



# Bridgeport, CT

## The Framework of (un?)Successful Design

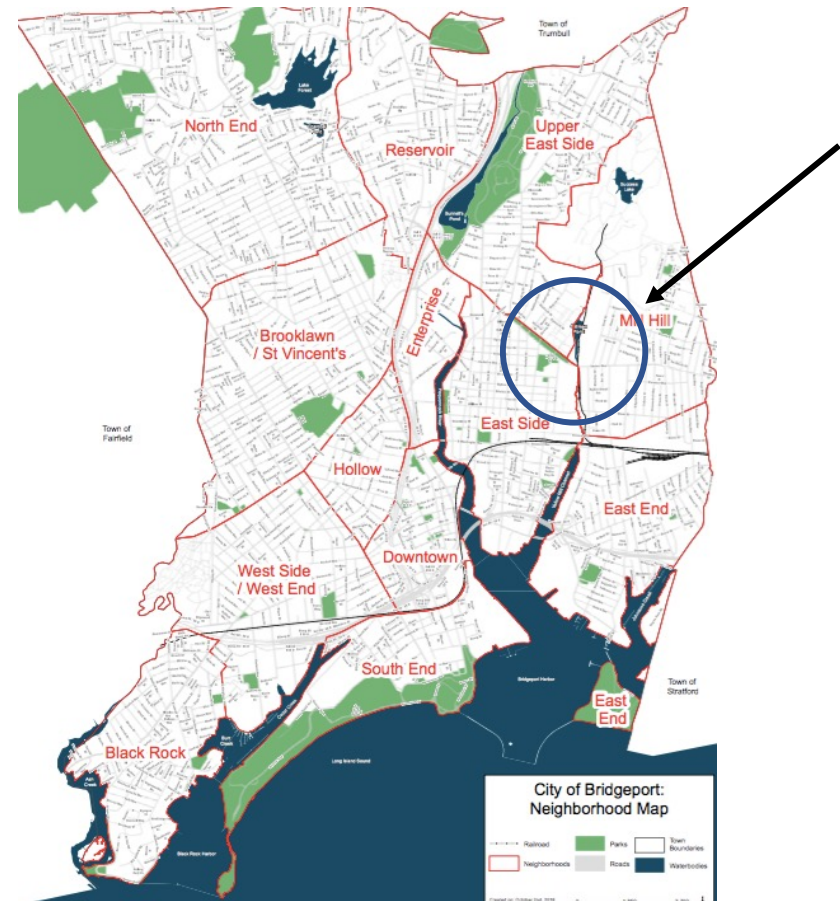
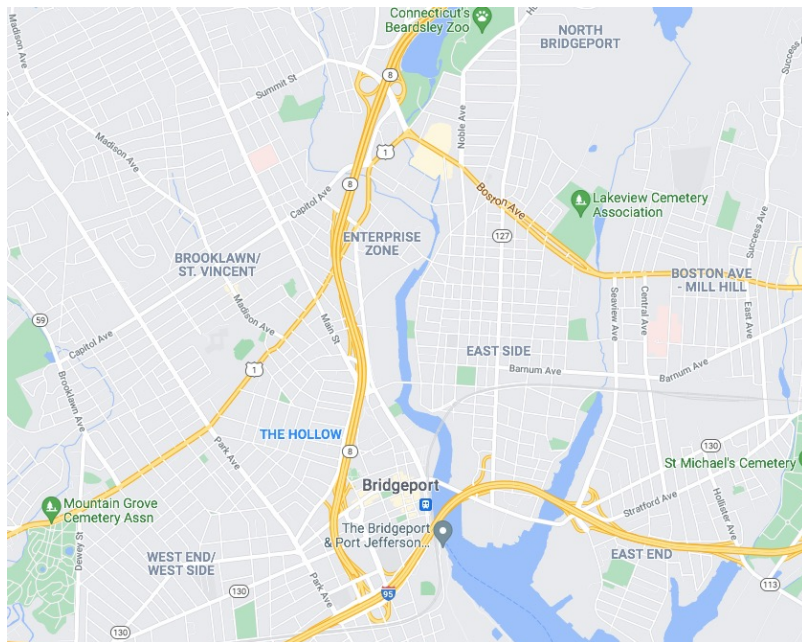
Karen Merritt, PhD MPH



# Bridgeport, CT



# Neighborhood Map







The old East Siders would say, the Czar built that factory.....

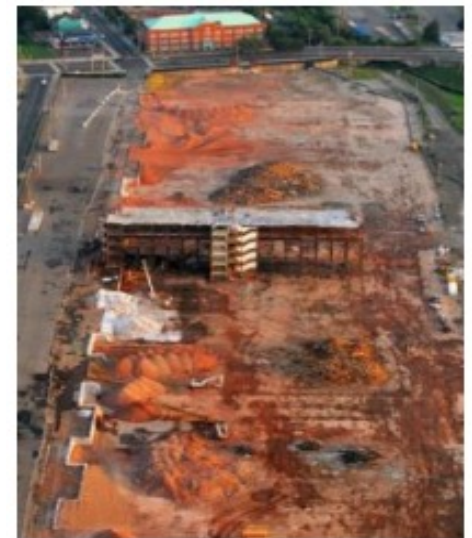


WORKS OF THE UNION METALLIC CARTRIDGE COMPANY, BRIDGEPORT



## East Side Bridgeport

A Cityscape Made by the Great War



# History of the Site

- Initial site construction in 1915 – Remington Arms – WWI munitions
- General Electric (GE) purchased the site in 1920
- Work force during WWI – 20,000; during WWII – 12,000
- 1.5 M ft<sup>2</sup> building; 5 stories; structured to withstand bomb attack
- GE manufacturing at the facility from 1920 – 2008
- Site is ~ 77 acres and included a factory; paved lots; a power station; and a watercourse that included a 7-acre lake (Stillman Pond) and a low-head dam at the site boundary.

# History of the Site (continued)

- GE facility closed in 2008
- Site assessment conducted 2007 – 2012
  - PCBs, SVOCs, VOCs, PAHs and metals
  - Ecological and human health risks
  - Evaluation of remedial alternatives
- Demolition of the facility 2011 – 2013
- Remediation and Site Redevelopment 2013 - 2018



# Remediation | Redevelopment

- Conducted and completed following CT Site Characterization Guidance
- Full assessment of potential re-use of site materials (ex: crushed brick or concrete masonry as clean fill; ground asphalt for sub-grade use)
- Full assessment of surface water and groundwater transport and exposure pathways for hydrocarbons, VOCs and SVOCs
- Soil evaluation w.r.t. **residential** direct exposure criteria (RDEC) requiring *inaccessibility*; inaccessible defined as located below a building; 2 feet of clean fill + an asphalt cap; or 4 feet of clean fill.



Connecticut Post – June 21, 2013

NEWS // LOCAL

# Toxins aside, former GE site slated for new high school

Bridgeport: Concerns persist about building school on contaminated land





# Quotes

- *"At first blush, you may say 'Why not build away from an industrial area?' 'But we do encourage reuse of property, even if pollution is on it -- as long as the cleanup is done well.'" [CT DEEP]*
- *The GE parcel represents the best opportunity to build a quality school campus that will include a football field, track and athletic fields.*  
[Director of The Bridgeport Office of Planning and Economic Development]
- *The 800 students who go to school in the future Harding High will be safe as long as remediation is done properly.* [CT DEEP and US EPA]
- *There are many once-contaminated sites across the country that have been cleaned up and put back to use. It is done all the time* [co-director of the Brownfields Center and Environmental Law Institute in Washington, D.C.]

## Remediation and Redevelopment Specifics\*

- Concentrations of one or more contaminants in soil were in excess of the RDEC across the majority of the site and ID'd for excavation.
- Soils that exceeded the RDEC were excavated/graded.
- After placement of clean cover material, soils that previously exceeded the RDEC were inaccessible.
- Full erosion- and dust-control were implemented during demolition and construction; full HASP and RDEC documentation and compliance.
- Site plans included a carefully delineated mixture of areas paved with concrete; landscaped areas; recreational fields; and buildings.

\*Compliance achieved with respect to all defined success criteria



**SCOPE OF WORK FOR  
COMPLIANCE WITH DIRECT EXPOSURE CRITERIA**

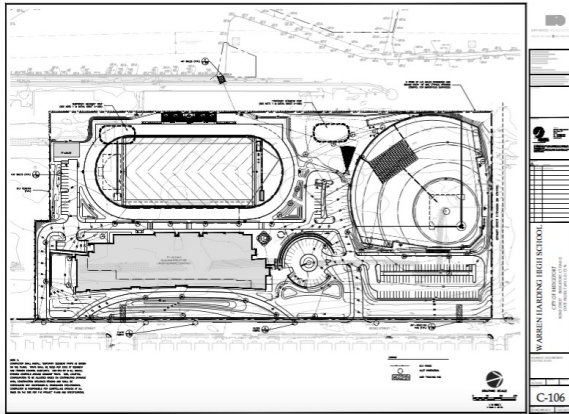
**CORRECTIVE ACTION  
STEWARDSHIP PERMIT**

**NEW HIGH SCHOOL PARCEL  
379 Bond Street  
Bridgeport, CT**

**Stewardship Permit DEEP/HWM/CS-015-029**

**June 30, 2015**

# Harding High School – Opened in 2018





## How does Bridgeport see itself?

*“Bridgeport is rebounding from a loss of jobs and population and is transitioning into a role as both a bedroom community for NYC, and as oasis of relatively low-cost housing in the otherwise prohibitively expensive Fairfield County. Located just 63 miles from NYC and accessible via a variety of transportation, it is ideally suited to families seeking a refuge from the high cost of living in lower Fairfield county.”*

# Is the outcome of this project equitable and just?

• Population	City: 150K	County: 1M	State: 3.6M
• Community			
• White:	City: 40%	County: 79%	State: 66%
• Black:	City: 35%	County: 11%	State: 10%
• Other Race:	City: 16%	County: 7%	State: 17%
• Asian:	City: 3%	County: 5%	State: 5%*
• Hispanic:	City: 33%	County: 14%	State: 17%
• Families LBPL	City: 16%	County: 6%	State: 10%
• Median \$\$:	City: \$24K	County: \$41K	State: \$38K
• Unemployment Rate	City: 10%	County: 7%	State: 8%

## East Side | Mill Hill – Harding High School

- > 90% non-White enrollment
- > 70% of students from households with incomes below city MHI



## Question the City

- How does infrastructure placement impact community health?
- How does U.S. history of redlining and restrictive covenants create disparity in where and how rebuilding occurs?
- How does land use history:
  - impact options for future construction?
  - create disparities in susceptibility to chemical exposures in soil, water or air?
  - create disparities in access to mentally and physically healthy environments?
- How does socio-cultural history constrain or appear to constrain the framework for ethical decision-making?

How can we do this differently?

# Questions

- Is this site an example of a 'success'? What does 'success' mean w.r.t. ethics?
- Project teams for this sort of work are significantly interdisciplinary within STEM. Are there underlying framework problems that aren't immediately apparent when you (me, we) only have 'STEM' hats on?
- We will only arrive at different outcomes with different decision-making frameworks. As STEM educators, how can we teach in ways that encourage students to develop understanding of socio-technical complexity?
- What is the taproot of what needs to change? We can walk this all the way back to *'the problem is capitalism and corporate ability to walk away from operational/production legacy'* - but does that walk back give us a useful lever?
- What do students need in their STEM schooling to be able to approach cases like this one with broader context? (i.e., it's not so much that students need to feel they are always equipped with answers - it's that they need to be aware of how narrowly technical problems get defined AND be aware of the need to sit with the complexity of socio-technical problems they can't easily solve)