

February 21, 2022

Draft EIS and GPP as presented by Empire State Development Corp.
Empire Station Complex Civic and Land Use Improvement Project
Chapter 16 Greenhouse Gas Emissions

<http://eis.ny.gov/penn-station-area>

Public Comment respectfully submitted by:

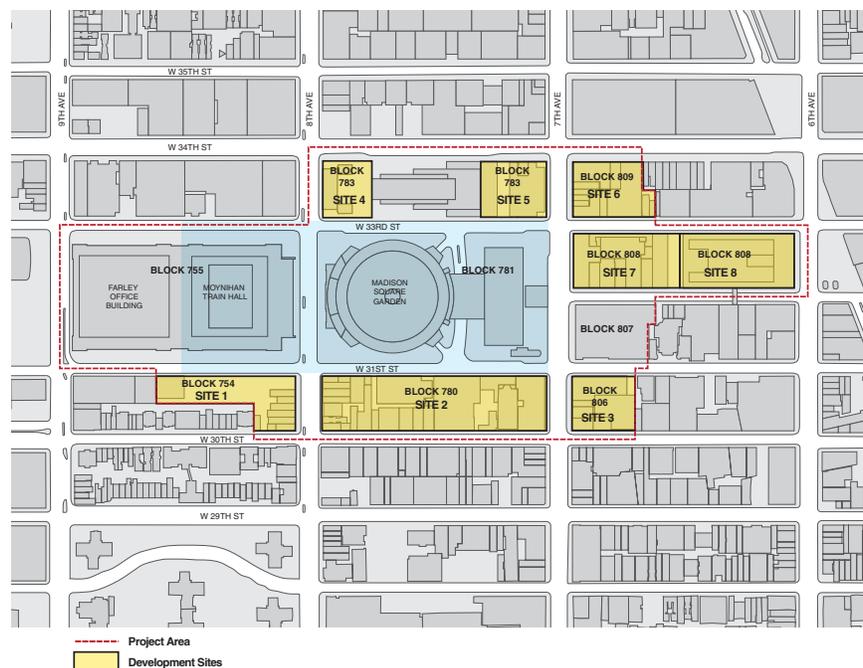
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The authors limit their comments to Chapter 16, related to Embodied Carbon impacts in the Draft EIS.

Chapter 16 proposes the strategy and evaluates the greenhouse gas (GHG) emissions generated by the construction and operation of the Proposed Project's General Project Plan (GPP). To facilitate the GPP to build new high-rise towers, several city blocks, 8 (eight) sites that incorporate 43 (forty-three) existing buildings of varying sizes in the precinct are identified for demolition. Many of these buildings projected for demolition are of landmark quality architecture, and some of them are already on the National and NY State Historic Register.



Embodied Carbon is the CO₂e released during building construction, modification, and demolition, including extracting, transporting, and manufacturing materials. By far, the lion's share of Embodied Carbon associated with any building is the carbon emitted before a building is occupied. In the next 10 (ten) years, Embodied Carbon will be responsible for 74% of all CO₂ emissions from new buildings constructed during that period. In existing buildings, the Embodied Carbon has been there from when the buildings were built. It follows that the longer the life of the building, the smaller is the proportion of its lifetime emissions due to Embodied Carbon. Existing buildings are carbon sinks whose effective emissions reduction increases with age. If we have any chance of keeping the global temperature rise to the 1.5-degree, we can no longer afford the expenditure of the amortized Embodied Carbon. We need to consider prolonging the life of existing buildings as much as possible by saving, reusing, and adding to them rather than demolishing them.

As defined in the DEIS Chapter 16, Embodied Carbon refers to greenhouse gases generated during building materials' extraction, manufacture, transportation, construction, and disposal. The total GHG contributed to the environment from the new high-rise towers in the GPP includes the Embodied Carbon from the construction materials, construction operations, and vehicular movement.

The DEIS does not account for the Embodied Carbon in the existing buildings, or the carbon generated by the operation of demolition activity, use of equipment and vehicles, and removal of the debris from the 43 buildings.

The EIS must include accounting and impact on the environment from the loss of the Embodied Carbon in the existing structures.



Working with the AIANY Historic Buildings Committee members, the authors prepared this back-of-the-envelope calculation of the Embodied Carbon within the existing 43 buildings missing in the DEIS. Using OASIS NYC, we measured areas of all the sites 1-8. Some buildings had to be approximated, as OASIS didn't have the information. The total area of the 43 existing buildings slated for demolition comes to 4,836,058 Square Feet OR 449,284 Square Meters. Using the benchmark values from research by the Carbon Leadership Forum, the authors opted to average the values from the two columns (Other and Public Assembly). Multiplying the building area 449,284 sq. meter with the Initial Embodied Carbon 405 kg.CO₂e/sq. meter = 181,960,020 kg.CO₂e or about 200,000 metric tons CO₂e.

This calculation does not include carbon emissions from the process and equipment used in demolition. In addition, the emissions of the mobile source in the removal of the debris are also not calculated. Empire State Development Corporation is requested to include embodied carbon emissions calculations in the final EIS.

The DEIS, while claiming to comply with the NY State and NY City regulations, did not address NY City's The New Carbon Challenge, September 22, 2021:

Major Expansion to Achieve Building Carbon Neutrality by 2030, the new program expansion will recognize and support leaders in the private, institutional, and non-profit sectors in their commitment to decarbonize select buildings within their portfolio by 2030.

In response to New York City's challenge: REBNY President James Whelan, *"As the challenges posed by climate change become more urgent by the day, members of the real estate industry are continuing to lead the way with innovative approaches to sustainable development and emissions reduction," said **REBNY President James Whelan**. "REBNY and its members remain committed to working with City officials on the Carbon Challenge and other critical efforts to achieve our shared goals of addressing climate change and creating a more sustainable city for all."*

IN ADVOCACY FOR PRESERVATION AND ADAPTIVE RE-USE

The Greenest Building, from The National Trust for Historic Preservation Green Lab

"It is often assumed that CO2 reduction benefits gained by a new, energy-efficient building outweigh any negative climate change impacts associated with the construction of buildings. However, it takes 10-80 years for a new building that is 30% more efficient than an average-performing existing building to overcome, through efficient operations, the negative climate change impacts related to the construction process."

Building Preservation = Planet Preservation:

As we grapple with the outside role that Building Embodied Carbon plays in Climate Change, it's becoming clear that one of the most effective changes we could make for an immediate and drastic reduction of carbon emissions is to stop building new buildings. If saving and reusing buildings becomes the first or only option, Historic Preservation philosophy and practice will move from the edge to the center of construction policy."

New York State and New York City Environmental Claims

To address the severely climate-challenged moment, the authors believe that a Whole Building Lifecycle Assessment (WBLCA) should precede every large construction project, whether saving and modifying or demolishing, or building new, only a holistic analysis can allow us to understand whether we are adding GHG to the air or reducing it. Many of the buildings slated for destruction in the GPP are a century old. Both logic and science tell us that the current plan is a reckless waste, based on a mindset that has refused to admit the reality of the present climate concerns or takes responsibility for the tremendous, unnecessary carbon emissions this project would entail. Finally, when the staggering size of the near-term emissions of the proposed demolition and new construction are considered, it is hard to imagine any plausible justification, given the sound condition of most or all the existing building stock and the plethora of other options available. **Therefore, the EIS should**

not only include a careful accounting of the Embodied Carbon value of both the existing and the proposed new construction but should put this value before all other impacts. Not doing this makes a lie out of New York State's and New York City's claims to prioritize carbon neutrality and climate change in buildings and construction policy.

Thank you.