



CLEANeARTH®

Faster, smarter, greener solutions.®

CASE STUDY

Brooklyn Events Center
Brooklyn, NY

HELPING TO BUILD BROOKLYN

Clean Earth is proud to have been the exclusive provider of soil treatment, recycling, disposal, and transportation services to clean ground for the new Brooklyn Events Center located in Brooklyn, New York. With plans to open its doors in the late summer of 2012, The Brooklyn Events Center, developed by Forest City Ratner, will be a sports arena intended to serve as a new home for the New Jersey Nets, currently based at Prudential Center in Newark, NJ. The arena is being constructed partly on a platform over the Metropolitan Transportation Authority-owned Vanderbilt Yards at Atlantic Avenue. It is only a portion of a proposed \$4.9 billion sports arena, business and residential complex. This build marks the return of major league sports to Brooklyn, which has been absent since the departure of the Dodgers to Los Angeles in 1957.

PROJECT SCOPE

Clean Earth was subcontracted by Laquila Group, Inc., a family owned and operated excavation and foundation contractor in New York City, to provide all soil management, treatment, recycling, disposal, and transportation needs at the Brooklyn Events Center construction site. Due to our vast NYC experience, multiple metro convenient locations, and numerous treatment technologies, Clean Earth was able to react quickly to the immediate in-progress need, and developed a soil plan to address all of Laquila Group's project requirements and concerns.

The Brooklyn Events Center project size was massive at 165,000 tons. The scope was complex due to the vast range of waste streams which included hazardous lead soil, hazardous lead soil with UHC, elevated metals impacted material, debris, rock, brick, and historic, urban, and native fills. Laquila Group required that the soil removal and treatment be completed quickly and in a cost effective manner. Clean Earth strategically accomplished both of these goals.

OUR STRATEGY – PEOPLE, LOCATIONS, TECHNOLOGY.

As a turnkey soil recycling operation, Clean Earth understood all the complexities of this project and was prepared for all the various challenges that were encountered such as unexpected materials, harsh weather, transportation logistics, and the like.

People

With every project, Clean Earth recognizes that clear communication and knowledgeable personnel are critical for a successful project. Clean Earth developed a strong project team for the Brooklyn Events Center project. Our team included a dedicated Clean Earth Project Manager whom was responsible for the overall communication and all internal and external moving parts of this project between Clean Earth and Laquila Group.

Critical to the success of this project was the Clean Earth Approvals Team whom were responsible for matching various materials generated through the course of this project with the proper treatment, recycling or disposal facility. The approvals team generated an extremely sophisticated three dimensional tracking map and grid approvals plan to properly dispose or



WASTE STREAMS

Historic, Native, and Urban Fill
Hazardous Lead Soil
Hazardous Lead Soil with UHC
Elevated Metals Impacted Material
Rock, Brick, and Debris

recycle the large volume of contaminated soils and various materials found onsite. This team also provided all of the required approval and compliance reviews while interfacing with the project owners' consultants and engineers to ensure regulatory compliance. The Clean Earth Approvals Team's in-depth knowledge of New Jersey and New York regulations ensured a quick and seamless approval process for our customer.

Clean Earth Facility General Managers were also closely involved in this project. GMs were responsible for adhering to and tracking the arrival of assigned grids, corresponding approvals, proper treatment and reuse.

In addition, Clean Earth dedicated a Field Manager to our customer for the duration of the project. The Field Manager was at the job site on a daily basis and was responsible for direct interface with the customer onsite and the coordination of all logistics from the construction site to our facilities on a real-time basis. The Field Manager interacted daily with the Project Manager and Approvals Team to ensure soil continued moving to Clean Earth facilities in a timely manner while adhering to all the applicable regulatory requirements. This position gave Clean Earth an advantage to adjust quickly and make informed, fast decisions to onsite changes due to weather, equipment failures, and other project delays. This onsite assistance allowed Clean Earth to maintain the aggressive removal schedule and communicate all details to the team in a timely manner.

Locations

Clean Earth facilities, beneficial use sites, and strong business relationships played key roles in meeting the goals of our customer. Clean Earth had the ability to combine various locations, technologies, capacities, and other industry experts to develop the ultimate seamless soil plan.

Clean Earth's internal and external distribution centers for the Brooklyn Events Center project included:

Clean Earth of North Jersey
Clean Earth of Carteret
DuPont Grasselli Point Beneficial Use Site
Teterboro Landing Redevelopment Site
ILR - Middlesex Logistics Center Redevelopment Site
Meadowlands Redevelopment Site
ISP
Tully/Erock

On any given day during this project, Clean Earth would have one to all facilities in motion receiving material from this construction site. Having the capacity, the manpower, and technologies available were all key factors to our success.



CLEAN FACTS

Customer
Laquila Group, Inc.

Project Location
Brooklyn, NY

Total Tons
165,000

Total Tons Recycled
150,000

Estimated Project Value
\$2,120,000

Technology

There are various solutions to properly dispose or recycle contaminated soils, however the types and level of contamination impact the type of treatment process or disposal required, as well as the production scale. Clean Earth of North Jersey, a RCRA Part B Transfer, Storage, and Disposal Facility (TSDF), handles hazardous and non-hazardous materials, as well as industrial waste streams. This facility's permitted capabilities and technology allowed us to handle a portion of the material at the Brooklyn Events Center construction site that required stabilization for RCRA hazardous metals contamination. Stabilization at CENJ is achieved utilizing a Pozzolonic Stabilization process. The site material with little to no contamination was beneficially reused at various former landfill locations as closure cap/cover material.

PROJECT CHALLENGES

On most any construction site there will be challenges. Clean Earth met the challenges at the Brooklyn Events Center head on. For every project, our in-house expertise and multiple locations allows our team to develop soil management plans that work within our customers' budgets, timelines, and for the environment.

Unexpected Materials, Planning, and Production

Clean Earth took the challenges head on at the Brooklyn Events Center. The first challenge was the discovery of large amounts of unexpected debris, rock, and elevated metals impacted material. Clean Earth quickly addressed this issue and worked with the customer to identify and obtain approval for outside disposal resources available immediately and within budget to properly handle and dispose of the material that Clean Earth simply could not recycle such as the debris.

Clean Earth also addressed the elevated metals impacted material and assisted in the identification of the source and economical disposal solutions. Once elevated inorganics were identified in the soil, Clean Earth faced the challenge of how to properly handle and dispose of any additional unexpected material that may turn up throughout the project. Clean Earth developed various scenarios of other materials that may be found on the

site, not within the original map and grid approvals plan. After intense analysis of data, pricing, and available outlets, Clean Earth developed a secondary plan with the criteria that any and all options had to fall within the previously agreed upon pricing, terms and conditions. Using in-house experts, having reliable outlets with the capacity necessary, and working outside of the box were all important factors that made this plan work, and a win for our customer.

Taking all of the above challenges into consideration, production quickly became an ever-changing schedule. At full speed, Clean Earth was committed to removing 90 plus loads of soil a day from the Brooklyn Events Center construction site over several months. By immediately addressing the previous challenges with in-house expertise analyzing and pre-planning for the inevitable, our production remained steady and pleasing to our customer.

Project Time Management & Logistics

Clean Earth efficiently addressed daily soil issues with a strong soil management plan developed by our industry experts. As unexpected weather or other onsite issues arose, Clean Earth was prepared for on the spot changes. Clean Earth's Project Manager and Field Manager worked closely with the customers' engineers and consultants. All parties maintained a master facility approval list that allowed our customer and their consultants to identify all the available treatment, recycling or disposal options available to them for any signal grid at the project site for the duration of the project.

Immediate, detailed communication to Clean Earth facilities and transportation department was critical particularly during unexpected changes. Clean Earth facilities prepared for additional or unexpected loads for the day, transportation was ready for immediate increases, decreases, or re-routing and approval confirmations were managed daily in order to make these quick changes transition seamlessly.

VALUE ADDED

Clean Earth dedicated 110% of our resources to successfully complete the Brooklyn Events Center project on-time and within budget. A combination of our people, locations, technologies, experience, and industry relationships equaled Value Added.

VALUE ADDED

- Turnkey Soil Treatment & Recycling Service.
- Beneficially re-used 150,000 tons among four (4) Beneficial Use Sites.
- RCRA Part B Transfer, Storage, Disposal Facility in Kearny, NJ.
- Dedicated Clean Earth Project Team.
- Onsite Field Manager provided daily soil management and logistics coordination.
- Developed detailed Map and Grid Plans.
- Developed and implemented a Master Approval List to keep timely soil removal and transportation.
- Provided the maximum number of outlets per grid to determine the most cost effective solutions.
- Detailed and timely project forecasts and timetables.
- Environmental Consulting and Assistance.
- In-house expertise with elevated metals impacted soils.
- Minority requirement assistance thru third party.

CORPORATE

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Learn More at www.cleanearthinc.com