

Pittsburgh Green Garage Initiative

Free-standing parking garages are often identified as poor energy performers. In 2014, 73% of City of Pittsburgh garages reporting energy consumption more than national median average baselines. Modernizing garage lighting enables operators to utilize high efficiency lighting and control systems which can create cost savings, energy consumption reductions and advancements in building performance.



Pittsburgh's parking garages could become efficient, resilient structures through publicly-owned assets.

In 2014, the Pittsburgh Green Garage Initiative (PGGI) began with the City of Pittsburgh and Green Building Alliance (GBA) asking if Pittsburgh's parking garages could become

efficient, renewable, resilient structures through installation of solar photovoltaics with battery backups on upgraded, publicly-owned assets. The result was a more formal collaboration to create green, renewable and smart parking garages; partners include the City, GBA, Public Parking Authority of Pittsburgh (PPAP), Urban Redevelopment Authority of Pittsburgh (URA), and Sports & Exhibition Authority of Pittsburgh (SEA) & Allegheny County. The initiative works collaboratively between agencies to maximize energy efficiency and reduce environmental impacts and encourage sustainable mobility solutions for municipally operated parking facilities in the City of Pittsburgh.

Changes to City of Pittsburgh Lighting Code

In the Spring of 2014, Mayor William Peduto and City Councilman Dan Gilman, with assistance from the City's Department of Innovation and Performance-Office of Sustainability, GBA, and SEA, created a simple change to the City of Pittsburgh's municipal garage lighting code.

This change was necessary due to a discrepancy in the existing code. The SEA and their engineer CJL Engineering discovered the conflicting language while planning a lighting retrofit at three of their garages.

[See Details of the City of Pittsburgh Lighting Code](#)

The Case for Greener Parking Garages

A collaboration years in the making, PGGI's roots began in 2013 when SEA was planning to upgrade lighting in three parking garages. The agency was interested in using very high efficiency lighting, but realized that there was a discrepancy in the building code that would prevent it from maximizing its efforts. With a unanimous vote to resolve the code change, just one year after completing its resulting retrofits, SEA experienced **64% reductions in annual electricity use**. The payback period for the retrofit of 1,356 fixtures with accompanying motion and daylighting sensors is 3.5 years. Duquesne Light rebates helped SEA recoup 18% of its cost.

This is a great example of interagency cooperation and innovation – and Pittsburgh's leadership in energy efficiency and building performance,” said Pittsburgh Mayor William Peduto. “It is a smart investment in

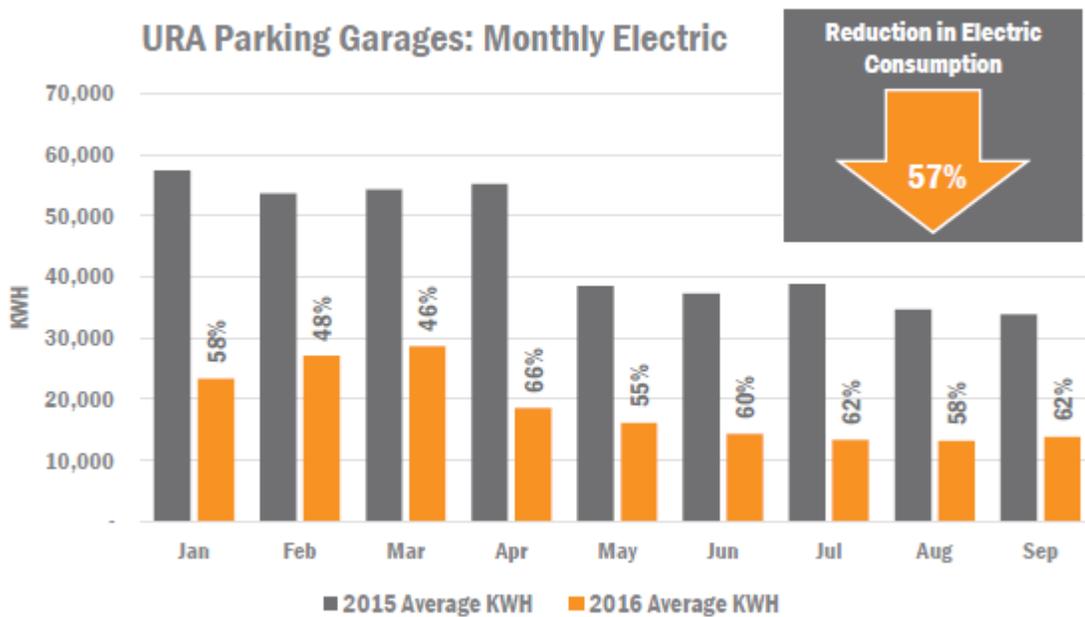
our infrastructure that will save energy, reduce operational costs, and provide for a better customer experience.

The Pennsylvania Economic Development Association (PEDA) Grant

In 2014, the City of Pittsburgh, with cooperation from GBA, requested PEDA support the Pittsburgh Green Garage Initiative through grant funding which would provide seed capital establishing a Lighting Infrastructure Fund and leverage both municipal and private parking operator capital investments in lighting upgrades and controls. [PEDA awarded funding of nearly \\$470,000](#) which enabled the Pittsburgh Parking Authority and the Urban Redevelopment Authority to capitalize significant lighting infrastructure upgrades.

As part of the garage initiative and energy grant, URA retrofitted five local parking structures — and is extremely pleased with the results. For the first nine months of post-retrofit operations, the Authority is averaging a 57% reduction in electricity use.

URA's complete retrofit portfolio to-date includes five parking garages with 3,051 total parking spaces lit by 1,436 new fixtures. As a result of these amazing impacts, the Authority is evaluating its entire parking garage portfolio and planning to leverage savings from its initial projects by reinvesting into other facilities via a new sustainability revolving fund.



Pittsburgh Parking Authority is not far behind, completing a similar First Avenue Garage lighting and controls retrofit in August 2016 expected to have comparable jaw-dropping electricity reductions of 50% to 60%. CJL Engineering did the lighting design on all complete SEA, URA, and PPAP parking garages. PPAP is now designing similar retrofits on nine additional garages.

All 18 public parking garage projects engaged with PGGI indicate that structures of all types have opportunities to reduce their resource use in ways that may often be overlooked or underestimated. As PGGI partners continue to make energy improvements to more structures, PGGI and GBA are ensuring that efficiency opportunities for parking garages – and other oft-overlooked spaces – are brought into the light.

Read more about the Green Garage Initiative in *Viride* magazine: <https://www.go-gba.org/illuminating-way-toward-greener-parking-garages/>