



**GIANNASCA DEVELOPMENT GROUP LLC REVEALS
DETAILS OF ENERGY INFRASTRUCTURE AND GREEN BUILDING TECHNOLOGY
COMPONENTS OF READING AND BERKS COUNTY PROJECTS**

***Developer on the forefront of technology in “RiverView” a Mixed-Use, 110-Acre
Planned Residential Development and the “Berks Urban Core Redevelopment”
projects, an Industrial and Mixed-Use 775 Acre initiative.***

Giannasca Development Group LLC, a national design and development firm based in New York and Maryland, with new offices in Reading, launched “RiverView,” a \$2.8 billion dollar mixed-use project on an 110-acre tract of land on Reading’s Schuylkill River waterfront in early 2008. That fall, they spearheaded the Berks Urban Core Redevelopment (BUCR) initiative, combining four planned industrial/mixed-use redevelopment sites totaling 775 acres with the transportation improvements that enhance them. The firm has now released new details on the energy infrastructure components of the project, as well as some of the green building technology features that will be incorporated into the projects’ components. Ironically, several of the project’s proposed transportation and energy infrastructure projects invoke a sense of history, as similar but earlier technology was once used in the same locations in the late 1800’s and early 1900’s.

Hydropower - RiverView was originally presented to the public with a waterfront promenade and supporting wall, which along with other engineering design components, relocate the properties out of the FEMA designated flood zone. The +/- 10’ fluctuation of the Schuylkill River created an opportunity to artificially maintain the river at it’s peak elevation to increase the typical river depth from 3.5’ to 13.5’, creating greater opportunity for desirable recreational uses that could be incorporated into the project. Historical research revealed that the Schuylkill River was once controlled by a series of 24 dams, locks, and canals, not for recreation, but for transport of goods and coal using the river. In addition, the maintained water elevation, or head, combined with the mean river flow of 1,800 –2,400 CFS created an opportunity for a 1.5 – 2 MW small hydropower generating plant which could power the equivalent of 2,500 residences in the RiverView project. Further research revealed that a Federal study of prospective hydropower sites identified a potential sister plant, a high head/high power 8.7 MW hydropower site just down river of the RiverView project. Giannasca also learned that the same location was the site of the old Klappertal hydroelectric plant that was

operational in the early 1900's. In the mid-1900's, many of the rivers impediment structures were removed due to structural instability, and to enable fish passage. But today's concrete structures, fish friendly hydropower turbines, and incorporation of a kayak course as a recreational component, which fish use to navigate upstream, make the RiverView hydropower electric generating components feasible. The Federal and State governments also offer incentives such as energy production tax credits, and developing alternative forms of energy are encouraged by both President Obama and Pennsylvania's Governor Ed Rendell. The proposed hydropower structure was relocated 1,000' downriver to serve as a structure for three additional purposes: (1) accommodate the communities desire to create opportunities for additional river crossings and connect both sides of the Schuylkill River, (2) create an opportunity to connect the trolley proposed for RiverView project and the Penn Street Corridor to the wealthy adjacent neighborhoods of Wyomissing, West Reading, and Cumru, and (3) re-establish the freight rail connection to the expanding Corrstack corrugated box manufacturing and green biomass plants. The new site is near the location of the old freight rail bridge that served the original user, the Reading Iron Works Company. These additional uses accommodate the Governor and City/County's desire for improved trails for pedestrian and bicycle use, alternate means of transportation, and reestablished freight rail service. These uses of the structure enhance the funding available from several federal and state programs including Federal Highway Administration's Recreational Trails Program, Bicycle & Pedestrian Program, and the Transportation Equity Act extension, as well as the Governor's Rail Freight Infrastructure assistance program.

Cogeneration – The RiverView and Berk's Urban Core Redevelopment project's urban community design on many acres of property combined with common development and ownership creates opportunities for sizable cogeneration, and facilities within the various campuses. The RiverView project is also serviced by two high pressure natural gas mains which connect on the property to provide the fuel source desired for cogeneration equipment. The first location being investigated for cogeneration equipment in the 2-4 MW range is the lower level of the Reading Hardware Building's boiler building adjacent to Willow Street in which the high pressure main is located. The boiler building attached to the larger of the two Reading Hardware buildings originally serviced both buildings' heating, electrical, and steam requirements for manufacture of brass building hardware. It originally was designed for four 300 HP coal fired boilers with automatic conveyor feeds and hoppers, two 500 KW generators, and related equipment. Due to the reduced size and efficiency of today's equipment, cogeneration equipment located in this building could support the heating and electrical needs of the two existing buildings now being used and proposed as office space, as well as other nearby buildings in the RiverView project. Similar new facilities will be located in other areas of the project. Giannasca is currently pursuing this concept with it's engineers, vendors, and GE Power, the manufacturer of two 18 MW dual fuel combustion turbine units which are part of the nearby 281 MW Reliant Energy Titus power plant. Attached to this document is a recent article discussing other developments that have incorporated cogeneration into their projects.

Solar – The Berks Urban Core Redevelopment project's 9th Street Corridor component includes 200 acres of centuries old landfill property that is a few years away from the

end of its useful life. Giannasca Development Group has proposed to reclaim this property for productive use. As it is adjacent to the Schuylkill River, it is too high to be used for usable riverfront development. Therefore, the most desirable property with views of the river is proposed for park and recreational uses such as a golf course and country club affiliated with the RiverView project. The remaining land, due to its close proximity to Reliant Energy and Met-Ed substations, is proposed as a 50 -100 MW utility-scale solar plant. The current low cost heliostats and solar thermal plant designs available, with dual-axis tracking solutions available for Concentrating Solar Power tower, tracking Photovoltaic and Concentrating Photovoltaic implementations improve efficiency and profitability so that .05/kWh levelized operating cost for baseload dispatchability is achievable without subsidy or tax credit. However, on July 9, 2008, Governor Edward G. Rendell signed into law the \$650 million Alternative Energy Investment Fund, providing Pennsylvania with new resources to spur innovation, development and the use of alternative energy solutions. The Alternative Energy Investment Fund also encourages economic development and renewable energy projects through tax credits, grants, loans or reimbursements available to entities engaged in developing and deploying renewable energy. Therefore, utility-scale solar is an ideal opportunity, especially since Pennsylvania residents and businesses face skyrocketing utility prices when the electric rate caps expire next year. In addition to also installing solar panels on the roofs of the RiverView and BUCR project buildings, next generation solar technology can also be incorporated into building materials. Companies such as Nanosolar have developed and commercialized a low-cost CIGS ("Copper Indium Gallium Diselenide") solar cell manufacturing process which is printable and can be applied to many building surfaces. Although the company started selling panels in December 2007 at around \$1 per watt (one fifth the price of silicon cells) to utility-scale plant developers, they also sell a light-weight solar-electric cell foil which can be cut to any size, and plan on offering more building integrated photovoltaic products in the future.

Waste To Energy – Giannasca Development Group has partnered with Global Energy Solutions (GES) to utilize its innovative technology, the Thermal Converter System, in order to address several of the City of Reading and Berks County's current problems. They include both the imminent closure of the local County landfill, and the City and County's dilemma of what to do with its waste products that other disposal methods in the industry cannot process with traditional incinerators, or discard in landfills. One of the municipalities' issues is the disposal of sewer plant sludge, which it currently disposes a significant volume by treatment and application as fertilizer on 38 farms in the County. At the last County Planning Commission meeting, several issues were discussed, including that the County Conservation Department no longer monitors the disposal process, which is now done by the PA Department of Environmental Protection. In addition, per State law, sewage treatment plants must have a monitoring process to test the sludge, and submit a detailed report of what is in the material before it leaves the plant. Also, some municipalities have additional costs for drying beds which take the sludge a bit further to be more organic. The Planning Commission discussed the current disposal method is a costly and labor intensive process, as reflected in the comment from County Planning Commission Chairman Glen Knoblauch as follows: *"Mr. Knoblauch mentioned that after last month's meeting, the tone of the discussion was that maybe the Comprehensive Plan ought to take an **outright position against***

sludge application. " The GES process creates an opportunity to provide an environmentally conscious method of waste destruction while also generating power.

Geothermal – The RiverView project's location along the Schuylkill riverfront enables open loop or closed loop geothermal building heating and cooling systems and large scale geothermal plants to be incorporated into the project either as stand alone systems or in combination with other energy efficient technologies. Giannasca Development Group's engineers are currently studying the best way to take advantage of this opportunity.

Fuel Cells – Companies such as Starwood Hotels and the Long Island Power Authority started installing fuel cells in their facilities to supply supplemental and backup power. An article discussing such an installation by Starwood is attached to this document. Fuel Cell technology is the preferred method of powering automobiles in the future, as well as offering many other uses. As the technology improves and the process to extract Hydrogen from propane and water becomes cost effective, fuel cells will become more common as a component of a building's equipment in the same way as other forms of energy production, and therefore may be feasible to incorporate in the later phases of the RiverView and BUCR projects.

For more information about Giannasca Development Group and the RiverView or BUCR projects, call (610) 685-2555 or visit www.GiannascaDevelopment.com.

February 25, 2009

SQUARE FEET

Towers in Manhattan Gather Heat from Power Generators

By ALEC APPELBAUM

Later this year, a double-rigged crane will hoist a giant power turbine part way up One Penn Plaza, a black monolithic skyscraper next to Madison Square Garden. When the natural gas-powered generator on the 12th floor starts, it will not only produce some 6.2 megawatts of electricity — enough to power up to half the 57-floor building on a busy day — but it will also siphon off wasted heat and use it to help heat and cool the 37-year-old skyscraper.

With tenants defaulting and lenders withholding credit, this might not seem the opportune time for landlords to be getting into energy recycling. But [Vornado Realty Trust](#), which owns One Penn Plaza and 27 other office buildings in [New York City](#), is among the small but growing number of commercial landlords in the area that are installing the energy-efficient power stations known as cogeneration plants, or cogens for short.

Unlike conventional power stations, which let excess heat dissipate into the air as exhaust, cogens reuse that cast-off energy for heating and cooling. Given the improved efficiency, combined with government incentives and rising electricity costs, some landlords are now finding it cost-effective to install cogens and generate their own power.

The Related Companies, a large residential developer, recently installed a cogen at [Manhattan Plaza](#), a huge 1970s housing complex in Midtown. [Cooper Union](#) for the Advancement of Science and Art is constructing one at its new academic building, a futuristic structure designed by [Thom Mayne](#). And the [Durst Organization](#) has installed a cogen plant at One Bryant Park, a new office tower near Times Square.

The appeal is simple: cogens help landlords lower energy costs. “You start to see savings on monthly bills right away,” said Clark Wieman, Cooper Union’s planning director. He said that the new generator would cost eight cents a kilowatt-hour, roughly half the cost of buying electricity from [Con Ed](#).

For landlords, the assurance of on-site power also provides added comfort. “Backup power is another amenity we offer to our tenants,” said David R. Greenbaum, president of Vornado’s New York office division.

Cogens are also considered greener, because they lighten the demand on Con Ed’s older, dirtier plants and generate as-needed energy on location. Indeed, only 40 percent of each watt that Con Ed generates reaches the customer, according to Thomas W. Smith, the chief executive at Endurant Energy, the consulting firm managing the One Penn Plaza installation, mainly because much of it is lost when the electricity is generated.

By contrast, the cogen at One Penn Plaza is expected to attain efficiency levels as high as 80 percent, according to Mr. Smith. That translates roughly into 2,800 metric tons of greenhouse gas emissions that are offset each year. And the captured steam will replace a fifth of the centralized steam that now controls the temperature of the building.

“This is changing how buildings generate power, and helping the city alleviate a huge problem in getting power to buildings,” Mr. Smith said.

The technology behind cogenerators is straightforward. According to the Oak Ridge National Laboratory, a federal research center affiliated with the Department of Energy, power generators that recycle excess heat have been around since the early 20th century, mostly in giant factories. But in recent years, as high-tech Internet hubs and other power-hungry industries have strained the aging electricity grid, the demand for smaller, fuel-efficient cogens have grown.

Office buildings in Manhattan, which sit over gas lines, were a natural market. In fact, cogens were cited by Mayor [Michael R. Bloomberg](#) in 2007 as a key component of his ambitious blueprint to reduce the city’s greenhouse gas emissions by 30 percent by 2030.

The Durst Organization, a prominent landlord in Midtown, leapt first. Its cogenerator at One Bryant Park, a glassy 54-story skyscraper rising at the corner of 42nd Street and the Avenue of the Americas, is scheduled to come online this summer. Durst expects the 4.6-megawatt cogen to power as much as 35 percent of the building during peak hours.

Last year, Related Companies removed nine parking spaces at Manhattan Plaza, a 1,689-unit complex on West 43rd Street, and installed two 350-kilowatt cogens, which it plans to turn on next month. Related, which pays for tenants’ utilities, expects to save \$350,000 a year, and recoup its costs by 2012. “There should be no impact to the tenants,” said Nick Lanzillotto, an operations manager. “They won’t even know it’s happening.”

Related also installed cogens with microturbines, smaller versions of the conventional engine, at Tribeca Green, an apartment complex in Lower Manhattan.

While [New York State](#) offers a range of incentives through its Energy Research and Development Authority (Vornado, for example received a \$2.5 million package for One Penn Plaza), the upfront cost can turn many landlords pale. Vornado’s plant at One Penn Plaza cost \$18 million.

The steep price can make even well-endowed, green-minded places like Cooper Union hesitant. Instead of footing the bill for the cogen at its new academic building in the East Village, Cooper Union hired an outside company, Office Power, to build, own and operate the generator.

Cooper Union now wants a cogen in its landmark Foundation Building. “Earlier, the board did not want to spend on something that had not been proven,” Mr. Wieman said. “But we learned that the payback made sense.”

This article has been revised to reflect the following correction:

Correction: March 3, 2009

An article on the Square Feet pages on Wednesday about several buildings in New York City that are adding cogeneration systems to create electricity and capture otherwise wasted energy included several errors.

The buildings' generators use wasted heat to produce steam to heat and cool the buildings; they do not use excess steam. (The headline also included the error.)

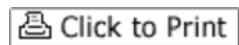
The unit of electricity that is transmitted to customers is a watt, not a volt.

The main reason that only 40 percent of electricity reaches the consumer is because much of it is lost when the electricity is generated; the losses do not come solely during the transmission and distribution of the electricity.

Natural gas in Manhattan is found in gas lines — not “rich veins” — that run beneath the city.

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PPL completes fuel cell installation at Starwood's Sheraton Parsippany Hotel

PARSIPPANY, N.J., Oct. 15, 2003 -- A PPL Corp. subsidiary has completed the installation of a Direct FuelCell® power plant for Starwood Hotels & Resorts Worldwide Inc.

At a dedication ceremony Wednesday at the hotel, PPL's distributed generation and energy services subsidiary said it has completed the development of a 250-kilowatt fuel cell power plant at the Sheraton Parsippany Hotel in Parsippany, N.J.

The Direct Fuel Cell (DFC®) power plant, similar to the one installed at the Sheraton Edison in Edison, N.J., provides about 25 percent of the hotel's electricity and hot water. PPL will own, operate and maintain the DFC power plant.

The hotel projects in both Parsippany and Edison are part of a master agreement that PPL and Starwood signed that could eventually lead to PPL installing DFC power plants at other Starwood properties.

FuelCell Energy of Danbury, Conn., manufactured the hotel's fuel cell power plant, which uses natural gas that will be supplied by New Jersey Natural Gas. H.T. Lyons, a PPL mechanical contracting subsidiary based in Allentown, Pa., was responsible for its installation.

The New Jersey Clean Energy Program and the state of New Jersey have taken a leadership position by providing funding to encourage the use of clean and efficient energy technologies, including the fuel cells installed in Parsippany and Edison.

"PPL is proud to supply Starwood with an efficient, reliable on-site DFC power plant," said Michael E. Kroboth, president of PPL Energy Services Holdings. "Today's ceremony in Parsippany marks PPL's fourth customer installation of DFC power plants in the past six months."

PPL also has installed a fuel cell at the Coast Guard Station in Cape Cod, Mass., and has installed two fuel cells at the Zoot Enterprises business park in Bozeman, Mont.

"Until recently, fuel cell energy technology was not available commercially, and its practical use was very limited," Kroboth added. "However, fuel cells are now part of a growing range of environmentally friendly energy solutions that PPL is providing to our customers."

Fuel cells generate electricity with no combustion. They are, in effect, like large, continuously operating batteries that generate electricity as long as a source of hydrogen, such as natural gas, is supplied. Since the gas is not burned, there is no pollution commonly associated with the combustion of fossil fuels. Because hydrogen is generated directly within the fuel cell module from readily available fuels such as natural gas and wastewater treatment gas, FuelCell Energy power plants are ready today and do not require the creation of a hydrogen infrastructure.

"We are pleased to see that our first hotel application of fuel cell system technology has been brought to successful closure with the installation of both the Sheraton Parsippany and Sheraton Edison energy fuel cell units," said David King, vice president-Staff Operations, North America, for Starwood. "It has been a rewarding experience working with both PPL and FCE on this important initiative, and we look forward to working with them again on future energy fuel cell projects."

"We are delighted to be working with PPL and Starwood, leaders in their commitment to implementing innovative and reliable energy solutions," said Herbert T. Nock, senior vice president of marketing and sales for FuelCell Energy, Inc. "Recent global blackouts revealed the vulnerability of constrained electric grid infrastructures and this dedication demonstrates that our DFC power plants are clean, efficient distributed generation solutions that are commercially ready today."

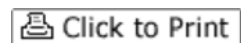
Starwood Hotels & Resorts Worldwide Inc. is a hotel and leisure company, with more than 740 properties in more than 80 countries and 105,000 employees at its owned and managed properties. With internationally renowned brands, Starwood is a fully integrated owner, operator and franchisor of hotels and resorts including St. Regis, The Luxury Collection, Sheraton, Westin, Four Points by Sheraton and W brands, as well as Starwood Vacation Ownership Inc., one of the premier developers and operators of high quality vacation interval ownership resorts.

FuelCell Energy Inc. (www.fuelcellenergy.com), is involved in the development and commercialization of high-efficiency fuel cells for electric power generation. The company is developing Direct FuelCell® technology for stationary power plants with the U.S. Department of Energy through the National Energy Technology Laboratory, whose advanced fuel cell research program is focused on developing a new generation of high-performance fuel cells that can generate clean electricity at power stations or in distributed locations near the customer, including hospitals, schools, universities and other commercial and industrial applications.

PPL Corporation, headquartered in Allentown, Pa., controls about 11,500 megawatts of generating capacity in the United States, sells energy in key U.S. markets and delivers electricity to customers in Pennsylvania, the United Kingdom and Latin America.

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