

## PROJECT OVERVIEW REPORT

1. UTC Identifying Number  
69A3551847102
2. Center Identifying Number  
CAIT-UTC-REG60
3. Project Title  
Low-Carbon Concrete Pilot Program
4. Principal Investigator & Contact Information  
Reza Moini, Ph.D.  
Assistant Professor  
Princeton University  
Civil and Environmental Engineering Department  
E324 Engineering Quad  
Princeton, NJ 08544
5. Rutgers/CAIT Project Manager  
Patrick Szary, Ph.D.
6. Customer Principal  
Joshua DeFlorio, Chief, Resilience & Sustainability  
The Port Authority of NY & NJ  
4 World Trade Center, 150 Greenwich Street, 19th Floor  
New York, NY 10007
7. Project Description  
Concrete is responsible for about 8.6% of the world's CO<sub>2</sub> emissions, despite the production of concrete having a relatively low carbon intensity compared to other building materials. The excessive release of CO<sub>2</sub> from concrete is due to the vast quantities of the material produced each year. The goal of the proposed work is to provide the Port Authority with the ability to significantly reduce the embodied carbon of the concrete mixtures used in their construction activities. This will support agency wide GHG reduction target of 80% by 2050.
8. Implementation of Research Outcomes (or why not implemented)  
The intended outcome of the project is to provide concrete mixtures that can significantly decrease embodied carbon in Port Authority concrete placements. Additionally, the work will improve other areas of sustainability by working to close materials loops in the local region for waste glass and demolition waste. This study will also result in significant research progress in the comparison and

development of LECC systems that will benefit the construction community at large.

9. Impacts/Benefits of Implementation (actual, not anticipated)  
To Be Determined

10. Dates and Budget

Start date: 5/1/2021

End date: 3/31/2023

UTC (CAIT) Dollars: \$50,000

Cost Sharing: \$50,000

Total Dollars: \$100,000

11. Keywords

Concrete, low-carbon concrete, aggregate optimization, performance

12. Web Links (Reports and Project Website)

<https://cait.rutgers.edu/research/low-carbon-concrete-pilot-program/>