



MagnumStone Gravity Walls Master Land Development Efficiency

The Carnegie at Washingtonian Center’s goal was to maximize this hillside commercial property’s development potential for a seven-story senior center complex. MagnumStone’s signature gravity wall extenders greatly reduced excavation and installation time, plus built reinforced retaining walls closer to property lines and utilities.

MagnumStone’s reinforced gravity wall solutions optimized land development and delivered exceptional aesthetics for this project.

Total Block Installed	15,288 sq. ft. (1,420 sq. m.)
Maximum Height	26 ft. (7.9 m.)
MagnumStone Manufacturer	<u>York Building Products</u>
Site Contractor	<u>Ross Contracting</u>
General Contractor	<u>Balfour Beatty</u>
Wall Designer	<u>ECS</u>
Civil Engineer	<u>Soltész</u>

MAGNUMSTONE GRAVITY WALLS MASTER LAND DEVELOPMENT EFFICIENCY

Gaithersburg, Maryland, USA



■ CHALLENGES & SOLUTIONS: REINFORCED GRAVITY WALLS ADAPT TO DEVELOPMENT'S LIMITED SPACE

This commercial development project's senior living facility is built on a large, sloped property with five MagnumStone retaining walls. MagnumStone's precast system was recommended to optimize buildable land, accommodate structures and withstand the development's heavy active loading pressures. The site's main challenges included:

- Walls in close proximity to structures and underground utilities
- Diverse wall designs, including tall heights and elegant curves
- Insufficient space for geogrid reinforced wall designs
- Adverse year-round weather conditions for installation

With blocks produced by [York Building Products](#), MagnumStone's creative design flexibility and reinforced gravity retaining walls overcame the site's critical design considerations. The gravity extender units require minimal excavation depths to fortify retaining walls in closer proximity to buildings and behind-the-wall utilities. The system's efficient lift-and-place construction techniques enabled year-round installation of MagnumStone's hollow core blocks and gravity extenders to expedite timelines.

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PROJECT OVERVIEW: TIGHT SPACES & WIDE-RANGING MAGNUMSTONE SOLUTIONS

The Carnegie at Washingtonian Center is a massive seven-story senior living complex located in Gaithersburg, MD, USA. This robust development is home to a 450,000 sq. ft. retirement community with independent living, assisted living and memory care. The project's goal was to maximize this hillside commercial property's development potential.

Five [MagnumStone gravity walls](#) totaling over 15,200 sq. ft. (+1,400 sq. m.), were selected to

build closer to, and protect, the site's structures and utilities. MagnumStone's gravity wall extenders greatly reduced excavation and delivered reinforced wall solutions to efficiently optimize land development. This included a large, curved wall design that extends land use and supports heavy loading. MagnumStone's adaptable retaining wall designs securely shape and blend the property's premium facility with vibrant, outdoor spaces and pathways.

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■ WALL DESIGN: REINFORCED GRAVITY WALLS DESIGNED TO LAST A LIFETIME

Experts at [ECS](#), the project's wall designer, recommended MagnumStone based on their experience with the system and its interactive design software. The [blocks' design versatility](#) and wall depth reinforcement options made planning and designing these diverse retaining walls faster and easier.

Built on a hillside property, the retaining walls played a vital role in extending buildable land with space-efficient reinforcement. The largest wall stands at 26 ft. (7.9 m.) high with a minimal base depth of MagnumStone's interlocking blocks and extender units. The gravity extenders allowed more flexibility to build closer to structures and property

lines, which alternatives could not. Geogrid reinforced walls were not a viable option for this project due to the development's limited excavation area.

The compact site's limitations made MagnumStone's gravity extender reinforcements an ideal fit to achieve the commercial development's plans. From tall walls that support the building and parking lots, to smaller walls that protect utilities, MagnumStone offered comprehensive solutions. That also includes the hollow core blocks' internal drainage columns. They expedite the development's water removal to an on-site stormwater containment area below the biggest retaining wall. This helps to maintain wall strength and extend the retaining walls' lifespan.

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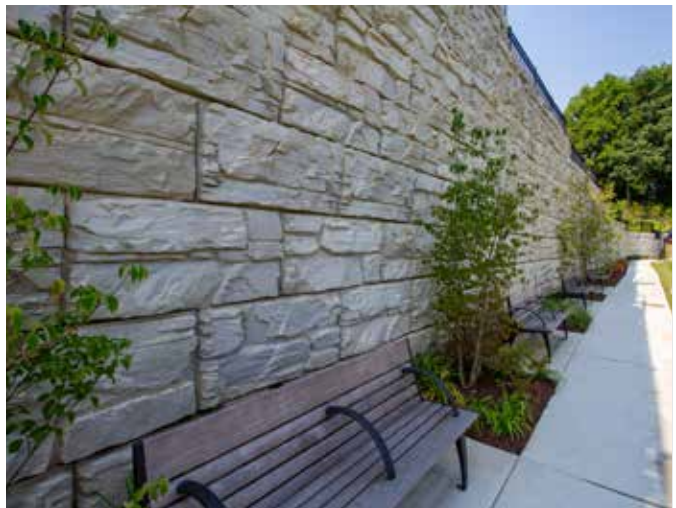
■ INSTALLATION: PREMIUM LAND USE EFFICIENCY WITH MAGNUMSTONE WALLS

These retaining walls' primary functions range from slope stabilization to infrastructure support for buildings, roadways and parking lots. Installed by [Ross Contracting](#), MagnumStone's blocks helped streamline the wall construction process to develop a significant, elevated property extension. This made the seven-story complex and its underground utilities easier to access and install, with increased parking space.

Notably, due to the property's constrained space, two walls have vehicular guardrails and fence posts installed directly into the blocks' hollow cores. These guardrails are specially designed to comply with City of Gaithersburg's fire truck loading capacities and distribute active loading pressures. This maximized developable land with a safe, durable and space-conscious solution.

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■ AESTHETICS: MAGNUMSTONE BLOCKS NATURALLY ENHANCE LANDSCAPE DESIGN

MagnumStone's natural stone look blends into The Carnegie at Washingtonian Center's landscape to further bolster the property's design. The blocks blend with the building's modern design and color tones, while complementing its natural terrain.

The system's strategically designed top block units are installed along the highest course of

each retaining wall. This allows landscaping and parking areas to extend all the way to the wall's facing for cleaner finishing details. Combined with the greenery and hardscaping that complete the development, MagnumStone's appearance further enhance aspects of the project's landscape design.

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PROJECT SUMMARY: EVERLASTING STRENGTH OF GRAVITY WALL REINFORCEMENT

As this project proves, MagnumStone's reinforced gravity walls deliver impressive design solutions for walls of any size and complexity. These five gravity walls efficiently convey stormwater and minimize excavation depths to optimize land and building closer to critical infrastructure. From curves to tall walls, the system's gravity wall extenders securely handle challenging design considerations of these wide-ranging retaining wall applications.

The retaining walls maximized buildable space for the senior living facility with strong, reinforced gravity walls. MagnumStone's exceptional strength, drainage and design versatility perfectly suited the land development needs of The Carnegie at Washingtonian Center. The gravity extenders' reinforcement achieved the commercial development's design objectives with long-lasting, space-efficient and timeless looking retaining walls.

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For future project sites that have space constraints and utilities in close proximity to retaining wall that require reinforcement, MagnumStone gravity walls can provide more versatile design options.

Download MagnumStone's comprehensive [Retaining Wall Design & Analysis Software](#) to see how gravity extends streamline designs, installations and project completions. For more technical insights and information, view MagnumStone's full library of [block specifications, engineering drawings and CAD details](#).

This project was successfully completed thanks to the teams at [York Building Products](#) (MagnumStone Producer), [Ross Contracting](#) (Site Contractor), [Balfour Beatty](#) (General Contractor), [Soltesz](#) (Civil Engineer) and [ECS](#) (Wall Designer).

CONTACT OUR TEAM TODAY

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