
Case Study for Climate Resilient Investing

Waterfront and Coastal Resilience

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Introductions

Global Adaptation and Resilience Investment Group (GARI)

The Global Adaptation and Resilience Investment Working Group ([GARI](#)) is a private sector, private investor-led initiative that was announced at Paris COP21 in conjunction with the UN Secretary General's Climate Resilience Initiative. The working group brings together private and public sector investors, bankers, lenders and other stakeholders to discuss critical issues at the intersection of climate adaptation and resilience and investment with the objective of helping to assess, mobilize and catalyze action and investment. GARI aims to provide education, research and resources to build awareness and capacity in the private sector towards the mission of catalyzing investment in resilience.

Waterfront Alliance & WEDG® (Waterfront Edge Design Guidelines)

[Waterfront Alliance](#) is a 501 (c)(3) not-for-profit organization inspiring and effecting resilient, revitalized and accessible coastlines for all communities. Over the next 30 years, annualized structural damage costs for flooding will exceed \$1 billion in Miami, \$582 million in New York City, and \$331 million in Boston.¹ One of Waterfront Alliance's core initiatives is the WEDG® ([Waterfront Edge Design Guidelines](#)) standard which is a national rating system and set of guidelines developed to create resilient, ecological, and accessible assets along the water's edge.

WEDG utilizes six categories of evaluation to new development projects across disciplines that drill into the design, life cycle, and operating environment of a select waterfront asset. The asset can be public or privately owned by a real asset owner or investor looking to use WEDG Verification as part of a climate resilient investing strategy where financial and non-financial returns are embedded in the investment objectives.

WEDG verification is composed of site assessment & planning, responsible siting & coastal risk reduction, community access & connections, ecological resilience, natural resource usage & balance, and innovation which when combined holistically incentivize an asset to build beyond code and operate with an enhanced investment return profile including resilience-based benefits such as capital preservation, expected cost mitigation, and revenue stability support. To qualify for WEDG Verification projects are assessed by a team of independent technical experts for adherence to a set of key performance indicators that can be measured in environmental and social, as well as financial and non-financial terms.

WEDG® Verified Domino Park in Brooklyn, New York



Image Courtesy SHoP Architects

Domino Sugar Factory was once an 11-acre fixed asset situated on the East River in the Williamsburg neighborhood of Brooklyn, New York. The refinery’s operations historically formed a centralizing point of economic activity for the community until asset retirement in 2004. At its peak, it was the largest sugar refinery in the United States operating nearly 24/7 and employing more than 5,000 workers. Raw sugar would come by boat, fill storage, and cycle through a refining process connecting local production to domestic and international trade lines via freighting and shipping. Industrial activity and maritime transport constituted a significant portion of the East River waterfront’s economic activity, which yielded a suite of environmental, social and financial impacts, dependencies and returns for decades.

When this economic activity ceased as part of a broader deindustrialization trend, the waterfront assets sat vacant without economic value or network benefit to their community. The entire Domino site was re-zoned in 2010 to allow for a large-scale residential development which at first proved contentious with neighboring communities and never progressed. In 2012, the developer sold the site to Two Trees Management Company, which advanced from planning to design for the site in 2013. The new developer engaged more than 1,000 stakeholders over the course of four large, public community forums and a host of other engagement methods.

¹ Various Authors, First Street Foundation & ARUP. *The Fourth National Risk Assessment: Climbing Commercial Closures*. Dec. 2021, <https://assets.firststreet.org/uploads/2021/11/The-4th-National-Risk-Assessment-Climbing-Commercial-Closures.pdf>. PowerPoint Presentation.

The centerpiece of Two Trees' large-scale residential development is the WEDG Verified five-acre Domino Park. The park enhances public access to the waterfront while implementing climate resilient strategies that integrate climate adaptation across various functional vantages such as fixed asset planning, design, construction, operations, and maintenance. The park, which is elevated beyond City of New York building code requirements, acts as a protective barrier to the rest of the Two Trees development. The five-block-long waterfront edge replaced the dilapidated, existing bulkhead which was raised to support a world-class waterfront park built with storm-resistant materials and high-performance, adapted landscapes featuring large areas of native, natural, and resilient vegetation.

Two Trees chose to pursue WEDG Verification following stakeholder engagement, in part to capitalize on the benefits that would come with climate resilience investing. The rigorous WEDG standards ensured that the new development would be built more resilient than city building code required, that long-term risk reduction and adaptive maintenance would be at the forefront of the design process, and that the site would prioritize high-caliber public access, helping to make the site the beloved destination it is today. The adherence to strict standards on resilience, ecology, and access helped mitigate and directly address community concerns over the project and its future impact on the community.

WEDG Returns for Climate Resilient Investors

In the investment case of Domino Park, the total assets of the site offered the investor a larger financial value when rezoned and redeveloped. From a sustainability perspective, all the buildings at the site are LEED-certified where adaptive re-use of large parts of the sugar factory site itself constituted a significant upcycling or re-purposing of materials stock into reusable materials flow and new capital stock.

If project developers choose to pursue WEDG Verification, they will actively consider the investment objectives of an asset owner when assessing the financial and non-financial cost, benefit, risk, and return profiles of greenfield assets.

To begin with costs, WEDG Verification is a de minimis charge as compared to the capital and operating budgets for most scales of residential or commercial development. The larger expenses to the asset owner or project developer are the initial investment and then attainment of the WEDG credits through actual design and construction features that collectively contribute to the site's composite WEDG® rating. Properties across the U.S. exposed to sea level rise sell at a seven percent

discount compared to similar properties with less exposure.² WEDG therefore offers a natural capital preservation strategy to maintain the long-term value of the asset, which benefits not only the owner but also those who derive income, insurance, and other secured financial benefits.

Beyond preserving capital, WEDG yields direct future cost savings as WEDG credits align closely with FEMA Floodproofing Certificate requirements, which offer a 50 percent premium reduction on flood insurance for commercial structures. As insurance coverage becomes more challenging for non-adapted assets, WEDG compliance with building codes and science-informed enhancements leads to a more cost-efficient, future-proofed financial condition if one were to net present value the insurance premia savings as well as measure the larger impact of securing continuous annual insurance coverage for the asset. Once constructed and operational, designing beyond code for resilience offers a 4:1 benefit-cost ratio and 6:1 for resilience against storm surge³ on a continuous basis for the new, often improved useful life of a waterfront asset. Higher cost control and resilience prevents revenue disruption and adverse impacts on valuation, which will benefit the longer-term activity of the waterfront asset.

Further Implications for Climate Resilient Investing using WEDG® Verification

Although the larger overall project is still in construction, the completed park could be further studied and assessed for how climate resilient investments made at inception support the overall profitability of the total site including the value of the residential towers. Traditional valuation approaches might include valuing the park as a separate value driver from the residential or commercial structures.

For example, given that the quality of nearby parks has a significant increase on property value,⁴ leasing rates and sales in the residential and office towers could be compared to other sites without a WEDG Verified park in close proximity. Less conventional measurement approaches might include performance attribution where the park drives financial performance in direct terms (i.e., values to the asset owner) and indirect terms (i.e., values to the proximal community by way of revenue generation, collateral value stability, and job creation). Non-financial terms could include natural capital returns measured in carbon, water, and land-use metrics that are relevant for ecosystem

² Hudson, Jem E. "The Rise of ESG in Real Estate: Why ESG Matters in Real Estate Investing and How to Get Started." State Street: Center for Applied Research. 2019. 26 Sept. 2022.

<https://www.statestreet.com/content/dam/statestreet/documents/Articles/TheRiseofESGinRealEstate.pdf>.

³ Multi-Hazard Mitigation Council (2019.). Natural Hazard Mitigation Saves: 2019 Report. Principal Investigator Porter, K.; Co-Principal Investigators Dash, N., Huyck, C., Santos, J., Scawthorn, C.; Investigators: Eguchi, M., Eguchi, R., Ghosh., S., Isteita, M., Mickey, K., Rashed, T., Reeder, A.; Schneider, P.; and Yuan, J., Directors, MMC. Investigator Intern: Cohen-Porter, A. National Institute of Building Sciences. Washington, DC. www.nibs.org

⁴ Various Authors, Trust for Public Land. *The Economic Benefits of Parks in New York*. Mar. 2022, https://arch.umd.edu/sites/default/files/docs/030822_Economic%20Benefits%20NYC_FinalE.pdf.

services and potential dollar-based participation in emerging climate mitigation and adaptation markets and solutions.

Until greater standards and credentials are developed for climate resilient investing, the return profile when using WEDG Verification indicates potential for capital preservation and upside in both financial and non-financial terms. WEDG Verified assets are resilient, ecologically healthy, and accessible waterfronts designed to hold value better than property, plants, and equipment that have not been adapted against similar physical and transition climate-related risks. When projects are larger scale, they provide a networking or indirect effect of delivering environmental, social and financial co-benefits to a larger geo-spatial portfolio of fixed assets.

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⁵ Multi-Hazard Mitigation Council (2019.). Natural Hazard Mitigation Saves: 2019 Report. Principal Investigator Porter, K.; Co-Principal Investigators Dash, N., Huyck, C., Santos, J., Scawthorn, C.; Investigators: Eguchi, M., Eguchi, R., Ghosh., S., Isteita, M., Mickey, K., Rashed, T., Reeder, A.; Schneider, P.; and Yuan, J., Directors, MMC. Investigator Intern: Cohen-Porter, A. National Institute of Building Sciences. Washington, DC. www.nibs.org