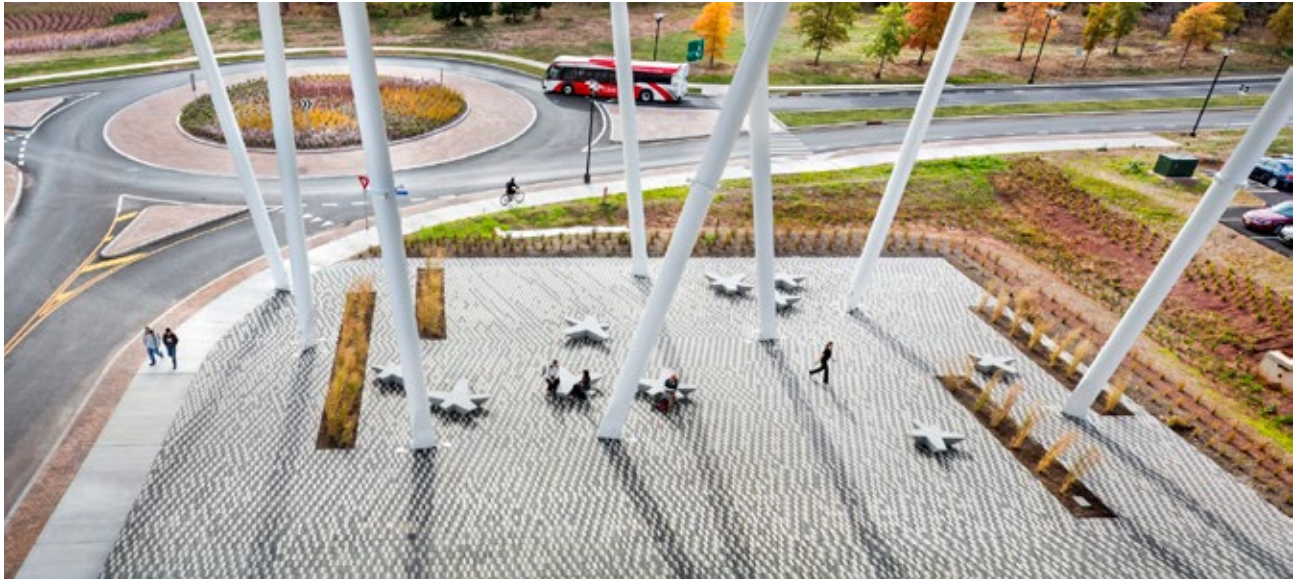
Like natural stone, concrete has fine capillaries which can be penetrated by moisture and dirt. **EasyClean is an integral surface protection** that helps prevent moisture and dirt from penetrating the stone. Marks can be quickly and easily removed with water and gentle external cleaning agents and surfaces need to be cleaned less often.

Tested and Proven.

EasyClean's higher resistance to dirt and the reduced time taken in cleaning have been **scientifically proven** - outlined in a report from the Ruhr University of Bochum. These results substantiate the reduction in required maintenance and improved overall cost effectiveness of this material over the life-cycle of your installation.

EasyClean is available in many ready-to-order products and can be applied to large scale custom orders.

Ask your Unilock Representative for more information.



LONG-TERM COST BENEFIT

Advancements in installation methods combined with the latest manufacturing technologies have resulted in significant savings for life cycle costs. Pavers today can be manufactured with a more durable surface that extends their life significantly versus thumix pavers of the past. Today we can also add stain resistance treatments in the manufacturing process which is permanently bonded to the stone so that subsequent sealing and treatments are not required.

Additional savings are also quickly realized when utility repairs or pavement modifications are required, as it is simple to pull up the pavers and then reinstall them when modifications are complete. No more unsightly patch repairs.

CASE STUDY Rutgers University

RUTGERS BUSINESS SCHOOL is the gateway to Rutgers University's Livingston Campus in New Jersey, as envisioned by the campus master plan. As part of the initiative to **create a culture of collaboration** the design at the new building purposely created areas where students and faculty can hang out, meet each other and have discussions.

The paving design mimics the facade details of the building's architecture with its pixelated design. In order to **ensure the longevity of the color**, and therefore the design, the EnduraColor™ Smooth Premier finish was chosen for this project. In the past, pavers would last about 10 years before looking weathered and faded. Rutgers University wanted to ensure they would stand up substantially longer and the initial upgrade in the **cost of the finish was substantially less** than an alternate plan to have them replaced in 10 years time.





LIFE CYCLE COSTS

Every school, whether public or private, must ensure that funds are appropriately allocated. Segmental pavements have a reputation for higher initial installation costs. However, advancements in installation techniques and product design have narrowed that gap. Machines that screed the base material offer labor savings, mechanical vacuum units aid the installation of large format pavers, so that more square feet can be laid per hour. Mechanical installation machines are now widely available and can install upwards of 10,000 square feet per day with only two people. Finally, sweepers or mechanical brooms can quickly complete the project by sweeping joint material into the paver joints. All this adds up to installation rates that are significantly lower than ever before.

Combined with reduced long-term maintenance costs, these installation savings offset additional costs at the projects outset.

CASE STUDY Morton Arboretum

The Morton Arboretum replaced a former degraded retention pond and asphalt parking lot with a functioning wetland system and permeable parking lot. The project was the beginning of a **20-year capital improvement master plan**, aimed at expanding facilities and sites to demonstrate sustainable design to visitors. All 850,000 annual visitors to the Arboretum pass through the high-performance Unilock parking area to reach the Visitor Center. The **permeable parking lot**, the largest of its kind in the Midwest when it was installed, infiltrates and collects rainwater through a subsurface gravel bed, channels water through bioswales, and directs overflow through to a final cleansing via the wetland area within the restored lake system. The complete project site is **certified by the Sustainable SITES** Initiative.



When it was installed in 2004, the permeable pavement system had a higher upfront installation cost of \$42 per sq yd, compared to \$17 per sq yd for asphalt. However, the real costs of both systems accumulate with maintenance: Over a 50-year period, maintenance costs for an interlocking permeable concrete paver system are projected to be **\$45 per sq yd, compared to \$80 per sq yd** for asphalt. Based on these forecasted annual costs, year 23 is projected as the break-even point for the permeable pavement system.

ANNUAL SAVING FOR UNILOCK® PERMEABLE PARKING LOT

Saves approximately \$3,300 annually and over 235 maintenance hours through efficient seasonal burning versus only hand weeding around Meadow Lake.

Reduces parking lot maintenance costs by approximately \$25,100 per year when averaged over 50 years by eliminating seal coating, striping and resurfacing.

Full Case Study from the Landscape Architecture Foundation
<https://landscapeperformance.org/case-study-briefs/morton-arboretum-meadow-lake-parking#/cost-comparison>



Ecolog[®] Morton Arboretum Lisle, IL

DURABILITY

At academic institutions in the United States and Canada, Unilock pavers and walls have proven their ability to withstand the demands of weather and the rigors of campus life.

FREEZE-THAW

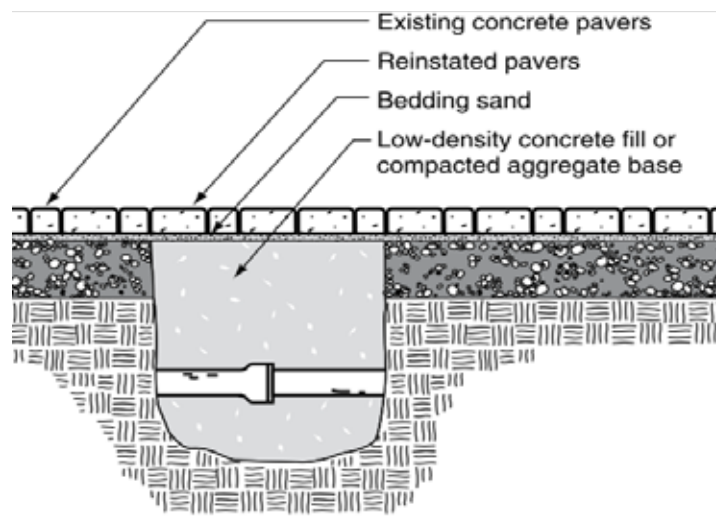
When designed with the correct base details, allowing for free-flowing drainage, the likelihood of shifting due to freeze-thaw cycles is greatly reduced. This is particularly important in climates that have frequent freeze-thaw events, rather than cold climates that stay frozen for the entire winter. Frequent freeze-thaw events add particular stress to the pavement as the water that drains to subbase will expand as it re-freezes. When this happens at or just below the surface, this can create undulations in the pavement. Ensuring free drainage allows water to quickly escape from the surface area and remain well below grade.

Contact your Unilock Representative for more detailed information about the correct base materials for your region. With all of the correct base details in place, along with an expert installation, excellent performance is a certainty.



UTILITY REPAIRS

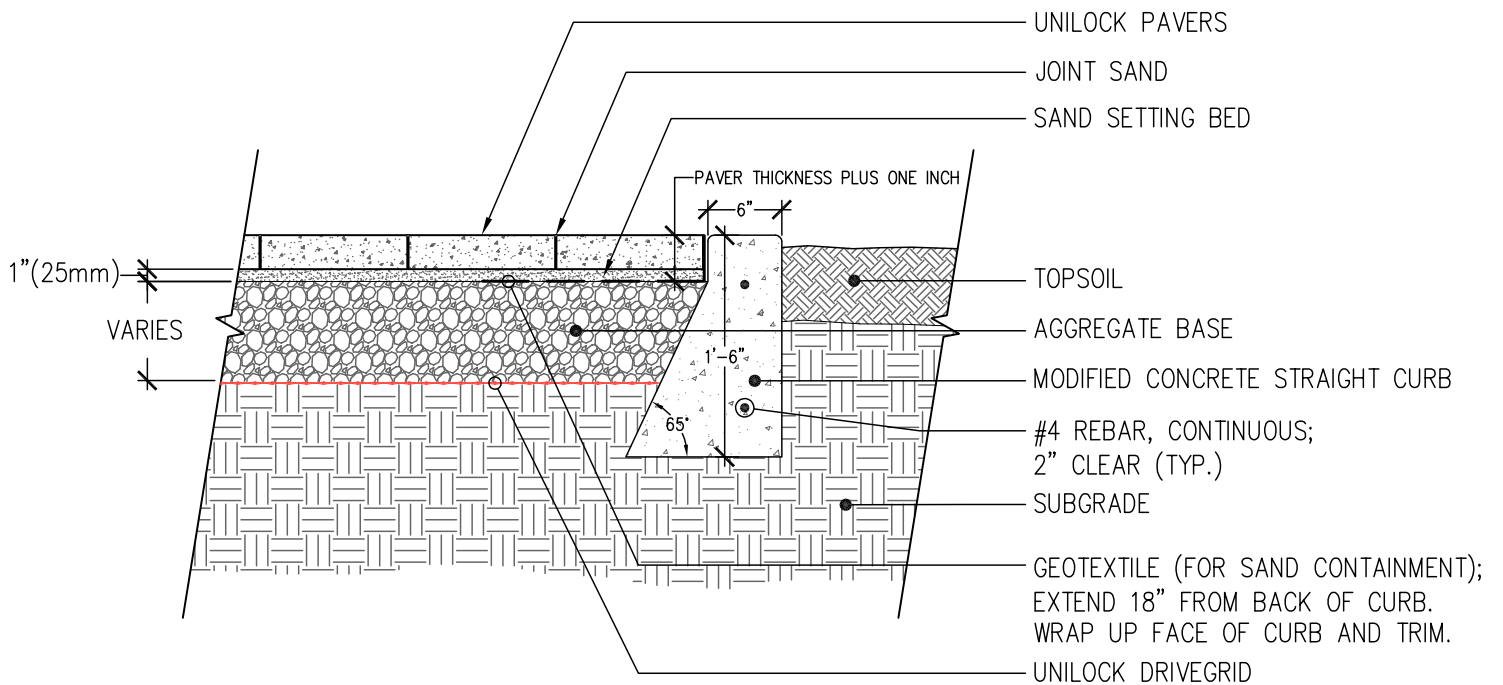
Concrete pavers can be removed for access to underground utilities by removing the required area plus about 18 in. (0.5m) of pavers on either side. When utility repairs are complete, fill the trench with base material and compact. Reinstall the pavers, compact and refill the joints with sand.



Cross section of reinstated utility cut into interlocking concrete pavement. (ICPI)

SETTLEMENT

Settlement after initial installation can sometimes be an issue when working next to other structures or edge details, infrastructure objects (such as lighting posts and hydrants) as well as sidewalks. Creating an edge detail with a 65° angle tapered edge reduces the aggregate volume space for settling. Geotextile wrapped up the face of the concrete edge acts as a containment preventing sand migration, and the addition of Unilock DriveGrid™, with Tensar® Triax® Technology, reduces base movement by mechanically stabilizing the base aggregate.



Cross section with modified curb and DriveGrid to reduce settlement.

SETTLEMENT REPAIRS

Settlement can occasionally be found against buildings or curbing where it may be more difficult to adequately compact the base material. Other factors can include water in the base material, washed out bedding and joint sand or loose edge restraints that can allow pavers to move apart.

Pavers in these areas can be removed, base material added or removed as necessary to level the base, compact if necessary, and then the units reinstated with no wasted paving materials or unsightly patches. Bedding sand alone shouldn't be applied to adjust the level of the surface if its thickness exceeds 1½ inches (40 mm).



Example of washed out or settled joint material causing settlement.

THE TRUTH ABOUT MAINTENANCE

MAINTENANCE

With a carefully thought out landscape maintenance plan, your facility will look great for years to come. Simple maintenance plans are comprised of monthly, quarterly, semi-annual and annual tasks which keep your pavement surfaces looking great and reduce long term life cycle costs.

There is a positive correlation between investing in maintenance and the extension of a facilities life cycle.

CLEANING

For day-to-day cleaning, simply hosing off the surface with a sufficient amount of water will produce great results. This is particularly effective on factory-sealed and sealed projects.

For a deeper cleaning of the pavers use a power washer with water. Do not use the washer on high pressure as this may damage the surface. Always keep the nozzle at a 30° angle 12 inches away from the surface and use the fan nozzle setting. If some jointing sand washes out, you may need to sweep in some new sand.

For more substantial stains, a liquid detergent or specialized cleaner may be used. In some cases, it may be more efficient to replace the stained pavers with new ones.



PREVENTING VEGETATED GROWTH

Windblown seeds can become lodged in paver joints and germinate between pavers. Keep paver joints topped up with joint material to help prevent this occurrence. There are more technologically advanced choices for today's joint material including polymeric sands, joint sealers and epoxy mortars that reduce this maintenance and the need for more frequent top-up.

Weeds can be removed by hand, burned or managed with herbicides. Take care in using herbicides so that adjacent vegetated areas are not damaged. Consider using biodegradable products that won't damage other vegetation or pollute water supplies when washed from the pavement surface.

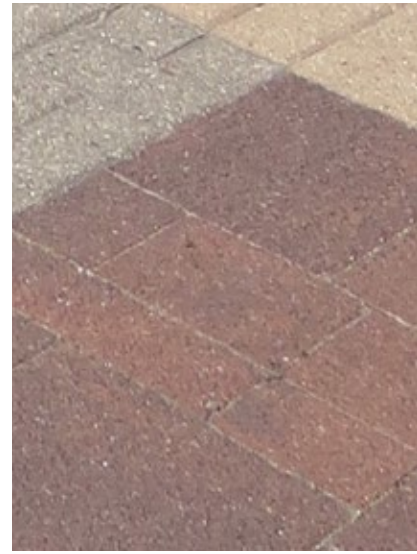


Consider a flexible epoxy joint material or stabilizing joint sand using a polymer or sealer to help prevent seeds from germinating.



Installed in 1998 - Photo taken in 2013

Championship Plaza at North Central College Naperville, IL



Installed in 1998, today this plaza surface still looks fantastic. The maintenance team at North Central College follow a simple plan that includes snow removal using a rotary brush and rubber tipped plow to ensure the surface is protected from marks and breakage.

ICE PREVENTION

For temperatures as low as +20°F (-7°C). Sodium Chloride (NaCl), commonly known as rock salt, is the preferred deicing chemical.

Only when necessary, use Calcium Chloride (CaCl₂) below +20°F (-7°C) to -2°F (-19°C).

De-icing salts should not be applied sparingly out of fear of damaging the concrete. If only a small amount of salt is applied, this will tend to initiate a number of freeze-thaw cycles, rather than just the one if an adequate amount is used. It is recommended to sweep and remove any excess deicing chemical after the ice and snow melts.

The use of deicers containing Ammonium Nitrate, Ammonium Sulfate, Magnesium Calcium Magnesium Acetate (CMA), Potassium Chloride (KCl), Potassium Acetate (KA) should be strictly avoided as they rapidly attack and disintegrate concrete. Please note that fertilizers can also contain Ammonium Nitrate and Ammonium Sulfate.

PLOWING

Plow scrapers and blades should be equipped with either shoes or high-density plastic blades when used on interlocking concrete pavers in order to reduce the chance of damaging joints and the surface of the pavement. Scraping the surface without the protective blade covers can result in rust marks and paver breakage. This will negatively impact the aesthetics of the pavers, but will not damage their structural integrity.

Alternately, a rotational snow broom can be used to remove snow with minimal damage to the paver surface.



EDUCATION

Unilock offers free educational seminars for your maintenance and landscape crews with tips and techniques to ease up-keep. **Contact your Unilock Representative to schedule one today.**

NAME	CITY	STATE
East Hampton High School	East Hampton	CT
CREC Public Safety Academy	Enfield	CT
Fenton High School	Bensenville	IL
Jay Stream Middle School	Carol Stream	IL
CPS - Alcott College Prep School	Chicago	IL
Cps - Beidler Elementary School	Chicago	IL
CPS - Coonley Elementary School	Chicago	IL
CPS - Edwards Elementary School Annex	Chicago	IL
CPS - Gwendolyn Brooks Prep	Chicago	IL
CPS - Hale Elementary School	Chicago	IL
CPS - Lawndale Academy	Chicago	IL
CPS - Lindblom Math and Science	Chicago	IL
CPS - Morrill Elementary School	Chicago	IL
CPS - Oriole Park Elementary School	Chicago	IL
CPS - Rosenwald Elementary School	Chicago	IL
CPS - Walter Payton College Prep High	Chicago	IL
Immaculate Conception - St Joseph	Chicago	IL
Downers Grove High School	Downers Grove	IL
Highland Park High School	Highland Park	IL
Lake Forest High School	Lake Forest	IL
Steeplerun Elementary	Naperville	IL
Hubble Middle School	Warrenville	IL
Dana Hall School	Wellesley	MA
Roxbury Latin Highschool	West Roxbury	MA
JHS 185 Edward Bleeker School	Flushing	NY



Hillfield Strathallan College, Hamilton, ON



Walter Payton College Prep High School, Chicago, IL



Immaculate Conception - St Joseph, Chicago, IL



CREC Public Safety Academy, Enfield, CT



Mt Lebanon High School, Pittsburgh, PA



Royal St. George's College, Toronto, ON

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PS 366 Washington Heights Academy	New York	NY
Carey Local Schools	Carey	OH
Max Hayes High School	Cleveland	OH
Findlay Local Schools	Findlay	OH
City of Westerville Local Schools	Westerville	OH
Mount Pleasant Public School No. 8	Brampton	ON
Manchester Public School	Cambridge	ON
Centennial High School	Guelph	ON
Hillfield Strathallan College	Hamilton	ON
Sandhill Public School	Kitchener	ON
Royal Cachet Montessori School	Markham	ON
Milton High School	Milton	ON
Erin Mills School	Mississauga	ON
Canadian Martyrs Catholic School	Newmarket	ON
Pierre Elliot Trudeau Public School	Oshawa	ON
Meadowvale Sheppard School	Scarborough	ON
Laura Secord Secondary School	St Catharines	ON
Bayview Glen Private School	Toronto	ON
Havergal College	Toronto	ON
Joseph Brant Public School	Toronto	ON
Pierre Laporte Middle School	Toronto	ON
Princess Margaret Junior School	Toronto	ON
Royal St George's College	Toronto	ON
Brooklin Secondary School	Whitby	ON
Mt Lebanon High School	Pittsburgh	PA



Western Illinois University, Moline, IL

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University of Connecticut	Mansfield	CT
Yale Hendrie Hall	New Haven	CT
Cornell College	Mt Vernon	IA
Waubonsee Community College	Aurora	IL
Malcolm X College	Chicago	IL
De Paul University	Chicago	IL
Northeastern Illinois University (NEIU)	Chicago	IL
University of Illinois (UIC)	Chicago	IL
Northern University	DeKalb	IL
Northwestern University	Evanston	IL
College of DuPage	Glen Ellyn	IL
Western Illinois University	Moline	IL
Triton College	River Grove	IL
Wheaton College	Wheaton	IL
Purdue University	West Lafayette	IN
Amherst College	Amherst	MA
Northeastern University	Boston	MA
Education First	Cambridge	MA
Bristol Community College	Fall River	MA
Assumption College	Worcester	MA
University of Maryland Baltimore County	Baltimore	MD
Colby College	Waterville	ME
University of Michigan	Ann Arbor	MI
Michigan State University	East Lansing	MI
Walsh College	Troy	MI



Bristol Community College, Fall River, MA



University of Michigan, Ann Arbor, MI



Brown University, Providence, RI



Case Western Reserve University, Cleveland, OH

NAME	CITY	STATE
Fordham University	Bronx	NY
SUNY Cortland Tennis Courts	Cortland	NY
Iona College	New Rochelle	NY
Iona Preparatory School	New Rochelle	NY
Case Western Reserve University	Cleveland	OH
Cleveland State University	Cleveland	OH
Lorain County Community College	Elyria	OH
Lorain Community College	North Ridgeville	OH
Mohawk College MSA Plaza	Ancaster	ON
McMaster University	Hamilton	ON
University of Western	London	ON
York University	North York	ON
Sheridan College	Oakville	ON
University of Ontario Institute of Technology	Oshawa	ON
Trent University	Peterborough	ON
Laurentian University	Sudbury	ON
Centennial College	Toronto	ON
University of Toronto	Toronto	ON
University of Waterloo	Waterloo	ON
Wilfred Laurier University	Waterloo	ON
University of Windsor	Windsor	ON
LaSalle University	Philadelphia	PA
University of Pennsylvania	Philadelphia	PA
New England Tech	East Greenwich	RI
Brown University	Providence	RI
University of Wisconsin - Cover	Madison	WI

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