A New Future for the Western Electric Facility

Burlington, NC SDAT Report

AIA Communities by Design

ENVISION. CREATE. SUSTAIN.

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THE SDAT PROGRAM

The Sustainable Design Assessment Team (SDAT) program focuses on the importance of developing sustainable communities through design. The mission of the SDAT program is to provide technical assistance and process expertise to help communities develop a vision and framework for a sustainable future. The SDAT program brings together multidisciplinary teams of professionals to work with community stakeholders and decision-makers in an intensive planning process. Teams are composed of volunteer professionals representing a range of disciplines, including architects, urban design professionals, economic development experts, land use attorneys, and others. Today, communities face a host of challenges to long-term planning for sustainability, including limited resources and technical capacity, ineffective public processes and poor participation. The SDAT approach is designed to address many of the common challenges communities face by producing long-term sustainability plans that are realistic and reflect each community's unique context. Key features of the SDAT approach include the following:

- **Customized Design Assistance**. The SDAT is designed as a customized approach which incorporates local realities and the unique challenges and assets of each community.

- **Systems Based Approach to Sustainability**. The SDAT applies a systems-based approach to community sustainability, examining cross-cutting issues and relationships between issues. The SDAT forms multi- disciplinary teams that combine a range of disciplines and professions in an integrated assessment and design process.

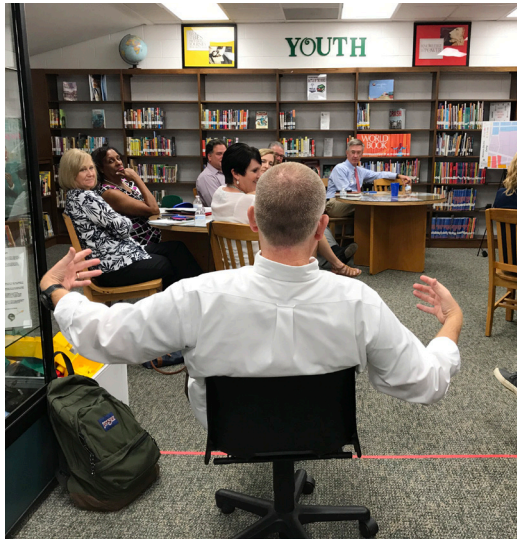
- **Inclusive and Participatory Processes**. Public participation is the foundation of good community design. The SDAT involves a wide range of stakeholders and utilizes short feedback loops, resulting in sustainable decision-making that has broad public support and ownership.

- **Objective Technical Expertise**. The SDAT Team is assembled to include a range of technical experts from across the country. Team Members do not accept payment for services in an SDAT. They serve in a volunteer capacity on behalf of the AIA and the partner community. As a result, the SDAT Team has enhanced credibility with local stakeholders and can provide unencumbered technical advice.

- **Cost Effectiveness**. By employing the SDAT approach, communities are able to take advantage of leveraged resources for their planning efforts. The AIA contributes up to $15,000 in financial assistance for each project. The SDAT team members volunteer their labor and expertise, allowing communities to gain immediate access to the combined technical knowledge of top-notch professionals from varied fields.

The SDAT program is modeled on the Regional and Urban Design Assistance Team (R/UDAT) program, one of AIA's longest-running success stories. While the R/UDAT program was developed to provide communities with specific design solutions, the SDAT program provides broad assessments to help frame future policies or design solutions in the context of sustainability and help communities plan the first steps of implementation. Through the Design Assistance Team (DAT) program, over 500 professionals from 30 disciplines have provided millions of dollars in professional pro bono services to more than 200 communities across the country. The SDAT program leverages the pivotal role of the architectural community in the creation and support of sustainable livable communities.

The following report includes a narrative account of the Burlington SDAT recommendations, with summary information concerning several principle areas of investigation. The recommendations are made within the broad framework of sustainability, and are designed to form an integrated approach to future sustainability efforts in the community.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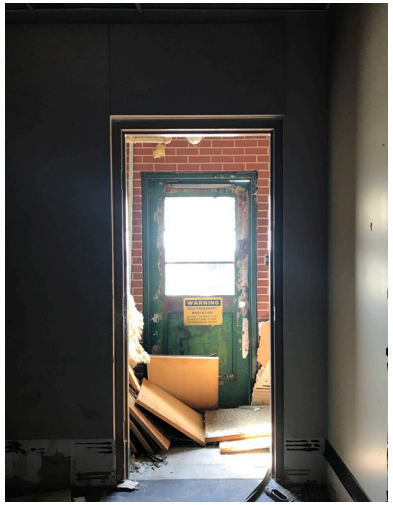
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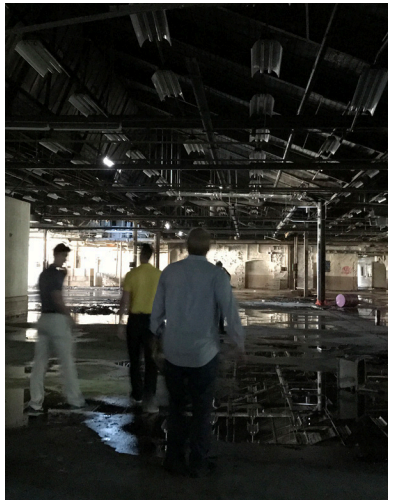


Background

OVERVIEW

The former Western Electric Facility/Tarheel Army Missile Plant is an extraordinary site, with a campus that covers a half-century of industrial innovation, while serving as a fundamental anchor in the growth of Burlington's middle class. Even after a quarter-century of disuse and disinvestment, the site still has an amazing set of 'bones' that are ripe for repurposing. One aspect of our interaction with the Burlington community that surprised us was the genuine affection that so many people have for the site, regardless of where they live in town. All too often when looking at former industrial sites, the surrounding community tends to see the site only in its current, blighted state. What our team found consistently in the case of the Western Electric Facility is a deep reservoir of affection for the complex and what it has meant to Burlington. Time and time again we heard stories from folks who may no longer live near the site but remembered visiting the site as a child because their father (or grandmother or uncle) worked there and they remembered what an anchor institution this complex was 'back in the day'.

HISTORY

There were several distinct phases of ownership, use, and development of the site.

The Textile Mill Era

Burlington developed slowly throughout the later half of the 19th century. During the twentieth century's first decades, many mills expanded factories and diversified production. The robust economy of the early 1920s encouraged textile innovation, and hosiery manufacturers experimented with alternative fibers that were less expensive and more durable than silk. In 1924, American Viscose Company president Samuel A. Salvage adopted the trade name "rayon" for a synthetic filament that had previously been known as artificial silk. In 1928, National Life Insurance Company president Albert M. Johnson of Chicago incorporated A. M. Johnson Rayon Mills, Inc., in Delaware and opened a Burlington factory. The company purchased multiple parcels outside the city limits in order to construct a spinning mill. Company records indicate that the concern expended $492,793 to acquire acreage between October 1927 and April 1929. A. M. Johnson Rayon Mills, Inc.'s vice president and research and chemical director Dr. Waldemar O. Mitscherling, whose primary business was W. Mitscherling Research Laboratories, in Bridgeport, Connecticut, guided the Burlington factory's planning and construction. The 50,000-square-foot building featured distinctive north-facing sawtooth roof monitors, which were common in the northeast United States and England but infrequently utilized in North Carolina.

A. M. Johnson Rayon Mills commenced production in 1928 with two ten-hour spinning department shifts daily. The company provided round-trip transportation for female employees residing in Burlington, Graham, and Haw River, scheduling the hour-long route to coincide with breaks between shifts. By October 1929, approximately eight hundred workers generated up to 5,000 pounds of rayon yarn each day. That month, the company announced plans to enlarge the mill's footprint by almost 90,000-square-

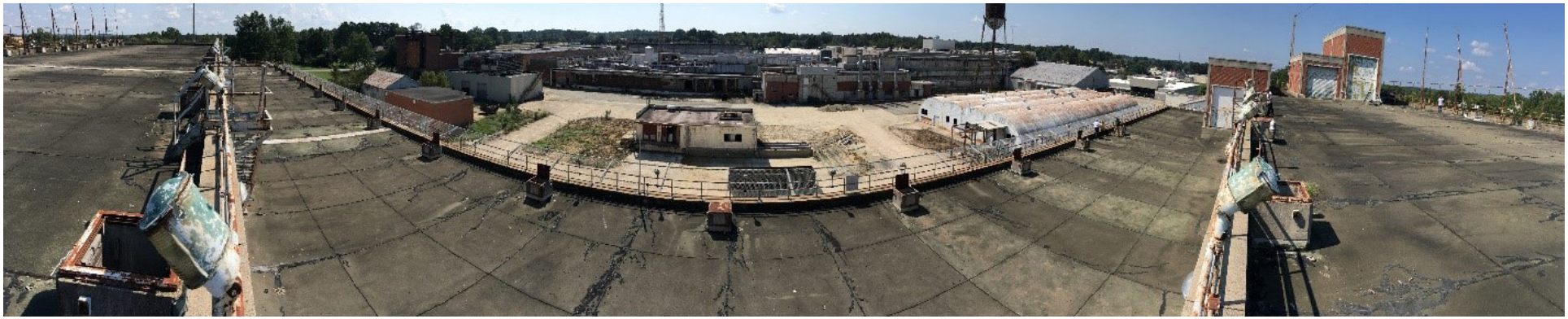


Figure 1 - The site was initially developed by the A.M. Johnson Rayon Company in 1928, when a 50,000 square foot plant was built (now known as Building No. 2).

Figure 2 - In 1930 the A.M. Johnson Rayon Company constructed a 60,000 square foot addition (now known as Building No. 3).

feet in order to double production capacity. The expansion was ill-timed due to the stock market crash and the ensuing depression that slowed the nation's economic growth. However, in early November 1929, A. M. Johnson Rayon Mills' Delaware sales office began marketing a brand of rayon yam called "Johnsonette" produced in North Carolina. Around the same time, the plant closed for several months to facilitate new construction and equipment installation. During this transition, the business reorganized and was renamed Carolina Rayon Mills, Inc. Despite increased production, the company could not surmount financial difficulties and closed the mill in 1931.

National Management Corporation of Dover, Delaware, bought the plant and 587.73 acres from Carolina Rayon Mills, Inc., in November 1931, but held it for only four years before experiencing financial difficulties themselves. The Chicago-based National Life Insurance Company purchased the property at a receivership sale in March 1935 and immediately conveyed it to Hercules Life Insurance Company, as both firms were Sears and Roebuck Company subsidiaries.

Hercules Life Insurance Company sold the mill equipment to New York-based Consolidated Products Company in 1936 and began marketing outlying acreage in 1936. That same year, truck transport operator Barnwell Brothers purchased outlying five acres upon which to erect a warehouse terminal.

In June 1938, Southern Foods, Inc., established by A. H. Hughes, Ralph H. Scott, and Dr. S. F. Scott of Burlington and Baltimore investor N. F. O'Dea, rented a portion of the plant. The company utilized cotton seed oil to produce condiments. The entrepreneurs created an associated business, Southern Distributors, Inc., in December 1938 to promote the firm's product. However, the short-lived manufacturing endeavor ceased production in 1939.

In August 1938, T. H. Knott leased approximately 100,000 square feet of the complex to function as a local and long-distance trucking terminal and warehouse. The mill also served seasonal tenants including amusement equipment companies, who stored rides on the site during the winter of 1938- 1939. Hercules Life Insurance Company conveyed much of its Burlington property to Washington National Insurance Company in March 1939. The 35,000-square-foot mill hosted Burlington's Municipal Fair in October 1939, allowing exhibitors to set up indoor booths for the first time in the event's history. Following the fair, auctioneers sold the year's tobacco crop from the building and two Burlington warehouses for almost ten weeks.

World War 2 Era

As World War II escalated, many county residents enlisted in the military, and those left behind were occupied with the war effort in a variety of ways, from filling vacant positions in local manufacturing plants to participating in bond drives and other volunteer efforts. Industrialists pursued military contracts to support the United States' participation in the war. America's goal to become "the arsenal of democracy"

benefited large corporations-more than half of the $175 billion-worth of government contracts awarded between 1940 and 1944 went to thirty-three nationally-known firms who had demonstrated their capacity to produce large quantities of quality goods-as well as small businesses, finally remedying the high unemployment rates that lingered after the economic recession of the late 1930s. Industrial jobs increased by seventy-five percent in the South over the course of World War II, with traditionally underemployed groups such as women, African Americans, and the elderly receiving invaluable education, training, and experience. Output soared after May 1943, when President Franklin D. Roosevelt established the Office of War Mobilization to coordinate a diverse array of support endeavors including manufacturing, scientific research, and agricultural production.

The former Carolina Rayon Mills complex provided valuable square footage for local and federal government undertakings during World War II. In February 1942, Washington National Insurance Company conveyed three tracts encompassing 211.26 acres of the former Carolina Rayon Mills property to the Defense Plant Corporation. The Hagerstown, Maryland-based Fairchild Engine and Airplane Corporation immediately leased it for its aircraft production division and embarked upon a renovation and expansion that doubled the mill's square footage. The renowned Detroit architecture firm Albert Kahn Associated Architects and Engineers, Inc., prepared plans for manufacturing and office building additions, a power house, and a reservoir, as well as a guard house/fire station and an airport control tower. The project also involved modifications to Huffman Field, an airstrip in close proximity to the plant, to serve as an airplane testing site.

Fairchild Engine and Airplane Corporation placed the Burlington plant into service in May 1943. Production was initially slow due to the time required to train approximately 2,350 laborers, ninety percent of whom had no prior experience with such work. However, employees fabricated 106 twin-engine, laminated-plywood AT-21 airplanes for the U. S. Air Force's aerial gunner and bombardier training program by September

Figure 3 - Huffman Field, southeast of the Fairchild Plant..

1944, when the program's funding ended. In October, Fairchild's Duramold Division became the Burlington plant's sole occupant, molding seamless fiberglass, wood, and rubber aircraft components. Duramold only occupied the site for a few months.

In December 1944, Firestone Rubber announced that it would utilize the plant to manufacture 155 mm and 90 mm guns for the United States Army. Due to the highly specialized nature of the work, company representatives estimated that a projected 1,200 to 1,500 employees would relocate to Burlington along with the necessary production equipment. Firestone also rebuilt tanks at the site. The Burlington operation was short-lived, however, as the factory closed in August 1945 when the company's military contract ended at World War II's conclusion.

After the end of the war, the General Services Administration then assumed the plant's management and contracted with Western Electric Company, Inc., to lease the complex.

Figure 4 - Subsequent to the construction of Building 3, Carolina Rayon Mills went bankrupt during the Great Depression. The site was then acquired by the Defense Plant Corporation and subsequently transferred to the Fairchild Engine and Airplane Corporation in 1943 as part of the war effort, when the largest additions to date were constructed – the 15,000 square foot Building 1 and the 95,000 Square Foot Building 4.

The Cold War Era

In February 1945, as the military continued to explore the most effective means of destroying enemy bombers, the U. S. Army Ordnance Department selected Western Electric and Bell Telephone Laboratories to develop a surface-to-air missile for that purpose.

When building materials became available at the war's end, Western Electric undertook deferred facility maintenance and expansion, and in February 1946, the company negotiated a five-year lease for the former Carolina Rayon Mills plant in Burlington, agreeing to pay $155,988 in annual rent. On March 11th, the concern began interviewing for approximately two thousand positions. Western Electric estimated that fifty percent of the new hires would be women. Over the course of the week, 2,250 applicants pursued employment. The plant commenced manufacturing radio transmitters following worker training. By November 1947, the shop also produced microphones to be used in applications ranging from safe alarms to aircraft communication systems.

Western Electric's primary North Carolina plant, which was in Winston-Salem, also began operating in 1946. The company leased the former Chatham Manufacturing Company complex on Chatham Road, and shortly after interviewing for their first nine hundred positions in April, initiated production of military communications equipment including radar and telephone components and systems. By October Western Electric employed 1,600 workers in its Winston-Salem division and had expanded into a former tobacco warehouse on Oak Street.

Western Electric' s Burlington plant increased production through the late 1940s, serving as an important catalyst in the city's post-war industrial expansion. In 1950, census takers reported Burlington's one hundred percent population increase to 24,560 residents over the course of the previous decade. The city's dramatic overall growth continued through the mid-1950s, when the Chamber of Commerce reported that the industrial workforce had multiplied by eighty percent, citywide annual payroll expenditures soared 220 percent, and building permit issuance increased 215 percent between 1946 and 1956.

The United States government augmented Western Electric's defense contracts in response to the Soviet Union's August 1949 detonation of an atomic bomb. Rearmament escalated after the Korean War began in June 1950, and Western Electric continued to develop sophisticated equipment and weapons including Nike guided missile and antiaircraft apparatus. The Burlington plant manufactured Mark XV gun components for the U.S. Navy as well as T-33 and M-33 gun components for the U.S. Army. In 1951, Western Electric erected a large metal warehouse (Building 14) to accommodate increased production.

During the subsequent year, Western Electric completed two new structures at the Burlington plant designed to provide Nike Ajax missile guidance system assembly and testing space - the 16,000 square-foot prefabricated metal Building 12 and the 50,000-square-foot, two-story-on-basement, reinforced-concrete Building 13. The structure's two-level roof features two thirty-foot-long radar-equipment-testing areas. The U.S. Army Corps of Engineers supervised the project.

Figure 5- To the southeast of the plant was a runway that ran north-northeast where the planes departed from the plant. This runway would later be converted to a dragstrip, ushering in a long tradition of drag racing in the Burlington community.

Area residents benefited from Western Electric's support of civic organizations and institutions. The company instituted a program in conjunction with Elon College whereby students attended classes in the morning and worked the full second shift. Employment numbers remained high. In July 1952, the Burlington plant's 2,500-member work force included 900 supervisors, engineers, and clerical support staff. The facility's annual output, which had averaged more than $100 million-worth of product since 1947, was expected to more than double in 1953.

In 1954, after nine years of research and development, Western Electric and Bell Telephone Laboratories perfected Nike Ajax, the U. S. Military's first guided, surface-to-air, antiaircraft missile. The twenty-one-foot-long weapon, armed with a conventional warhead, had a thirty-mile range. Douglas Aircraft Company manufactured the airframes, initially at its Santa Monica, California, factory, and then at a Charlotte, North Carolina, plant beginning in 1955. Bell Telephone Laboratories supplied the guidance systems. Engineers and scientists at the Burlington plant continued to improve antiaircraft technology, developing faster, more powerful Nike Hercules missiles and guidance systems in 1956. In order to house this endeavor, Western Electric added buildings encompassing 355,000 square feet to the Burlington complex by 1957. In February of that year, the plant's research team began work on the even more advanced Nike Zeus antiballistic missile program, overseen by Burlington-based engineer S. C. Donelly. The project soon necessitated more laboratory and testing facilities, resulting in the renovation of Building 13 and the 1959 construction of the expansive three-story Building 16.

In 1961, Western Electric's North Carolina operation employed 3,700 at the Burlington plant. This number did not include 382 Bell Telephone Laboratory employees who were in Burlington.

Western Electric continued to serve as the primary contractor for the Nike Hercules and Zeus missile programs. In 1962, the company received contracts totaling almost six million dollars to facilitate missile research, development, and production. The Burlington plant fulfilled approximately seventy percent of a $1,588,900 contract for Hercules radar and data processing components, while General Electric Company's Syracuse, New York facility supplied the remaining thirty percent, primarily perimeter acquisition radar. The Army also awarded the Burlington plant an additional $1,449,000 contract to produce guidance equipment for Nike Hercules missiles that year.

The U.S. Army Missile Command based at Redstone Arsenal in Alabama had assumed jurisdictional oversight of the Burlington complex in 1957, and in August 1963 named it Tarheel Army Missile Plant. However, as Western Electric continued to lease the property from the General Services Administration, most newspapers and other non-military sources continued to refer to the property as the Western Electric plant. The company's telecommunications equipment production increased from $13 million in 1962 to $22 million in 1963, with two thousand Burlington employees engaged in that task. Although the complex was Western Electric's sole

Figure 6 - After World War II ended, Fairchild left the site and it was taken over by the Western Electric Company as part of the United States Army's Nike Missile Program where on this site the radar components of the system were constructed. In the early 1950' s the 20,000 square foot Building 12, the 50,000 square foot Building 13, 50,000 square foot Building 14 and 15,000 square foot Building 17 were all constructed.

manufacturing location of "hands-free" speakerphones, the facility's primary task was Nike X anti-ballistic missile development. A new Department of Defense contract that year involved manufacturing underwater equipment for the U. S. Navy. By 1966, the Burlington plant also conceived, tested, and fabricated satellite guidance systems for the U. S. Air Force and the National Aeronautics and Space Administration.

In 1967, Secretary of Defense Robert S. McNamara announced plans to create a $5 billion national antiballistic missile system to counter possible Chinese and Russian missile deployment. Western Electric remained the primary contractor for Nike X, with the Burlington plant's 3,700 employees leading the research and development initiative. Workers also manufactured Sprint and Spartan missile guidance systems and electric parts and assemblies for data processors.

In 1969, $322,787 worth of improvements were made that included modifications to the paint shop (Building 7), the creation of a digital rack test area at Building 16's west end, and the installation of a deep tank in which electrical cabinets could be submerged in cleaning chemicals. The Nike X program, renamed Nike Sentinel

Figure 7 - In 1959 the 10,000 square foot Building 7 and 100,000 square foot Building 16 dramatically expanded the complex.

Figure 8 - In the 1970s, Western Electric continued to expand by constructing the 55,000 square foot Building 1A, the Main Office building facing onto Graham-Hopedale Road, the 8,000 square foot Building 22, and the 100,000 square foot AT&T building, immediately to the west of the remaining site.

when the missile entered production, soon required more square footage for research and development. In order to accommodate this, Western Electric moved administrative offices and employee service areas into a two-story, brick, 50,000-square-foot addition finished in 1970. The Savannah District Army Corps of Engineers supervised the construction of the structure designed by Asheville architects Six Associates, Inc., to house offices and a cafeteria.

The Decline

Western Electric next expanded its North Carolina operation to Guilford Center, a research and engineering complex erected on Mt. Hope Church Road near I-85. Upon the facility's 1971 completion, the company transferred approximately six hundred Western Electric and Bell Laboratories workers from Burlington to Guilford County. The Burlington plant experienced further reduction in force in October 1972, when the U. S. Army significantly reduced the scope of its Safeguard ballistic missile defense system following the strategic arms limitation treaty (SALT). Contract cancellations required immediate project cessation, resulting in temporary lay-offs for 250 workers and a projected permanent loss of an additional 150 positions.

Employment at the Burlington plant continued to decline in subsequent years, numbering 2,450 at the end of 1974 and 1,775 in December 1975. That month, Western Electric announced plans to eliminate 1,200 Burlington jobs by June 1976 and move telecommu-

Figure 9- Today, we are now left with almost 800,000 square feet of prime property ready for redevelopment to serve the needs of the Burlington community into the 21st century.

nications equipment production to its plant in Winston-Salem. However, the company continued to update the Burlington plant as needed. Winston-Salem plant employed thousands through 1988, when AT&T consolidated production in Burlington. Only four hundred employees worked at the Winston-Salem facility at the end of 1989. AT&T closed the Burlington plant in late 1991 but continued to perform routine maintenance for the General Services Administration.

Following an environmental evaluation that deemed the property environmentally suitable for transfer, the federal government deemed Tarheel Army Missile Plant surplus property. On November 29, 2004, the General Services Administration sold the plant and 22.04 acres for $1,585,000 to Hopedale Investment, LLC, of Burlington. That concern conveyed the property to Saucier, Inc., of Tallassee, Alabama on August 24, 2013.

SUSTAINABLE DESIGN

There is an inherent sustainability in repurposing older, underutilized properties by avoiding the impact of new construction. By renovating existing structures, not only is the history of the site preserved and the character of the buildings maintained, but the environmental impact of new construction is eliminated. The National Trust for Historic Preservation's Preservation Green Lab has studied this topic at some depth and has found, on average, that it takes decades to recover the energy expended to construct new buildings that are more energy efficient than existing buildings – sustainable preservation has proven time and time again to be the 'green' choice. When contemplating a future for the Tarheel Army Missile Plant, what is important to recognize is not just the economic and environmental sustainability of adaptive use and preservation, but also the social sustainability of repurposing this historic site to become a center of community and engagement once again.

Sustainable Technologies

Green roofs are a logical addition to the site as well. Many of the existing structures were designed to support heavy loads, well above the additional weight of a vegetated roof. These roofs can provide cost effective storm water management, reduce the urban heat island effect, and create habitat for creatures, such as was done at Ford Motor Company's River Rouge plant.

Rainwater capture is also a distinct possibility – one could install new large scale galvanized steel cisterns or even take advantage of the existing water tower to provide a use for one of the iconic vertical elements on the site, visible from a long distance away. Why not repurpose the water tower to capture rainwater and then water the vegetated roofs with non-potable water?

Natural daylight is also a logical design strategy to pursue, given the fact that most of the plant was designed for a low energy environment, taking advantage of natural daylight and ventilation. Looking at this historic photograph of the aircraft plant it is easy to see where all of these windows and skylights could be repaired and reopened to provide wonderful, even daylight to the area below.

Figure 10 - As early as 1980, the National Trust for Historic Preservation recognized the inherent sustainability of preservation by reducing the environmental impact of new construction.

Figure 11 - Natural daylight and ventilation strategies were employed in the design of the 1940's era aircraft manufacturing buildings.

Figure 12 - There are a lot of opportunities to place renewable energy sources like solar panels across the site; however, there is nothing to say that these efforts can't be fun, or even whimsical. Instead of just placing solar panels on all of the roofs, how about converting them into shade structures, or even pieces of art?

Figure 15 - Green Roof at Ford Motor Company's River Rouge Plant.

Figure 13 - Canopy shade structure with integrated photovoltaic cells.

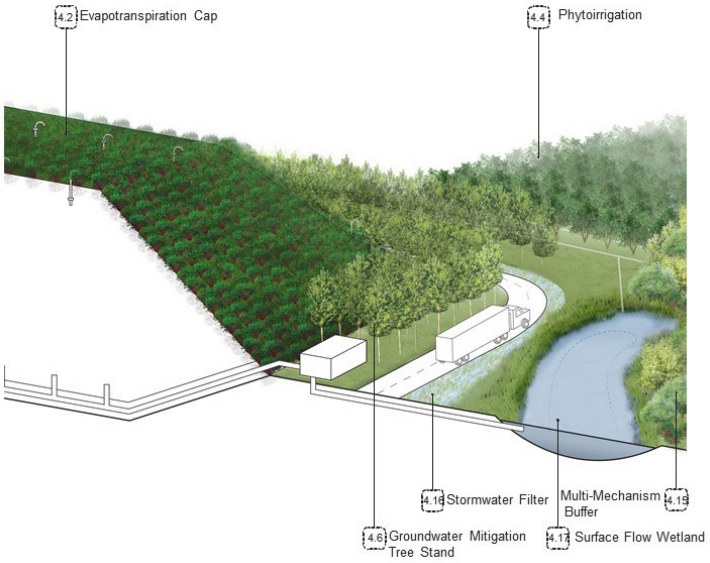


Figure 16 - Stormwater & brownfields are not incompatible if planned for.

Figure 14- Rooftop solar panels

Figure 17 - The existing water tower could be rehabilitated to provide rainwater storage for irrigating vegetated roofs, water features, & other non-potable water needs.

Social Sustainability

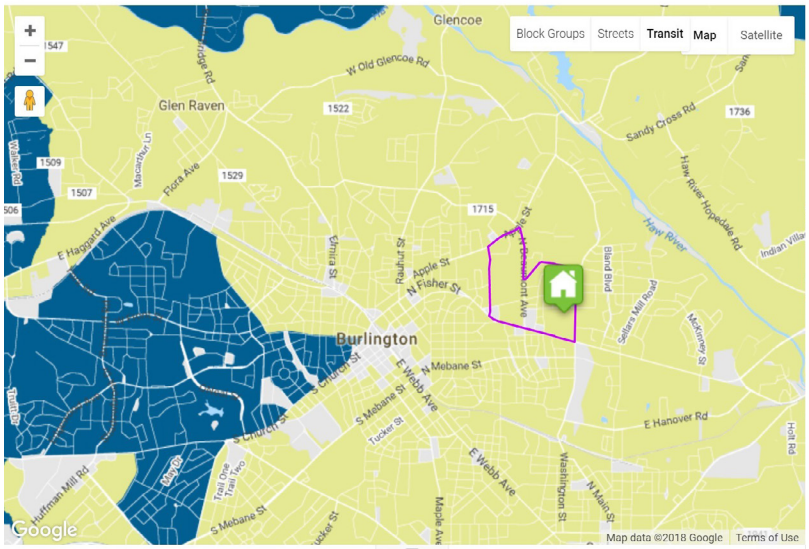
When looking at housing affordability, there are two different metrics that can be used to review affordability. The first metric says that one should not spend more than 30% of one's income on housing (rent or mortgage.) By this standard, a large swath of Burlington can be considered affordable when benchmarked against the Area Median Income (AMI). However, the second metric ndicates that one should spend less than 45% of one's income on housing and transportation costs. By this metric Burlington is much less affordable, as most folks need to drive around a lot to meet their daily needs (this implies limited walkability and poor public transportation as well as a sprawl-based development pattern). The TAMP site sits adjacent to some of the more affordable areas, and in developing a walkable community hub and connecting with the recently establish public bus lines this area could become an area that can become a good value and very affordable.

One of the other concerns about Burlington's reliance on individual automobile traffic isn't just affordability, but also the environmental impact that all of that driving can have on the community. Transportation-generated greenhouse gasses emitted per acre in the more densely developed town core are higher than the surrounding areas, but when analyzed per capita they are much lower in the central core because of the reduced need to drive so much. It is this per capita generation of greenhouse gasses that ultimately generates the total volume of emissions, and why it is so important that more walkable or public transit friendly options are developed to support the site and the broader community – saving money through reduced transportation costs and saving the environment through reduced vehicle emissions.

Another useful mapping exercise is looking at the Social Vulnerability Index of a community. The federal Centers for Disease Control (CDC) defines Social Vulnerability as "… the resilience of communities when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks." By focusing on reducing social vulnerability, a community can decrease both human suffering and economic loss. CDC's Social Vulnerability Index uses 15 U.S. census variables at tract level to help local officials identify communities that may need support in preparing for hazards; or recovering from disaster. As one can see, the TAMP site is located in a vulnerable area of the community. An effective redevelopment of the site can help strengthen the surrounding community and reduce the social vulnerability of the neighborhood.

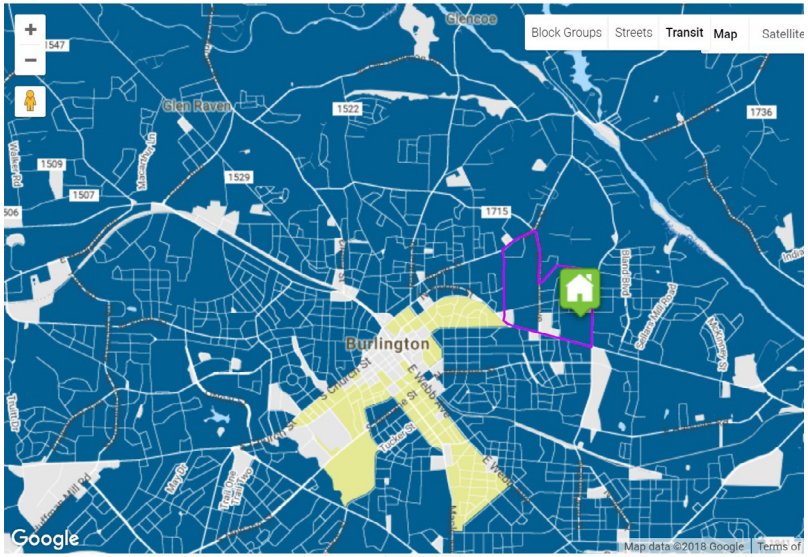
One of the pleasant surprises of our analysis was the relatively strong walkscore of the TAMP site. While there is room for improvement with a score of 58, Somewhat Walkable, this is a stronger score than one might expect in a community such as this and provides a great basis to build from. By improving pedestrian access and providing a variety of community functions on site the walkscore could be rather easily increased to a dramatically improved score.

One of the goals of any revitalization would be to rebalance the time it takes to commute between downtown and the site. On strictly a time to commute basis, single auto travel wins hands down, while pubic transit takes substantially longer than biking or even walking. If these transit times could be reduced it would make other modes of transit more appealing.



Housing Costs % Income 23%

Figure 18 - Housing costs are well below the 30% threshold identified as affordable.



Housing + Transportation Costs % Income 50%

Figure 19 - Housing and transportation costs combined are slightly higher than recommended as affordable. Adjacent to the site is one of the few areas in Burlington that qualifies as affordable when considering Housing + Transportation costs.

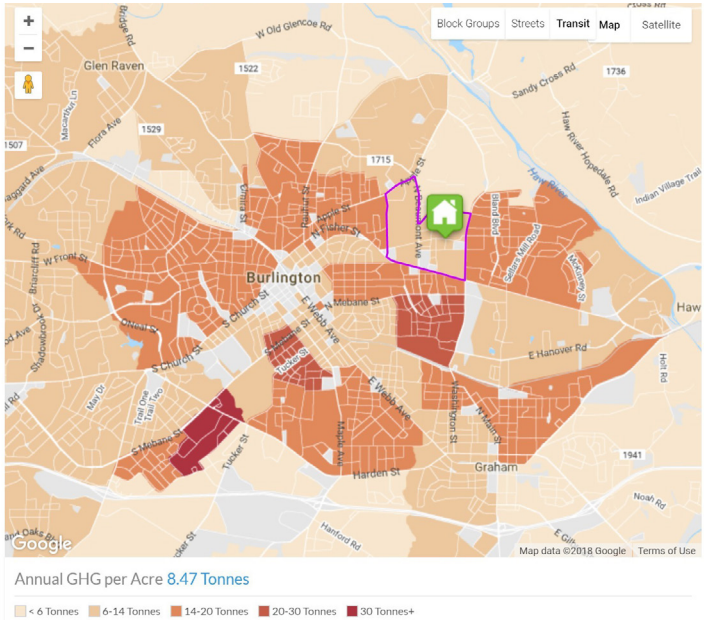


Figure 20 - Given the neighborhood's relatively low density, vehicle-sourced annual greenhouse gas emissions appear rather light.

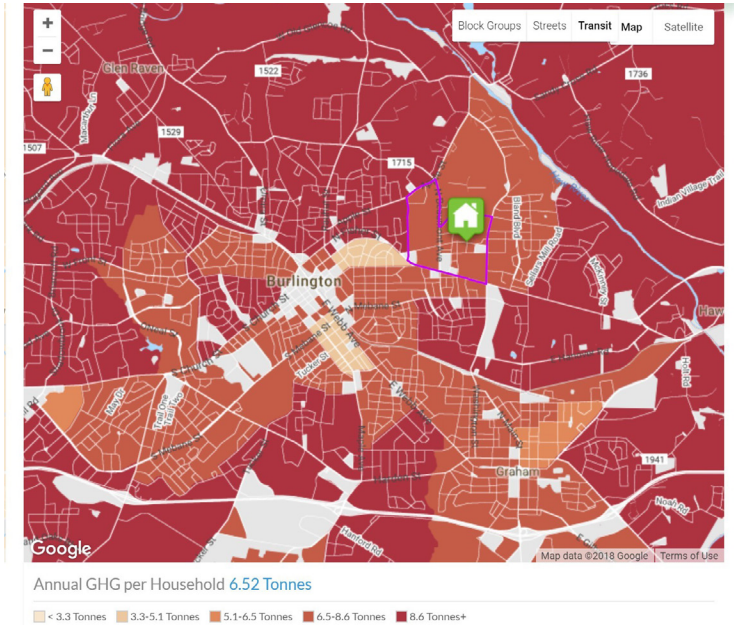


Figure 21 - When viewing vehicle-based greenhouse gas emissions are viewed on a per Household basis, the environmental impact of single-occupant vehicle transit becomes readily apparent.

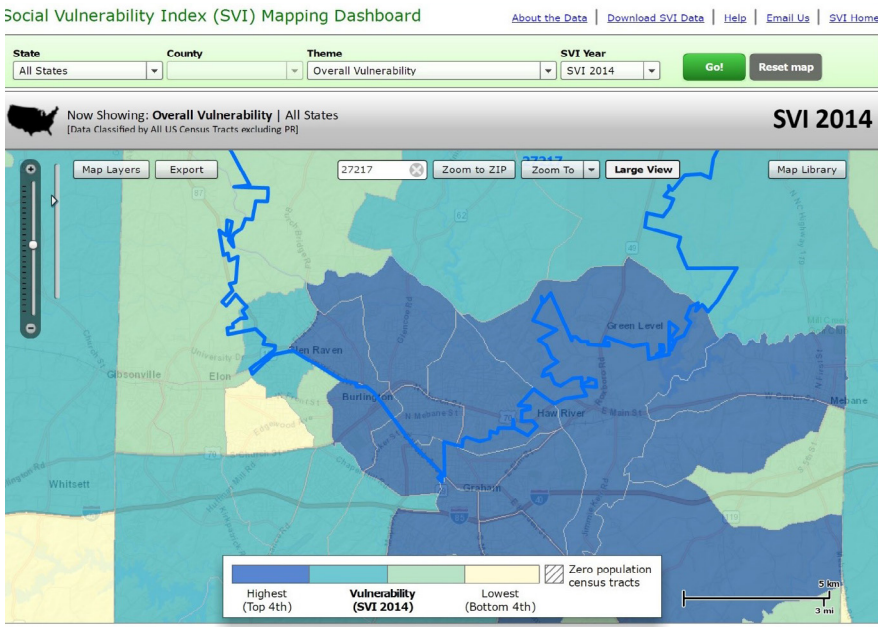


Figure 22 - While the Burlington region as a whole exhibits varying levels of vulnerability, the TAMP site ranks in the highest quartile of social vulnerability.

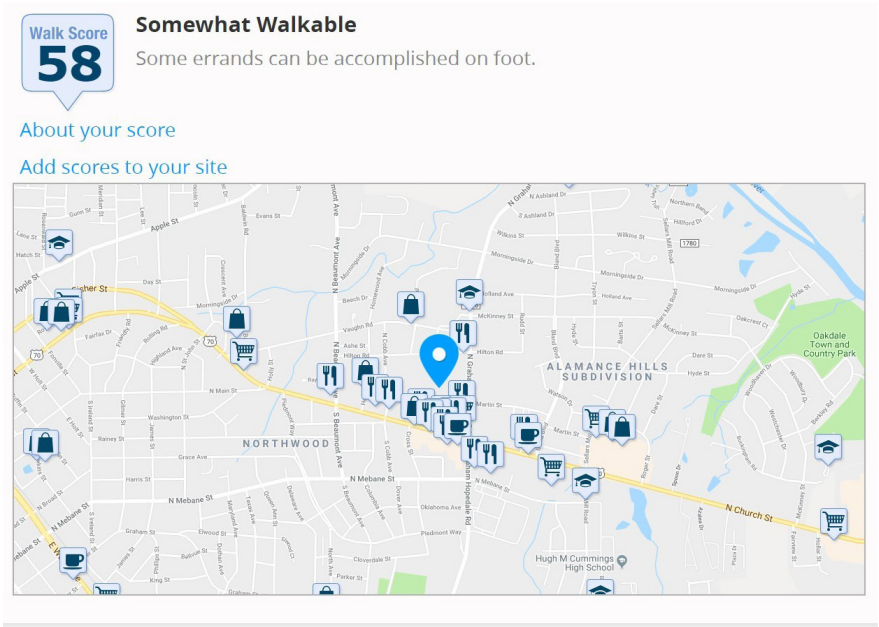


Figure 23 - The TAMP site has a Walk Score of 58 - Somewhat Walkable.

RESOURCES:

Tarheel Army Missile Plant National Register Listing

Preservation Green Lab – Quantifying the Environmental Value of Building Reuse

Federal Historic Tax Credit Resources:

https://www.nps.gov/tps/tax-incentives.htm

https://www.nps.gov/tps/standards/rehabilitation/rehab/stand.htm

https://www.nps.gov/tps/how-to-preserve/briefs.htm

https://www.irs.gov/businesses/small-businesses-self-employed/rehabilitation-tax-credit-real-estate-tax-tips

North Carolina Historic Tax Credit Resources:

https://www.hpo.ncdcr.gov/tchome.htm

http://www.hpo.ncdcr.gov/TaxCredits/ITA_FactSheet.pdf

Housing and Transportation Index

https://htaindex.cnt.org/map/

https://htaindex.cnt.org/compare-affordability/

https://htaindex.cnt.org/compare-greenhouse-gas/

Social Vulnerability Index

https://svi.cdc.gov/

https://svi.cdc.gov/map.html

Walkscore

https://www.walkscore.com/cities-and-neighborhoods/

https://www.walkscore.com/professional/walkability-research.php

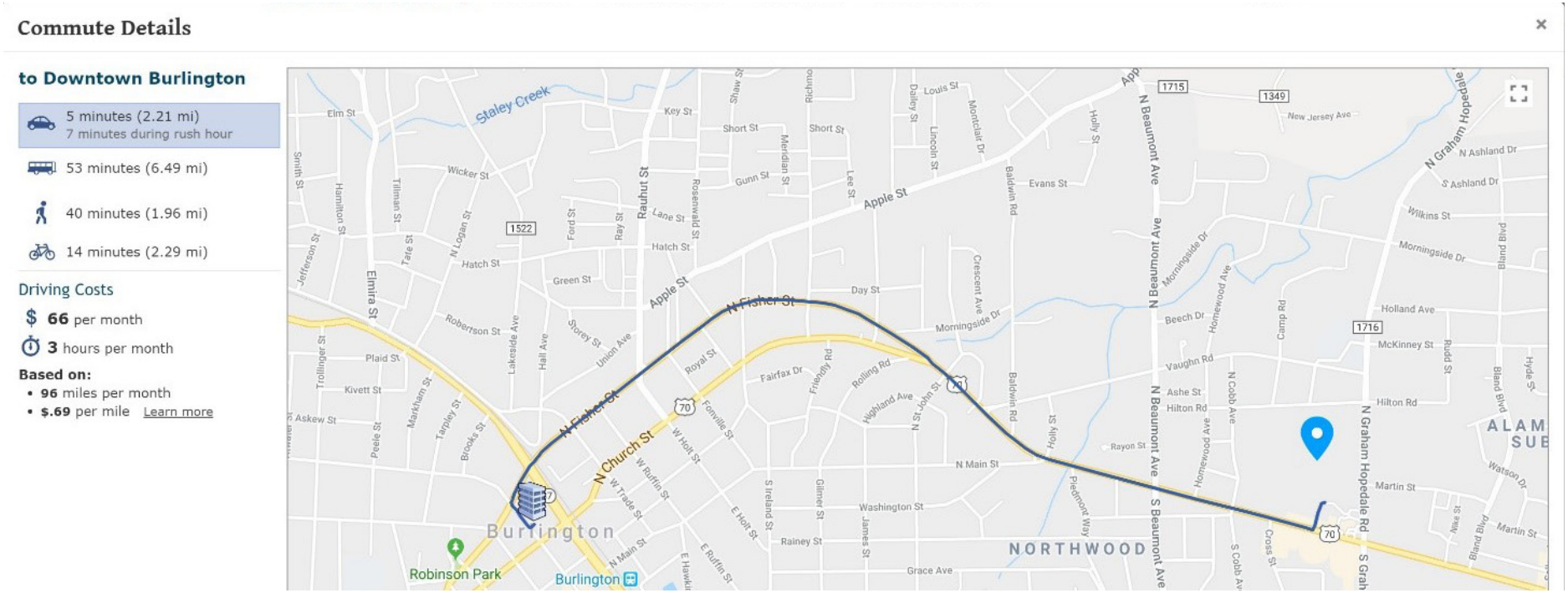


Figure 24 - It takes ten times as long to travel between downtown and the TAMP site using public transportation in lieu of private automobiles.

Environmental Status

Historic Framework of Uses, Brownfield Status, & Liability Management

The 22 acre former Western Electric Facility/Tarheel Army Missile Plant witnessed multiple industrial uses from the time of its initial development. Many of the industrial and commercial uses also brought unintended consequences in the form of suspected and actual contamination. The site's manufacturing history began with an A.M. Johnson Rayon Mill fabric manufacturing in 1928, and thereafter included Fairchild Engine and Airplane Corporation efforts in the 1940s, and later the US Army Missile Command. The US military operations later transitioned to defense contractor Western Electric Company use for radar and missile guidance system research and manufacturing after the 1950s until 1991.

Each of these varied industrial and military uses included their own processes that create the risk of legacy environmental conditions: metal plating; parts cleaning,; petroleum and hazardous wastes use and storage;, metal fabrication, painting and powder coating; radioactive materials handling; and more. Additionally, typical industrial factory activities of power plant heating and cooling as well as wastewater treatment created legacy recognized environmental conditions of their own.

The Western Electric Facility has remained dormant since approximately 2004. Typically, an industrial facility that has hosted intensive manufacturing processes like those witnessed at this site that remains vacant will meet the threshold definition

of a "brownfield". Generally, a brownfield is an underutilized property with either a perceived or an actual presence of contamination that inhibits its redevelopment.

However, this general definition may not technically fit the Western Electric Facility site due to its US government and military use and ownership history. The specific Brownfields definition is found in Public Law 107-118 (H.R. 2869): "Small Business Liability Relief and Brownfields Revitalization Act" signed into law January 11, 2002. "DEFINITION OF BROWNFIELD SITE- Section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601)

With certain legal exclusions and additions, the term "brownfield site" means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The statutory exclusion that may be applied to the Western Electric Facility site is subsection (B)(vii) "a facility that is subject to the jurisdiction, custody, or control of a department, agency, or instrumentality of the United States, except for land held in trust by the United States for an Indian tribe…"

Although esoteric, this definitional distinction is important for determining environmental liability strategies and eligibility and thus availability of redevelopment incentives and funding resources. The city, community, and future redevelopment partners will need to work with the United States Army as well as state officials with the North Carolina Department of Environmental Quality to manage the site's ongoing environmental liability concerns, and prepare it for reuse.

Responsible Party – US Army: The US Army Installation Management Command (IMCOM) was activated on 24 Oct. 2006, to reduce bureaucracy, apply a uniform business structure to manage U.S. Army installations, sustain the environment and enhance the well-being of the military community. Officials from the (IMCOM AEC) are presently in charge of managing legacy environmental liabilities for the site.

As the Army has taken the role of responsible party at the Western Electric Facility site, they are responsible for bringing the site into regulatory compliance from a CERCLA standpoint. The Department of Defense follows CERCLA EPA protocols, and the State regulatory framework is also modeled under CERCLA. The current site point of contact is John P. Beasley.

State of North Carolina Environmental Facilitation: The state legislature created the North Carolina Brownfield Program to help promote redevelopment of generally applicable brownfield sites. In the North Carolina context, in 1997 the state enacted the Brownfields Property Reuse Act to provide "a mechanism to treat prospective developers of brownfield sites differently than the parties responsible for contaminating them. Prospective developers negotiate a brownfields agreement with the program that defines activities needed to make the site suitable for reuse,

rather than cleaning up the site to regulatory standards (which responsible parties are required to do)." The North Carolina Brownfield Program is a fee based service generally applicable to eligible sites, see: https://deq.nc.gov/about/divisions/waste-management/bf

For sites that are ineligible for the North Carolina Brownfield Program there are other avenues to achieve state sanctioned reuse preparation. The state's "Voluntary Cleanup Program" is the shorter name for the North Carolina Inactive Hazardous Sites Program. It has existed since 1987 as is designed to encourage cleanups of contaminated properties.

Presently, the North Carolina Department of Environmental Quality (NC DEQ) is the lead state regulatory agency for the Western Electric Facility site. Environmental concerns related to USTs, Hazardous Waste generation, or other substantive requirements of permits or environmental reporting during assessment and/or remediation activities will be routed through the state's DEQ Superfund Division for facilitation. The site's current point of contact at North Carolina's DEQ is Kirsten "Kitty" Hiortdahl.

Site Environmental Concerns and Status

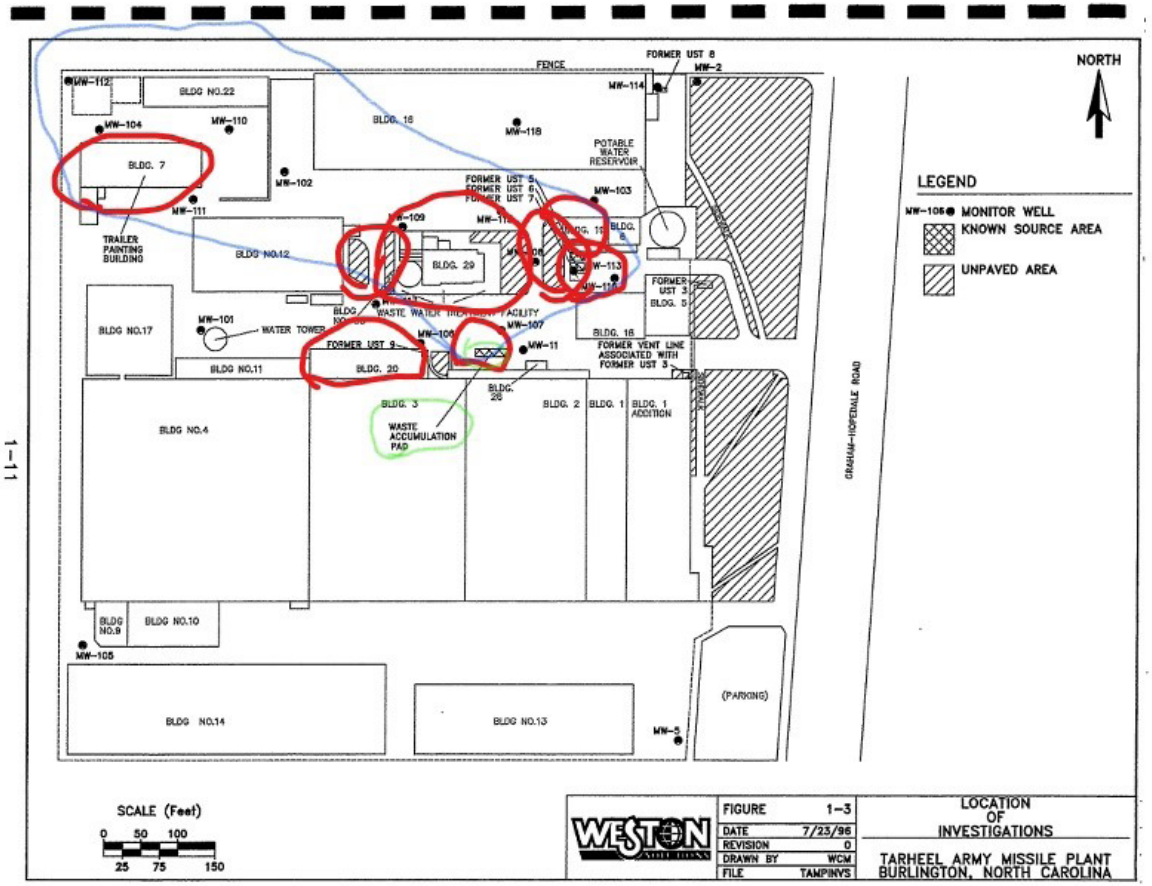
The SDAT team contacted NC DEQ staff, and were able to review a considerable amount of extensive digital records related to the sites environmental condition that are available online. The historic records of the Western Electric Facility site reveal 1988 reports presuming no off site contamination existed, and discouraging additional on-site assessment later in mid 1990s. The record indicates that federal political leadership held a desire to end investigation – presumably in order to not prevent redevelopment. This was unfortunately not an uncommon sentiment before the 1990s and a broader understanding of how to mitigate brownfield liability concerns.

Since the mid-2000s, skilled industrial property redevelopment developers recognize that only through full site characterization, understanding, and removing uncertainty can environmental liability be properly managed.

The site does indeed have contamination issues to manage. Significant areas of on-site remediation have occurred in the past. Asbestos abatement previously occurred in most of the buildings. Prior soil and ground water assessment identified key areas of concern. These include the areas outlined in red below; the blue indicates an area of groundwater concern.

- Contamination discovered in 1992 in "Waste Accumulation Pad" area of former hazardous waste storage which prompted and remediation 1990s-2000s.

- Several areas exist, but the largest source area of contamination identified to date is this former hazardous waste storage area.



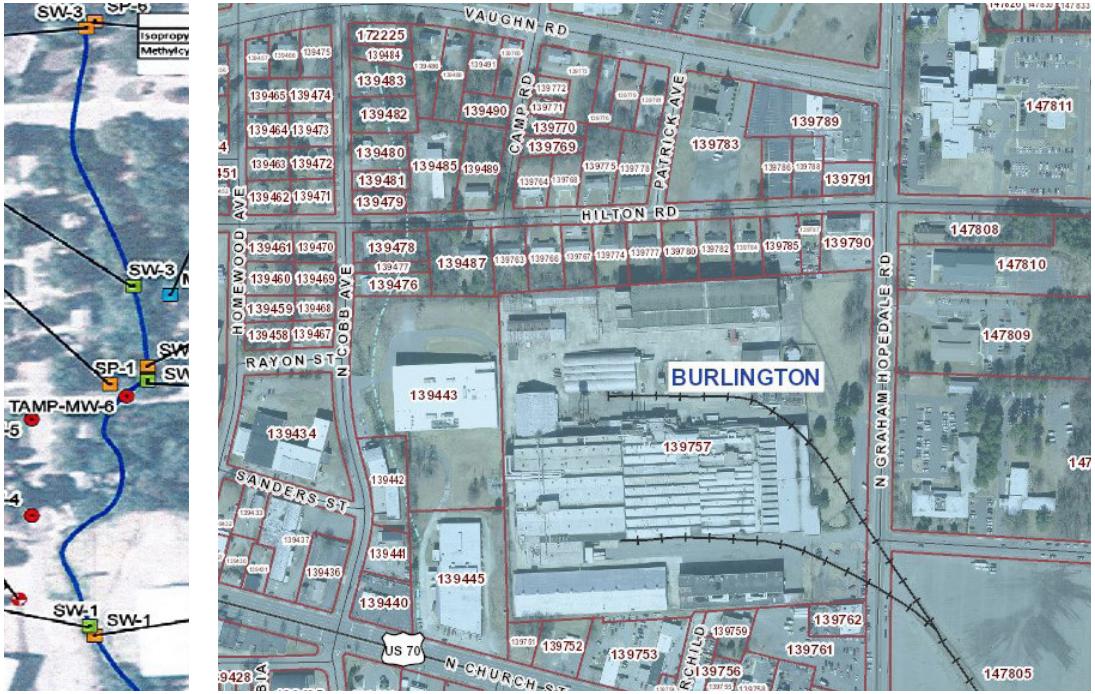
Remediation activities have occurred in specific portions of the site for many years – including:

- Air Sparging/Soil Vapor Extraction (AS/SVE) 1999-2004.
- Groundwater Extraction (Pump & Treat) 1999-2013.
- Bioremediation - Emulsified Oil Substrate (EOS) 2004-2006.

Additional site characterization and remediation actions remain to prepare the site for liability management sufficient to ensure the risk of impacts to human health and the environment in normal commercial use of the property in the future are removed. This will enable bank financing and significant reinvestment in the site. In particular, the most pressing issue relates to source ground water contamination that is migrating off site.

In May 2017 the North Carolina Department of Health and Human Services (NC DHHS) and Agency for Toxic Substances and Disease Registry (ATSDR) presented results of a "Health Consultation" – essentially a health risks assessment.

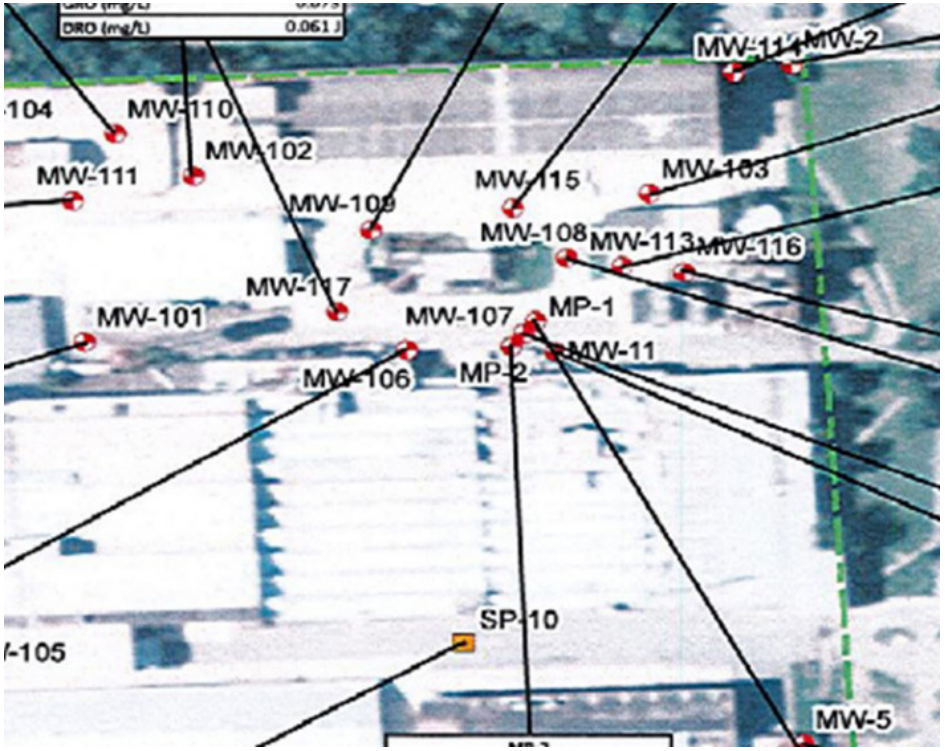
- Data from sampling in 2014-2015 could not reveal the health risks from groundwater to off-site residents in near NW area beyond the site along Hilton Road.
- The May 2017 ATSDR report recommended that Army conduct Vapor Intrusion Sampling in homes northwest of the site.
- The Army has reviewed the ATSDR recommendations, and shall provide a work plan for NC DEQ to approve after the Army receives Right of Entry to sample indoor air in selected home basements or beneath foundations. This work plan should have been drafted by completion date of the SDAT report (Jan. 2019).



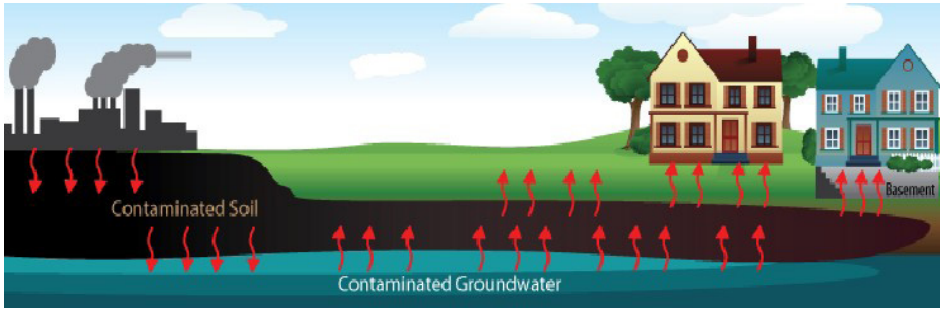
Off-site sampling 2014-2015.

Off-site brownfield impacts

- The contaminants identified on site at the TAMP site include chlorinated solvents TCE and PCE, as well as petroleum constituents.
- Solvents travel readily in groundwater flow, and have been identified off site in the nearby creek.
- Present potential Vapor Intrusion into nearby homes. A general illustration of vapor intrusion from groundwater is pictured on the next page.



Onsite sampling 2014.



Next Steps

The site has a long history and accordingly it has major items to fully resolve for commercial market reuse. Adding a potential residential reuse scenario in the mix would unduly complicate the site's redevelopment.

Key to future redevelopment success will be site control. The City of Burlington, and the community itself, stand the best chance to witness success at the Western Electric Facility site if the site is held by parties with significant community interest. Often, large sites with complicated contamination liability management scenarios progress to revitalization fastest when site control is secured in a non-profit redevelopment corporation, land trust, public private partnership, or similar entity. A key example to reference is the Menomonee Valley Partnership in Milwaukee, WI.

Creating an opportunity for community stakeholder involvement in the redevelopment's outcome is also a core asset for a sustainable outcome. Stakeholder membership can be helpful if either on the governing board of the entity holding site control, or on the entity guiding site programming and property management, or both.

A step further in stakeholder participation would include community based equity in the redevelopment's outcome. Community members may even participate financially by gaining project outcome equity through participation in innovative efforts hatched locally in North Carolina such as OurMove.com. In this way they could share not only in the redevelopment planning, but in the project's successful outcome.

After the Army concludes its examination of potential off-site vapor intrusion concerns, the next step will be to complete a full on-site summary environmental review and data gap characterization for the specific reuse components in the specific portions of the site recommended. This new environmental condition report would consolidate all prior environmental reports on hand with the off-site vapor intrusion sampling data to create new comprehensive understanding of the site. Matching the redevelopment outcome concepts with conditions present in the consolidated site condition report can help drive cost effective redevelopment elements first in areas that ARE NOT significantly impacted. In this tiered approach initial bite size pieces can become prioritized for redevelopment focus, and help achieve more timely results in reuse.

The specific use recommendations for each of these less impacted components of the Western Electric Facility site can dovetail with recommendations of the SDAT team and/or community driven development goals that successfully gain financing. Separate phased components may advance to redevelopment while other portions of the site simultaneously continue through further site investigation and/or remediation. As it is unlikely that the entire site would witness investment at the same time, an incremental approach would offer the most manageable strategy, and provide the community with visible and useful change to celebrate.

Site Design

The historic Western Electric site occupies an important place in the heart and soul of the Burlington community. As attested by the comments of so many Burlington residents during our meetings, it is deeply connected to the lives and memories of the thousands of Burlington residents and their relatives who worked at the facility during over half a century of operation. Today, sitting quietly isolated, it is a powerful symbol of both the decay and neglect felt by this area of town since its closing, and of a time when a strong middle class was reshaping and redefining life in a vibrant and growing Burlington economy.

CHALLENGES

Western Electric is an enormous site with significant redevelopment challenges. At over 22 acres and 800,000 s.f., its scale is daunting and it would be beyond the scope of most commercial or municipal developers. This, combined with the public's perception of the on-site environmental contamination issues, has made envisioning a future for the site seem close to impossible.

22-acre Western Electric complex showing signs of deterioration.

Views of the open courtyard like spaces between buildings.

Watching the slow deterioration of something meaningful to a community makes saving it seem overwhelming. The physical deterioration of the facility is only part of the problem. Combined with the loss of jobs due to its closing, the neighborhoods and communities surrounding Western Electric feel a sense of despair and helplessness which impede and slow the development of ideas and initiatives needed to take on a project of this scale.

ASSETS

Western Electric is over 22 acres in size with over 800,000 s.f. of developable space under roof. The site contains a variety of buildings ranging from those with very large footprints to single, smaller, iconic freestanding buildings. Most buildings are in good condition and all are repairable/re-usable.

Its large building footprints are broken up into manageable and developable bays with clear structural locations for dividing between different tenants or phases of development.

The open spaces around and between the buildings provide many opportunities for easy access and circulation, while providing places for the development of green spaces, gardens, and outdoor activities supporting new building programs.

Western Electric is on the National Register of Historic Places with its significance tied to evolving uses over many decades of building modifications, expansions, and additions. The industrial character of the buildings along with the utilitarian and pragmatic approach to their layout and construction provide a solid foundation for flexible redevelopment and modifications that would be sensitive to their history and architectural character. Preserving the site's historic and character defining features, while remaining in compliance with the Secretary of Interior Standards for the Rehabilitation of Historic Buildings, will be essential to qualifying for state and/or federal historic tax credits available to the project.

Western Electric is alluring.

Its spaces are beautiful, evocative, and poetic. Although in a picturesque state of decay and abandonment, it's buildings have a nostalgic charm, particularly today, when mid-century

historic is being reinterpreted as mid-century modern, bringing a new sense of value and style to what was once an architecture of technical and industrial utility. Millenials love this stuff, and their Ikea furniture and casual cafe/brewery life styles fit right in.

The power of place should not be underestimated. This place may in fact be the one common thing that touches more individual lives in Burlington than anything else. The residents of Burlington care deeply for it and expressed just how important it has been to them and the lives of their extended families and friends.

SHAPING AN APPROACH TO REDEVELOPMENT

We have framed a recommended approach to redevelopment of the Western Electric site around a list of key issues/challenges with possible solutions to each. This set of issues/challenges does not present an ordered hierarchy but rather a set of ideas that, taken together, provide a manageable framework for addressing the complexities inherent in this site, its buildings, its history, and its community.

Issue #1: Increasing connectivity to downtown, greenways, and the new sidewalk plan.

Challenge:

The Western Electric site was once the economic engine that built the surrounding neighborhoods and provided jobs for tens of thousands of Burlington residents. It was the hub for the eastern part of Burlington, connected to downtown via the Church Street commercial corridor. Over time, as its operations wound down, fewer people worked there, coming and going every day. As operations at the plant declined, and Burlington's economy was transitioning, it became an isolated relic of Burlington's twentieth century history. This, along with the lack of development in the Church Street corridor, has left not only the Western Electric site, but many of the surrounding neighborhoods in the eastern part of the city feeling isolated and separate from the city's downtown core and the retail/commercial development occurring to the west.

Currently, the Church Street corridor feels run down and a bit dodgy and certainly does not create an inviting approach whether you are heading from east Burlington into downtown or from downtown out to east Burlington. Sidewalks start and stop making pedestrian circulation difficult and there is a general feeling that you wouldn't take Church Street to get to where your going unless you had to.

Solution:

Connect the Western Electric site to the city's new Greenways and Bikeways Plan: The Western Electric site lies within a block or two of both the city's proposed new greenway development as well its planned new greenway bike path. The re-activation of the Western Electric site creates an opportunity, through the proposed greenways, to link the site with other neighborhoods throughout the city.

Creating a plan for improving the experience along Church street between the site and downtown will also help reconnect this portion of the city with its downtown and allow new compatible and supportive business development to occur along the corridor. Sidewalk and streetscape improvements, following the city's Pedestrian Master Plan guidelines, will help create a visual sense of connectivity with downtown and the rest of the city while completing the sidewalk system for a safer and more comfortable pedestrian experience.

Issue #2: Providing family resources and opportunities that do not currently exist.

Challenge:

The neighborhoods surrounding the plant grew as a direct result of the influx of workers needed to fill jobs at the plant. With the closing of the plant, the vitality of many of these neighborhoods have declined and many services that may once have been local to the area have relocated or are no longer available. In our discussions with residents many people spoke about how new development and the resources families need in their neighborhoods have moved to the west side of town.

Solution:

The redevelopment of the Western Electric site could provide a new central location for family and community resources serving this part of the city in a location with connections to improved transportation routes and other regional services.

Issue #3: Becoming the center of a community health and wellness supported by the local and regional governments and health care systems.

Challenge:

Although there are regional and county health services nearby, we heard from residents, doctors, and medical professionals that this area lacks many of the services that families and residents need in today's market. The rise of outpatient procedures and "doc-in-a-box" health care chains make it possible to provide a wide range of services, traditionally found in hospitals, from smaller and more strategically placed neighborhood-scaled locations.

Solution:

Space in a mixed-use development at the Western Electric site could provide a range of health care and wellness services with opportunities to partner with local hospital networks and teaching universities.

Issue #4: Developing the site incrementally and being responsive to varying and evolving community needs.

Challenge:

The Western Electric site is so large that traditional development approaches may not be the most effective when looking at project financing over time.

Solution:

A phased approach, breaking the site into smaller more manageable sized pieces, will help reduce the burden of such a large scale development and its associated costs. Phasing the project into a range of project types can also provide a wider range of opportunities to bring key development partners into the mix where there may be synergy between community players in the fields of education and healthcare or education and small business incubation. What the community needs now may not be what it needs in another five, ten or even twenty years. Phasing the project over time will allow for new and emerging community needs to inform how future phases are developed and funded.

Issue #5: Concentrating community/regional resources and amenities in and around Western Electric.

Challenge:

Many regional resources already exist along the Graham Hopedale corridor, drawing people into the city from the surrounding county. These facilities are near each other, but there is no sense that they are working to support an "East Burlington" identity or are even thought of as being central to each other.

Solution:

Bringing additional regional services and amenities to the Western Electric location would help establish a stronger regional service node where supporting and related resources can be located near each other, drawing even more people into this part of the city.

Issue #6: Attracting future residents and improving the lives of current residents in the neighborhoods around Western Electric.

Challenge:

With the right planning and marketing, over the next ten years, Burlington is well placed to absorb an influx of the middle-class family growth taking place in the Triangle area. As housing prices skyrocket in some areas around Burlington, much of the city is still very affordable but many of its older, established neighborhoods feel a bit neglected as retail and commercial development has been directed west towards the interstate and the housing stock in these areas, around Western Electric for example, feel run down and need refreshing.

Solution:

With the redevelopment of the Western Electric site as a new centerpiece for development and services in east Burlington, well-planned improvements to the surrounding neighborhoods will improve the quality of life for existing residents and make these neighborhoods more attractive for new residents looking for affordable housing in established mixed-income areas of Burlington. The Western Electric

redevelopment along with planned improvements to the Church Street corridor will lay the groundwork for re-energizing east Burlington as a welcoming and desirable place to live, conduct business, and have fun.

NEW USES

In our public meetings and focus groups we listened carefully for ideas about what types of uses the citizens would like to see that could begin to help frame a development strategy that addresses the key development issues and challenges that this site poses. These are, by no means, the only uses that might work at the Western Electric site but they show how a range of community needs and opportunities can work together in partnership as incremental components of a large, centralized development where each use is supported by complimentary businesses and activities.

Children's Museum & Activity Center

Activities for families are lacking in this part of Burlington. A Children's Museum could introduce a new amenity that works both as a local place for gathering and activities as well as a tourism draw for the region. It would introduce a sense of fun and excitement into the somewhat cold context of this industrial site and could become the front door to the development where color, life, art, and play lift the spirits of the community and visitors to Burlington.

Cold War Museum

Nationally, there is a growing interest in Cold War history and the clandestine nature of many sites and locations in the communities where they can be found. Western Electric's Cold War history is particularly interesting to both the people and families connected to working there and would draw a national audience of museum goers when visiting this area of central North Carolina. The site just feels right for it and in very few places can you experience a place that represents a particular time with so many relatively unchanged buildings. The entire history of the site would be interpreted, in order to understand how facilities like this were often transformed to meet wartime and civilian needs.

Wellness Center / Clinic / Outpatient Facilities

Instead of just providing a location for medical services to the community, building a community around the idea of "wellness" focuses on broader ideas about elevating the quality of life in the surrounding neighborhoods and Burlington as a whole. Combining education, training, and fitness with medical outpatient services creates a place where the culture of wellness and healthy communities can be supported and promoted.

Recreation

Indoor recreational facilities can be created in the large open spaces of the factory buildings on-site providing year-round sports locations that can be used both by the local community and for regional events and tournaments bringing families into Burlington to fill hotels, eat at its restaurants and shop. Soccer, tennis, pickle-ball, all fit comfortably into the long-span, high-bay spaces of the central Albert Kahn designed buildings with plenty of support space on all sides.

Brewery / Food Service / Entertainment

A complex the size of Western Electric will draw a large number of people who will either work there day-to-day or are coming there for services, recreation, or tourism. With such wonderful outdoor spaces and interesting industrial buildings there are many opportune locations for the creation of a restaurant, cafe, coffee shop, or brewery that would serve as a draws to the development while supporting on-site workers and events.

Education

Tap in to opportunities to partner with local colleges and educational institutions that are looking for ways to be more integrated into their community or to establish stand alone programs or facilities off campus. These programs could potentially be tied-in to the project's focus on health and wellness.

Event & Meeting Space

There are many opportunities across the site to see the inclusion of event or meeting space either as stand-alone, primary components of the development or as adjunct spaces designed to support other on-site uses.

The extent of flexible development space on-site along with the concept of developing a mixed use complex containing a variety of self-contained amenities all at one location could be perfect for the development of a conference center which could also be tied-in to the educational, health, and wellness uses.

New Local Markets

The front yard and parking areas that are visible along Graham Hopedale Rd. are perfect locations to develop a local/regional farmers market or makers market. These markets could be coordinated to be open on days when the existing farmers market is closed with special markets focused on holiday or seasonal times.

Small Business Incubation / Graduation

As a new local/regional hub the development of small business incubation space and graduation or transition spaces for these businesses could help create a new crop of businesses that can start their development at Western Electric, eventually transitioning into the surrounding neighborhoods and communities helping to strengthen the economy of the area surrounding the project. There could be opportunities here for

supportive connections to the education, health/wellness, events and local markets initiatives on-site.

Technology Incubation

As a center for innovative technology and research, there are many partners in the Triangle area and along the I-40 corridor that could partner to locate training or lab space in the Western Electric development. LabCorp's presence in Burlington, particularly the location of its headquarters in downtown, shows that there is already a strong relationship between these industries and the City of Burlington which could be built-on using the facilities situated at the Western Electric site. Incubating tech start-ups helps bring more professionals into the community and, with good neighborhood planning, could contribute to enhancing and revitalizing existing neighborhoods.

City Presence on Site

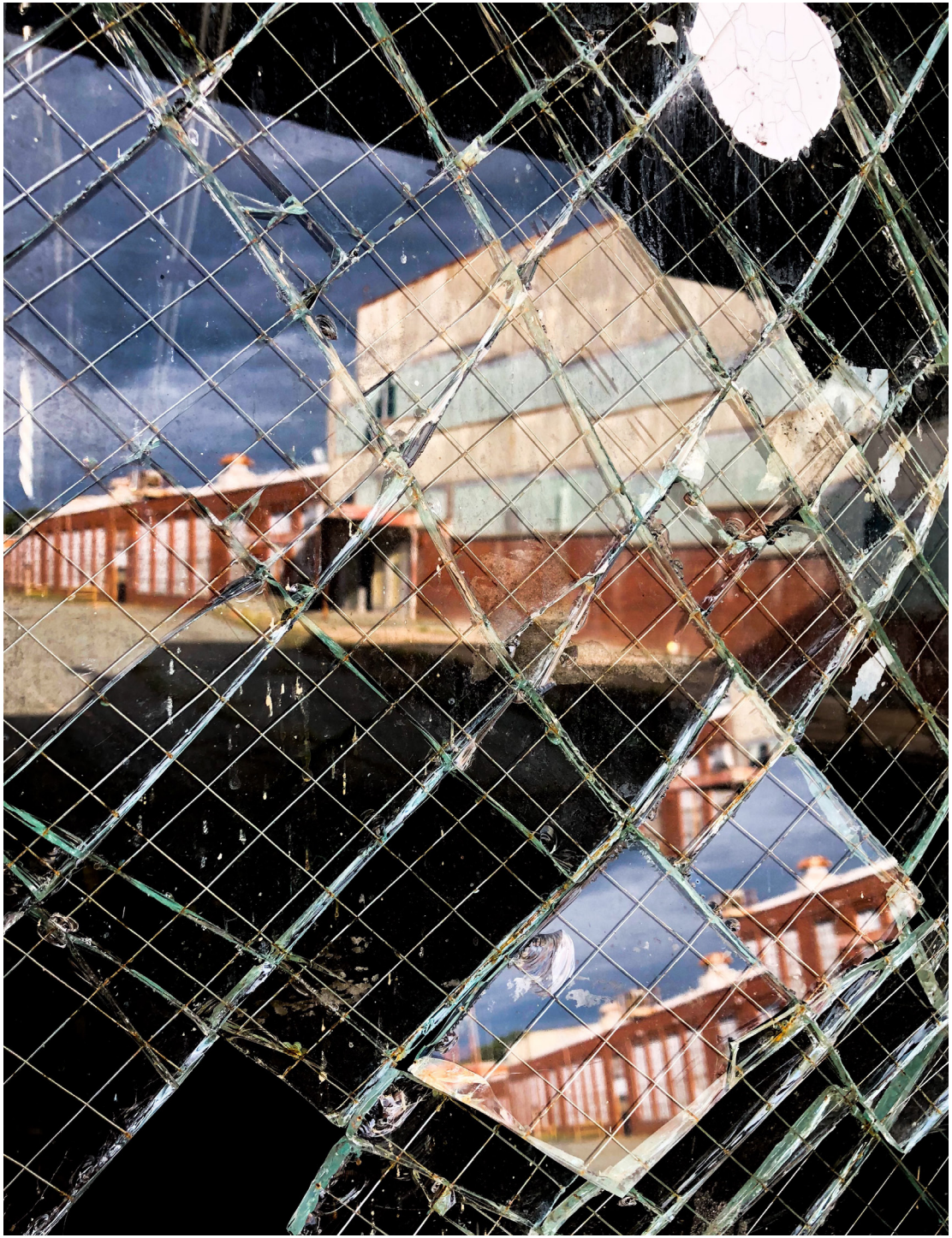
It is important that the City of Burlington have a visible presence on-site. Often this is accomplished by the location of a police substation or some other smaller gesture but there are opportunities for other city uses such as departmental offices, or meeting/event space. Having an operational presence in the eastern part of the city would help residents of this part of town feel more connected to the city government and the services it provides.

Art & Maker Space

There are plenty of great studio and gallery space opportunities throughout the site, both inside buildings and outside. These buildings are well suited for the development of art and maker spaces due to their abundant open space and natural light. Their connection to the outdoors provides easy access along with opportunities for the display of the artists' work and social gathering. Focusing a portion of the development on artist and maker spaces would add interest, fun, and creativity, to the larger development and position Western Electric as a regional draw for arts and cultural events tying in to other social and entertainment opportunities in Burlington.

Flexible Development Space

A portion of the developable building area should be made available as flexible development space - space to accommodate future ideas and new uses that will evolve as the project grows and matures.



PHASING

This part of Burlington doesn't necessarily need 800,000 s.f. of any one particular thing. But taking this large facility and breaking it down into smaller parcels allows us to look at how a phased or incremental development could be both more manageable for developers and/or the city while allowing the project to accommodate a wider variety of uses that provide needed resources to this part of town.

Some simple decisions can be made, initially, to help change the project's image and how the community sees its potential and possible future. In a phased approach the first phase of work can concentrate on starting with low-hanging fruit — achievable short-term goals that are reasonable to develop and change the look and feel of the complex.

The following phases lay out an approach where new uses for the facility are viewed with an eye towards mitigating development constraints. Over time, this phased approach can create a development that is integrated into the lives of a growing and evolving Burlington population providing local and regional draws for the arts, culture, and business.

Phase 1

- Initial development happens in area least affected by environmental issues.
- Can start immediately with small scale beautification projects.
- Can engage immediately through visible art and commerce along Graham Hopedale.
- Visible projects create an opportunity to manage project messaging.

Front Yard:

Just by starting to tend to and clean up the grass area along Graham Hopedale, the community will start to think differently about the project and its potential. This is the most visible part of the project and is one of the easiest to start to develop. Temporary art or public sculpture can be used to activate the "yard" and help draw attention to what is happening. Simply keeping the grass cut along with minimal landscape management will make an immediate difference.

Children's Museum and Activity Center:

The development of a Children's Museum on the ground floor of the 1970's office addition creates a new front door for the facility that is fun and family friendly. Other than outdoor recreation (city parks, ballfields and such) there are not many things for families with children to do in this part of Burlington. The children's museum could provide a wide range of activities for local and visiting families while promoting art and learning at many levels. This building is an easy renovation and can be as connected to or separated from other on-site development as desired.

South Plaza Use for Special Events:

The South Plaza is a perfect space for staging temporary or special events. It can be cleaned up quickly and made safe for the public with minimal costs and provides a fun and interesting place for music, art, or commerce. Opening this plaza up for the public also allows them to enter part of the industrial complex and get excited about the plans for its continued development.

Limited Use of Space for Temporary Art Installations and Exhibits:

In addition to both the front yard and the South Plaza space, the two story high open bay building at the rear of the South Plaza can easily be converted to a temporary exhibit space for painting, sculpture or installations. It is connected to the South Plaza so both can be incorporated into arts events with indoor and outdoor components.

Views of the South Plaza.

Proposed location for Children's Museum.

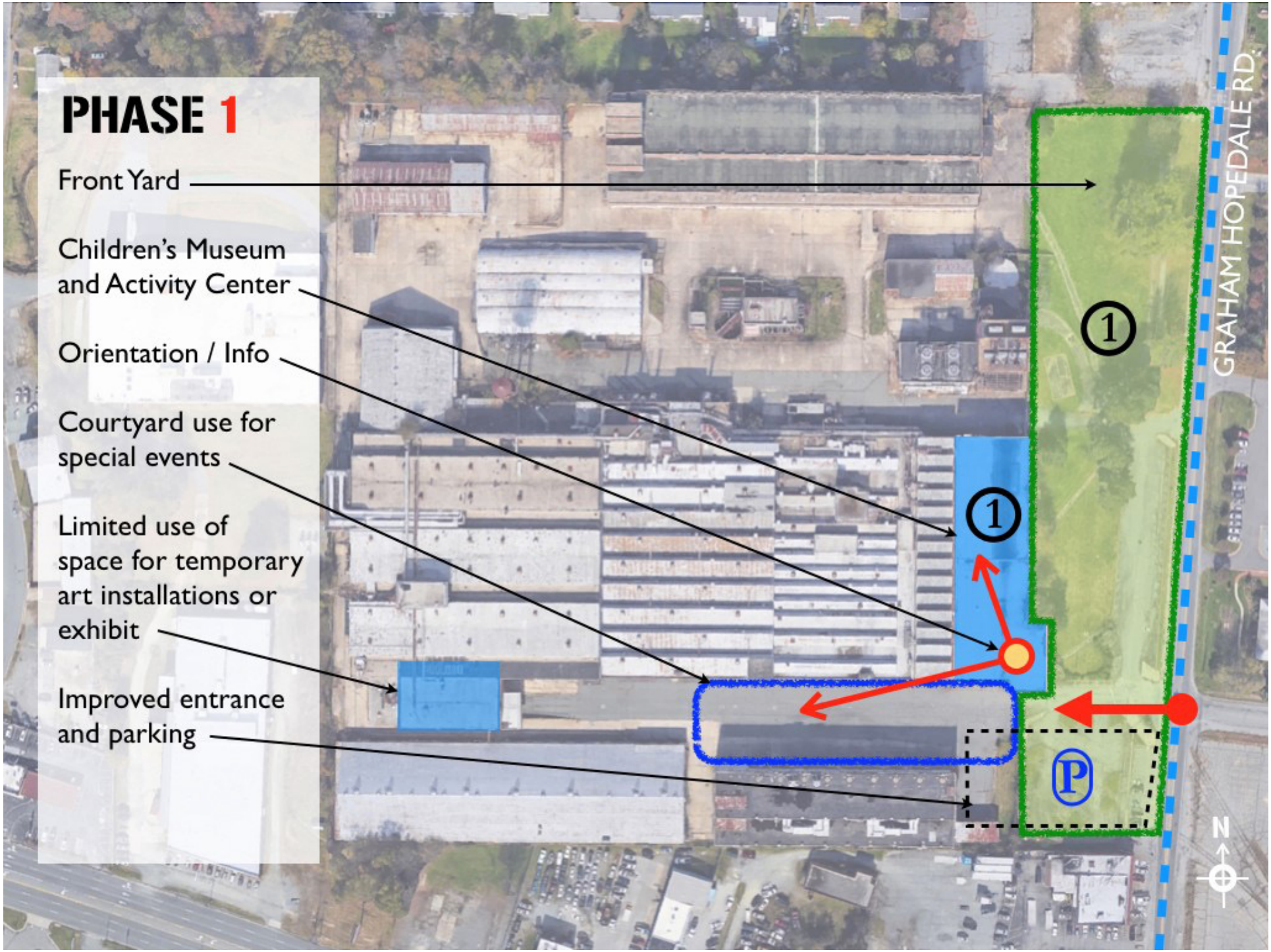
Children's Museum and public art on the green.

Improved Entrance and Parking:

With some minor improvements to the existing parking lot (outside the current fence/gate) this lot can serve the uses in this phase and start to restructure access to the site.

A new orientation point for information and directions would be incorporated into the Children's Museum entrance.

View of improved entrance and parking area with new signage and landscaping.


PHASE 1
Front Yard
Children's Museum and Activity Center
Orientation / Info
Courtyard use for special events
Limited use of space for temporary art installations or exhibit
Improved entrance and parking
GRAHAM HOPEDALE RD.
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Phase 2

- Continued expansion into the site in smaller increments.
- Add service components.
- Add flexible development components.
- Add supporting amenities for primary uses/tenants.

Brewery with Beer Garden:

Place a brewery in one of the coolest buildings around, the Western Electric Albert Kahn designed power plant. Locate the initial beer garden where it's visible from the street to help attract people's attention. This project may not happen quickly, but its planning and the search for a brewery tenant can start immediately. Word of this project and presentation images for the power plant renovation will provide great marketing materials for getting the community and funders excited about the development.

Expanding Parking / Improved site access and control:

With the addition of the brewery, expanded parking will be needed along Graham Hopedale Rd. This parking should be designed along with the brewery project and will provide a second entrance to the larger complex. Continued improvement and expansion of the parking areas provide better access to the site and control over traffic coming and going. This is the next step towards greater access and circulation to and around the site.

Continued improvement of Front Yard:

Continue clean up of the "front yard" to accommodate parking expansion and to make the facility look active and exciting.

Health and Wellness Clinic:

Develop a health and wellness center partnering with community and regional providers to offer needed family services to the community and to secure long term development partnerships with the regional health industry.

Second Floor Office Development at Phase 1 Building:

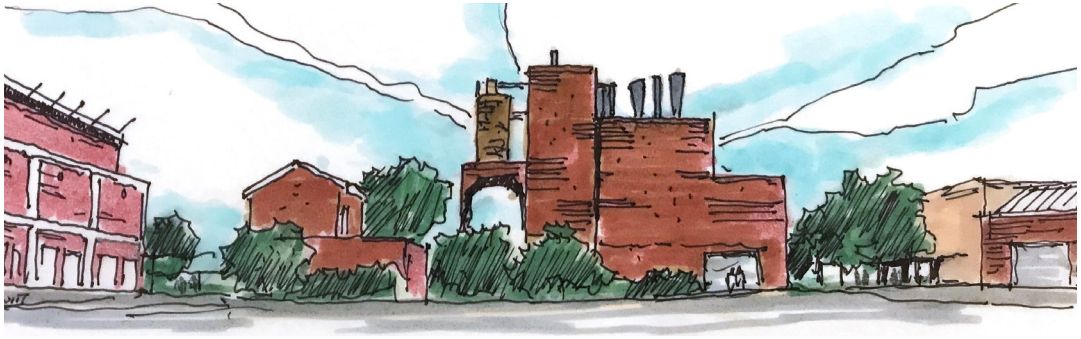
The Children's Museum might grow to need the second floor of their building but if not, this space provides additional leasable square footage that lends itself easily to development for office use.

Coffee Shop/Cafe:

A food service component can be located so that it supports both the Children's Museum and the health and wellness center, while taking advantage of the South Plaza to create visible outdoor seating with umbrellas, landscaping and outdoor activities.

Aerial view of the Power Plant .

Beer Garden at an industrial brewery site.

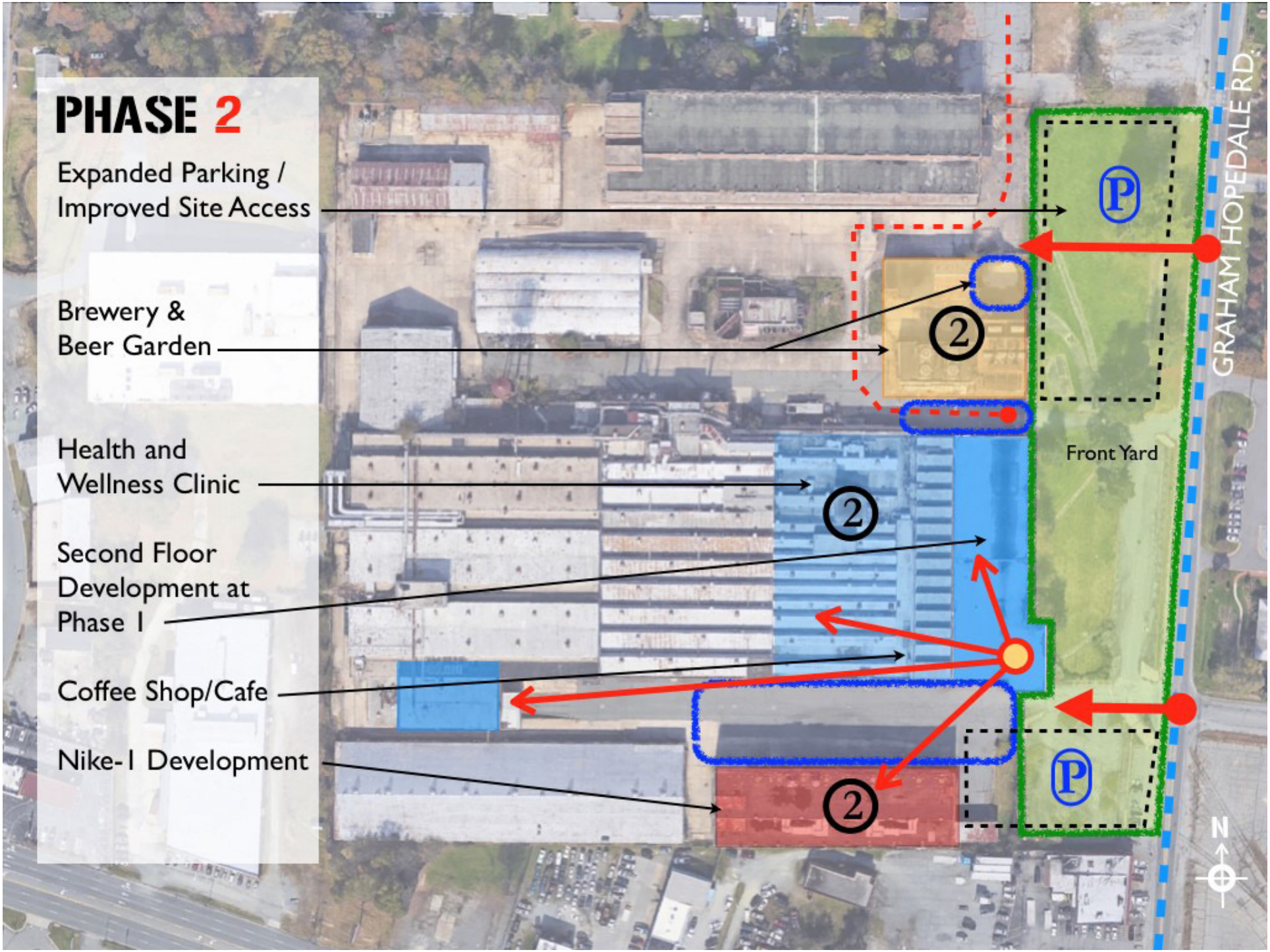


View of the Power Plant at the front (east) end of the North Plaza.

Nike-1 development:

The Nike-1 building is a very sound and solid structure that could be conventionally developed for office, lab, or educational use. The redevelopment of this building, along with the health and wellness center across the way, start to define the edges of the South Plaza where continued landscaping and development can happen.

Nike-1 building, exterior and interior.


PHASE 2
Expanded Parking / Improved Site Access
Brewery & Beer Garden
Health and Wellness Clinic
Second Floor Development at Phase 1
Coffee Shop/Cafe
Nike-1 Development
GRAHAM HOPEDALE RD.
Front Yard
P
P
2
2
2
N

Phase 3

- Start to engage the full build-out potential.
- Create greater site circulation infrastructure.
- Recreational uses connect to health and wellness.
- Become part of the regional economy.

Enhanced Access to Property:

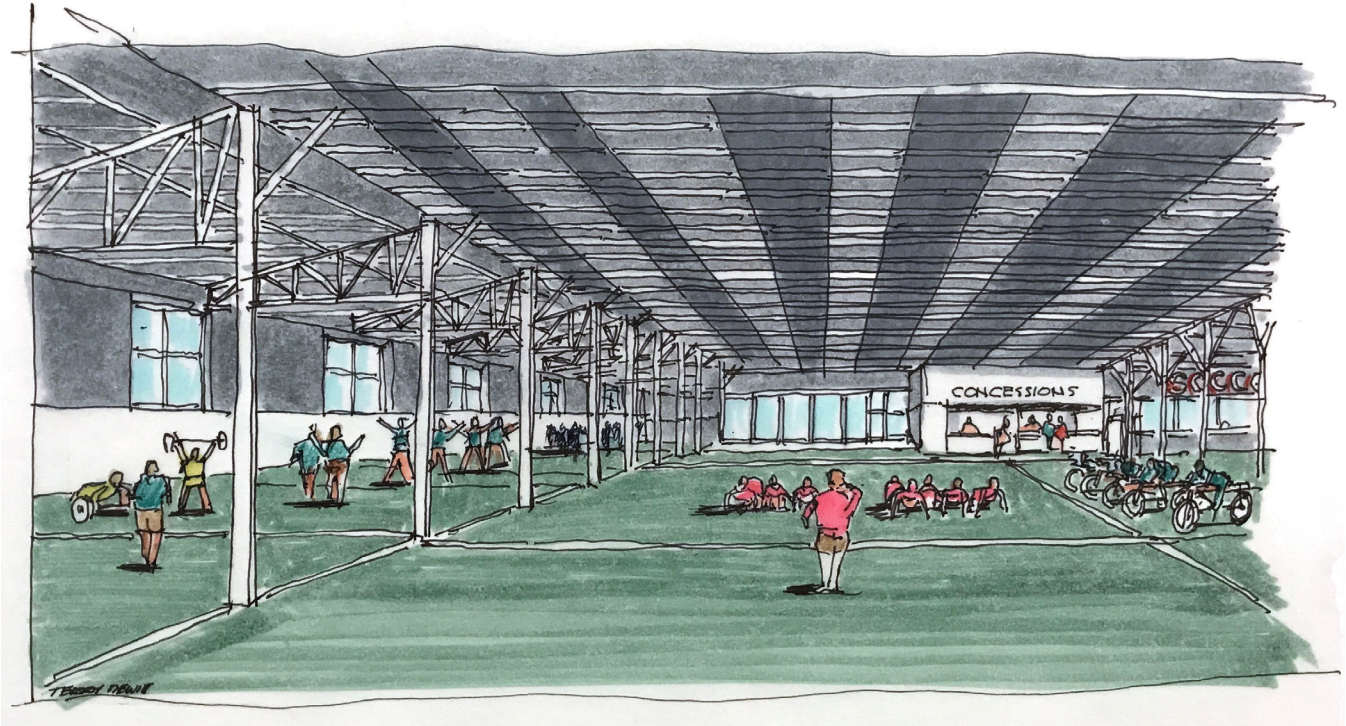
With increased use and visitation comes the need to continue enhancing the site's entrances and managing access to parking, entrances, and services/loading areas.

Recreational Expansion to Health and Wellness Center:

New indoor recreational facilities can be developed in the large open bay factory spaces just behind the health and wellness center. There is a natural relationship between recreation and health/wellness that can be used to create a larger wellness focus for the community and the region. Indoor recreation fields and their supporting functions will be available for both the local community as well as being a regional draw for tournaments and special events. Soccer tournaments could be going on inside while the international badminton tournament is taking place outside in the South Plaza.

Plaza to Plaza Connection:

Introducing a new connector through the center buildings connecting the South Plaza with the North Plaza will lay the ground work for future circulation across the entire site. Large events might utilize areas in both open spaces while a walk through the connector could be a glass corridor allowing you to see into the indoor recreation spaces or into exhibit/information areas.



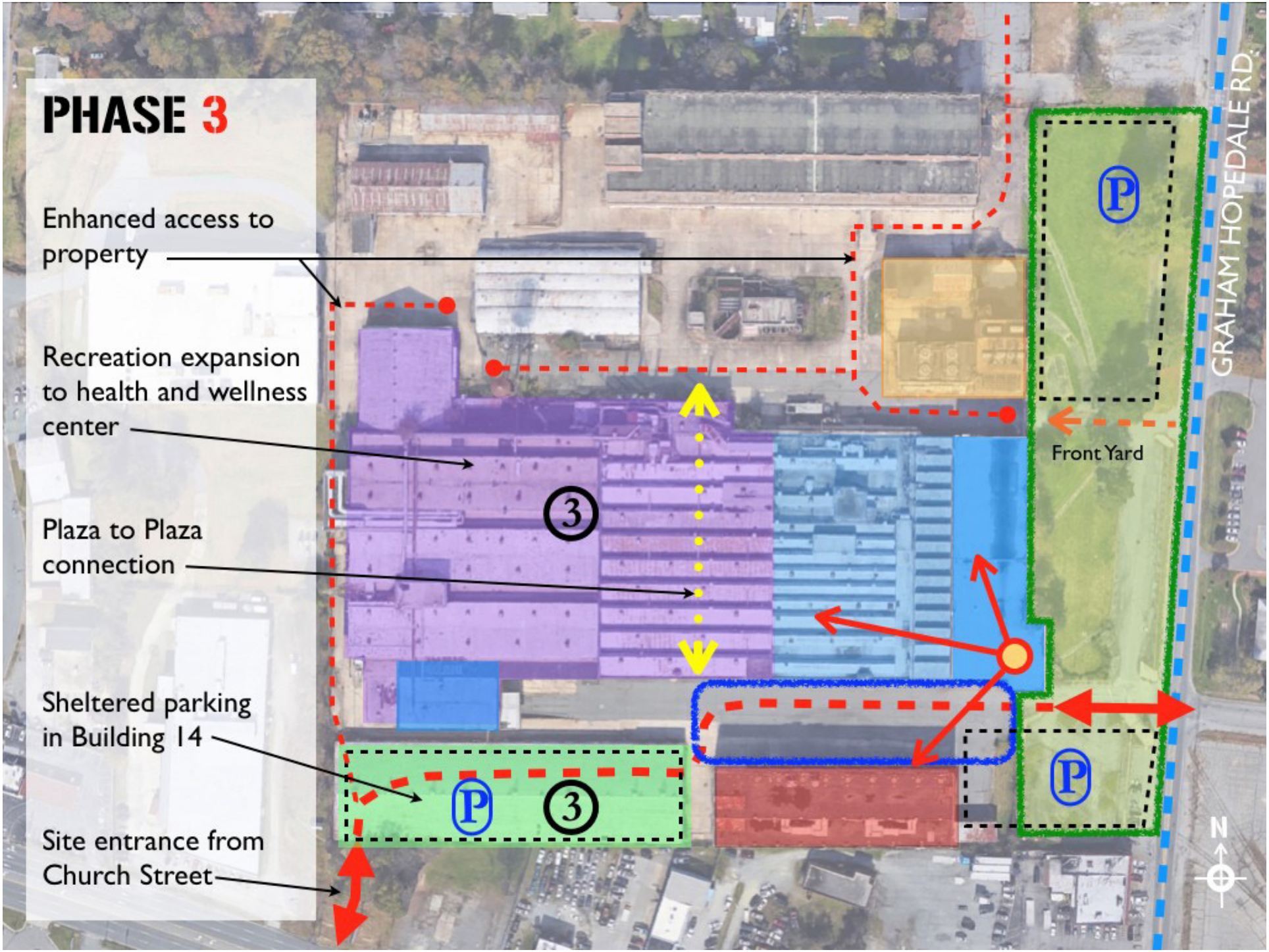
Building 14 (right) exterior and interior views .

Sheltered parking in Building 14:

Building 14, the large corrugated shed at the southwest corner of the South Plaza, is perfectly laid out to be converted into an indoor parking area serving both the new indoor recreation fields as well as the development of the Nike-1 building.

Site Entrance from Church Street:

An empty lot exists on Church Street in line with the end of Building 14. A new entrance to the Building 14 parking could be made from Church street keeping more vehicular traffic off of the site and directly into the indoor parking area. This new entrance creates an opportunity to connect a future service drive to access future development on the northwest part of the site.


PHASE 3
Enhanced access to property
Recreation expansion to health and wellness center
Plaza to Plaza connection
Sheltered parking in Building 14
Site entrance from Church Street
3
3
P
P
P
Front Yard
GRAHAM HOPEDALE RD.
N

Phase 4

- Focus on the large North Plaza.
- Play up the Industrial character- cool industrial backdrop.
- Home for the arts.
- Recognition that this part of the site needs more cleaning and remediation.
- Ways to use larger scale spaces.

Artist / Maker Space:

The group of buildings to the northwest corner of the site are smaller than the large factory buildings but well suited to be artist and maker spaces. With access from a new service drive along the west side of the site, materials can be transported in and out easily and the large overhead door bays on these building help facilitate loading or just creating a connection with the smaller scaled adjacent outdoor spaces. Studios can extend outdoors with public

Public Sculpture Court:

While public art should be located throughout the Western Electric complex, a public sculpture court can be created in the elevated open space nestled between the artist studio buildings. This can be a space that is curated and allows both the artists in-residence and other visiting artists to have outdoor works displayed in a more intimate outdoor setting.

Public Gallery Space:

The quonset hut building is the visual centerpiece of the North Plaza and could become a public art gallery and event space feeding off of large plaza events and operated in partnership with the management of the artist/maker spaces.

Artist and maker space buildings (center and right) with Public Sculpture Courtyard areas.

Quonset hut Art Galleries at the west end of the North Plaza.

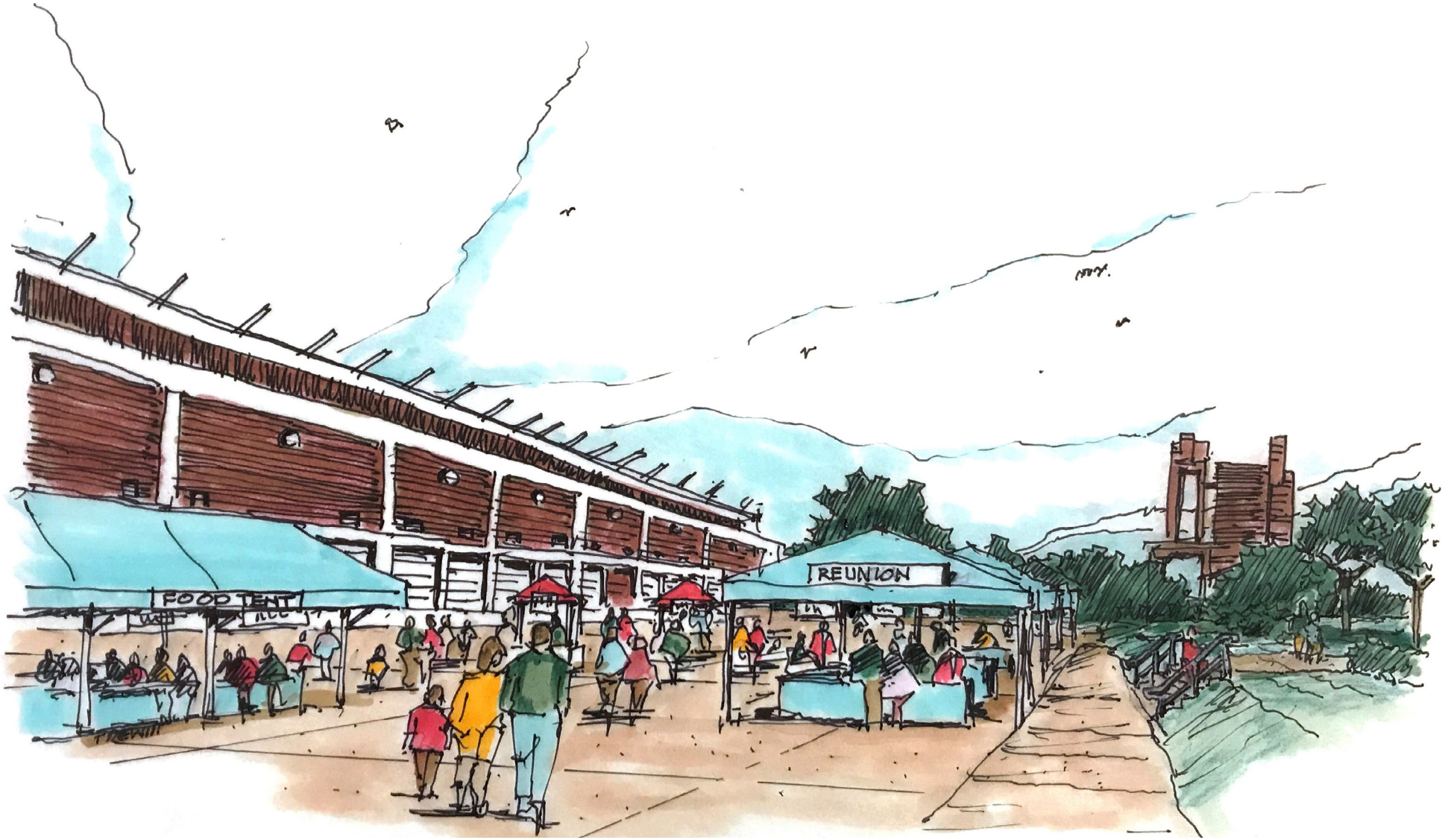
View looking down on the quonset hut from Nike-2's lower roof deck.

Interior view of Art Gallery space inside quonset hut .

View of the North Plaza looking across the plaza to the Nike-2 building.

View of the North Plaza looking east toward the Power Plant.

View of the North Plaza with remains of the water treatment building in the center.



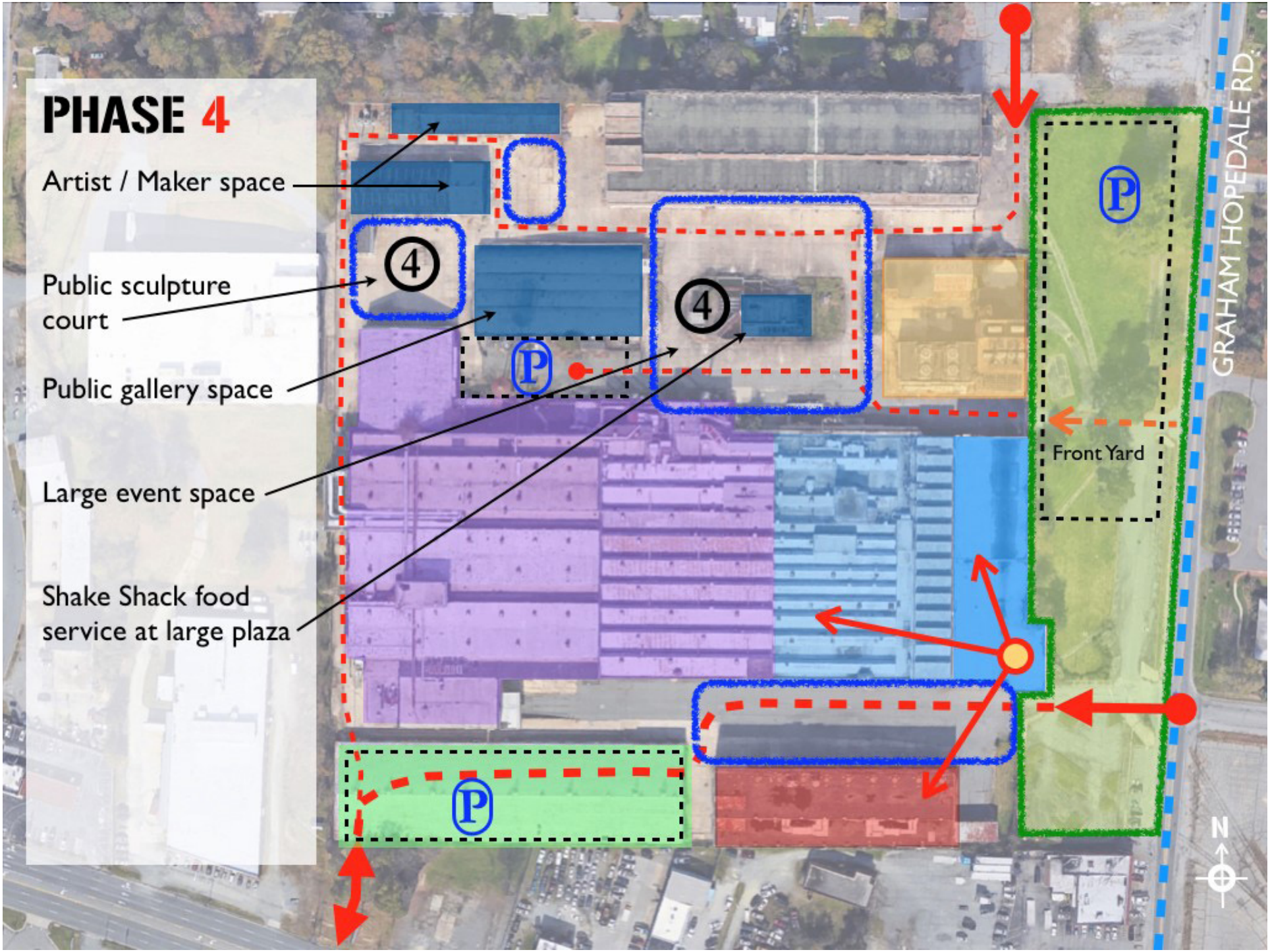
North Plaza during festival time with the Burlington Brewery (Power Plant) beyond.

The North Plaza - A Large Event Space

The large North Plaza has the potential to be a wonderful space for large events or outdoor concerts. The event infrastructure can be put in place to allow the plaza to be managed for smaller events using portions of the space or for large events using the entire outdoor space. It becomes the connector for the beer garden and brewery, sculpture court, art gallery, studios and recreation facilities. A creative approach to positioning food vendors can be planned, possibly focused on re-using the remaining central water treatment building. When not in use for events, the North Plaza provides service access and parking to the functions located around the Plaza.

"Shake Shack" Food Service at Large Plaza:

Once this place gets going, having a location for a vendor such as Shake Shack would both serve the working population on site and be part of a regional draw in partnership with the brewery.


PHASE 4
Artist / Maker space
Public sculpture court
Public gallery space
Large event space
Shake Shack food service at large plaza
4
4
P
P
P
Front Yard
GRAHAM HOPEDALE RD.
N

Phase 5

- Most complex due to size and scale.
- Doesn't need to happen any time soon.
- Larger partners needed, such as university, lab, philanthropist, etc.

Development of Nike-2:

The Nike-2 building is a large development that can either be broken up into smaller parcels or taken as a whole. Its construction is well suited to university or laboratory use but the ground floor, facing the North Plaza, could be broken up into smaller developments with loading or storefront access directly onto the plaza. Views from its two-level roof are tremendous and this space could be used for food service or extended special event space.

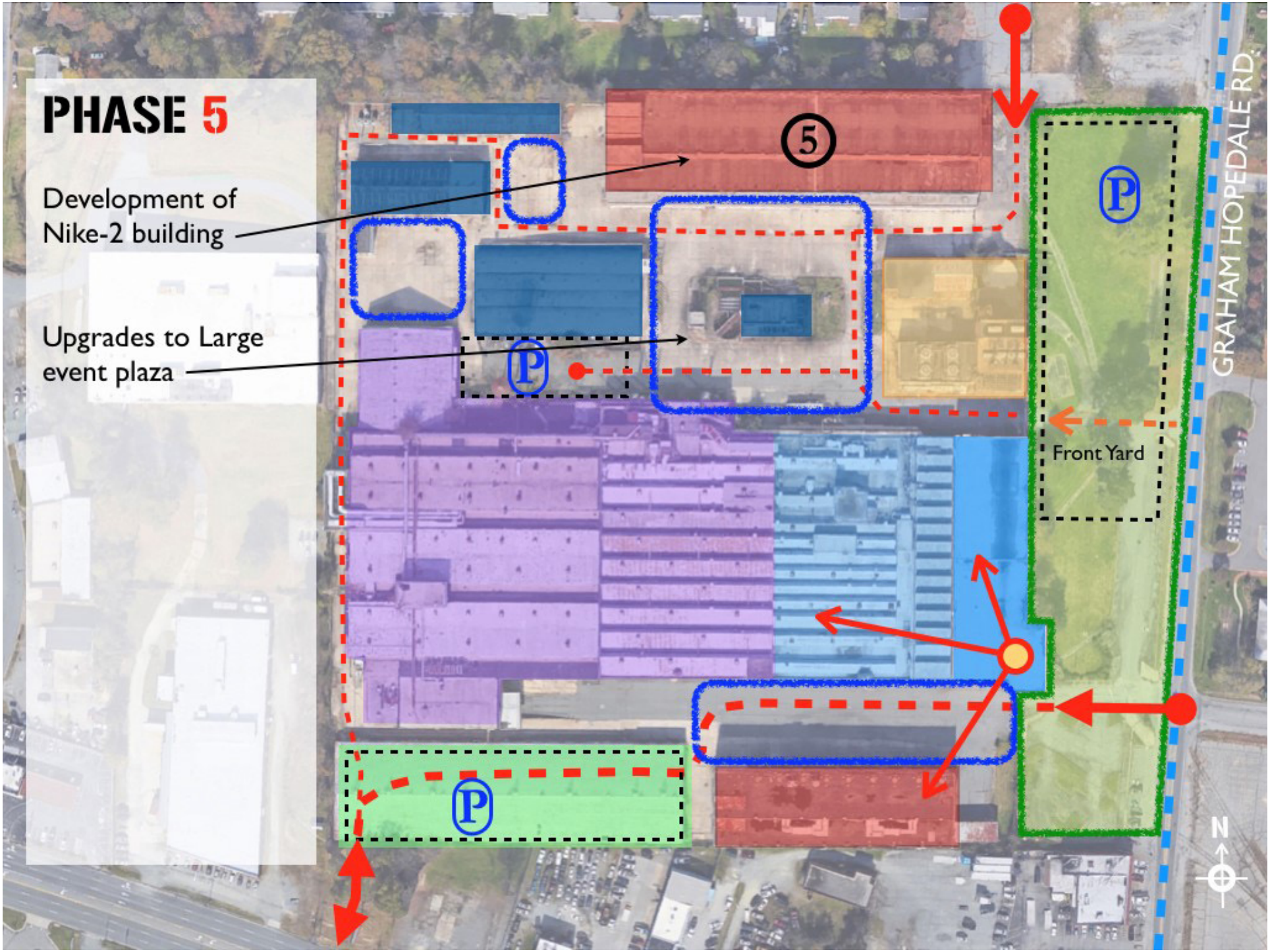
Nike-2 building.

Upgrades to the North Plaza:

As use of the North Plaza grows and a use for Nike-2 is defined, upgrades will need to be considered for the North Plaza to help with event planning and site access for all its tenants.

Nike-2 building's lower roof.

Nike-2 building's upper roof.


PHASE 5
Development of Nike-2 building
Upgrades to Large event plaza
5
P
P
P
Front Yard
GRAHAM HOPEDALE RD.
N

BIG PICTURE THINKING

The impact of the redevelopment of the Western Electric plant will change Burlington and help define the course for its future creating new local and regional opportunities for business, learning, wellness, recreation, and the arts.

Imagine that Western Electric has become part of the Greenway.

The Church Street corridor has been improved. People are coming from around the region to drink Burlington beer and enjoy a Saturday afternoon at the new "Burlington Center East" (the Western Electric plant will need a brand) to share an evening of live music with friends.

What About. . .

A New Transit Center?

A new transit center for this part of town could be located on Graham Hopedale just a half a block from the entrance to Burlington Center East. The site would be easy to develop, is connected to the greenway bike path and would provide overflow parking for large events in the North Plaza.

New Public Green Space at the Corner and along Graham Hopedale Rd.?

Developing the green space along Graham Hopedale Rd. all the way to the corner of Church Street will help create a new gateway at Church Street to this new regional draw. This green space can be used to create native plant, demonstration, and teaching gardens, connected by a trail to the Children's Museum, or connecting to the rail bed running through the South Plaza.

Front Yard Public Art?

The front yard can be used for ongoing public art all the way to the corner of Church Street.

A New Regional Sports Complex?

A new sports complex can be built on the site at the corner of Graham Hopedale Rd. and Church Streets that will become a regional draw and provide as many as 400 additional parking spaces for use by large events at Burlington Center East (Western Electric)

Complementary Outdoor Sports Events?

Events at the new sports complex can be coordinated with the indoor recreation center.

New Mixed Use Developments?

The project will be a catalyst for new mixed use developments along Church Street and in the surrounding neighborhoods continuing to bring new resources and vitality to east Burlington.

A Landmark Intersection?

Church and Graham Hopedale Rd. becomes a landmark intersection with the new sports complex and Burlington Center East (Western Electric) creating a new center for east Burlington.

Financing

There is obviously a high level of complexity involved in approaching the financing of the redevelopment of the Western Electric site. This kind of development requires sophisticated financing that combines as many contributing components from both public and private sources as possible in a package to make redevelopment feasible. The typical financing toolkit is finite and well-defined. It includes the following components:

Private Sources

- **Debt/Bank Lending.** Debt financing comes mainly from institutional investors. Private sources of debt financing can include, banks, credit unions, consumer finance companies, commercial finance companies, credit, insurance companies and leasing companies. Debt financing comes from two sources: selling bonds and borrowing from individuals, banks, and other financial institutions. Bonds can be secured by some form of collateral.

- **Developer Equity.** Projects that are significant in size and complexity often require equity partners. Most construction lenders today require 20-35% equity, so the developer often gains by having equity investors who help finance risk. It allows a developer to realize profit on their skills to move a project to fruition while lessening up-front risk.

Public Sources

- **Historic Tax Credits (Federal).** The Historic Tax Credit (HTC) program encourages private sector investment in the rehabilitation and re-use of historic buildings. The federal tax credit allows program participants to claim 20 percent of eligible rehabilitation expenses against their federal tax liability. It requires an 3-step process to qualify projects for tax credits and can be time consuming. However, through a limited partnership or limited liability company credits can be syndicated by matching private investors seeking investment returns with developers seeking cash for a qualified project. The credit is then used to generate private equity to help fund the construction of the project.

- **Historic Tax Credit (State).** North Carolina has a state historic tax credit program that mirrors the federal program. This is an unusually robust program relative to other states. The net result is that an approved project receives historic tax credits in the aggregate amount of 40 percent of a given project's eligible rehabilitation expenses—20 percent federal and 20 percent state. As with the federal credits, the state credits can be used by the developer themselves or, more likely, be syndicated and turned into project equity.

- **New Market Tax Credits.** The New Market Tax Credit (NMTC) program is specifically geared towards supporting community development and economic growth in distressed communities through the use of tax credits that attract private investment. It involves a highly complex process matching a project with investors and a special, qualified financial intermediary called a Community Development Entities (CDE). The downside to this financial tool is that it requires a lot of work to pull together a partnership and the majority of proposed projects are not awarded credits in the end. However, the NMTC can be a great tool if qualification requirements can be met. It typically generates $8 of private investment for every $1 of federal funding and credits can be converted into project equity at a discount to support redevelopment project costs.

- **Opportunity Zones.** Opportunity Zones are a new federal program whereby investors may re-invest their capital gains into special funds that are dedicated to state-designated areas in distressed communities. An investment vehicle called an Opportunity Fund is created as a partnership or corporation for investing in the eligible property. Under North Carolina's designations, Burlington has two potential Opportunity Zones. The SDAT team heard some interest in this new opportunity from local interests looking at the opportunity so it may provide another important tool to leverage capital for reinvestment.

- **Public Capital Funding.** Public capital funding can include a range of public investments that support redevelopment, most often in infrastructure that is required to support new development.

- **Grants.** There are a variety of federal and state grant opportunities that can support redevelopment efforts. For instance, the Community Development Block Grant (CDBG) is a federal program that provides a flexible range of funding to support community development needs. CDBG are run through a municipality in support of public priorities. In addition to grants coming from public funds, national and local foundations can serve as funding partners for redevelopment.

The Burlington Market: A Brief Analysis

The demand for new office and retail development is generally weak in Burlington. The broader Burlington market for office and retail is characterized by a lot of available space on the market, with current vacancy rates of over 10 percent. Properties in West Burlington typically command higher rents than the eastside of town where the market is particularly weak.

Using LoopNet as a source, office rents typically command between $8-14 per square foot for a modified gross lease. Much of the available inventory comprises relatively small spaces—i.e. under 5000sf—with larger spaces available in the core downtown area. Retail rents in the range of $5-12 per square foot for a triple net lease. While there are some available storefront sized spaces, much of the vacant inventory is located in under-performing shopping center. A market characterized by high vacancy and low rents is not typically attractive to development .

Given this marketplace, there are several key development considerations the team would recommend.

Development Considerations

Given the constraints of the Burlington market and the size, scale and complexity of the Western Electric site, the team recommends the following key considerations in pursuing redevelopment of the site:

Incremental & Phased Approach. The size of the site, the number of structures, and the uncertainties surrounding some of the structures and related considerations and concerns all contribute to the idea that this development strategy should be based upon incremental steps and a phased approach to the overall vision. There are several advantages to this approach.

- It allows for some experimentation and testing with early, small-scale projects on structures that might represent the easiest redevelopment opportunities while building momentum and investment interest for the larger, more ambitious projects over time.

- It also allows that portions of the site could be activated immediately or in the short term to begin contributing to the surrounding area sooner rather than later while more complex construction projects on more difficult aspects of the site can take the necessary time to develop.

Establishing a City Center as Unifying Program. Thinking about the site as a future city center is an effective unifying program for the site, allowing many different development ideas to be matched with market need and complement one another in a coordinated site strategy to maximize the value of the whole. Placemaking – seeing each development component's contribution to the vision of the collective site identity and future vision – will be key to ensuring the long-term redevelopment strategy succeeds.

Unlikely to be Led by Private Sector. Given the size, scale and complexity of the site as well as the market realities in Burlington, this redevelopment is unlikely to be led by private sector interests. It will require public-private partnerships that can draw upon many resources and the corresponding incentives and patient leadership from the public sector to bring sufficient investment to the table to bring the vision to fruition over time.

Multi-Layered Financing. Given the number of structures on site and their unique characteristics and challenges, a range of funding streams and mechanisms will be necessary to bring the needed resources to bear to finance this redevelopment strategy. The city should look at using as much of the development finance toolkit as possible and build partnerships that seek funding streams at the state and federal level as well. The goal should be to package as many financial vehicles as possible to bring maximum leverage to the reinvestment project.

Sophisticated Development Leadership. Given the prerequisites to a successful redevelopment package to move the site forward, it will require sophisticated development leadership that can bring many partners to the table, exercise patience, and package available resources most effectively to build momentum for change over time.

Development Scenarios

The Team ran a few informal development scenarios on proposed concepts for portions of the site as illustrative cases that demonstrate the feasibility of concepts offered for the Nike 1 building and in the large open bay factory spaces just behind the health and wellness center.. The Nike 1 concept focused on commercial office space and assumed 25% equity. The indoor recreation concept was focused on an indoor fitness space, fulfilling some of the community needs. It assumed a 50% equity. Both project models are for illustrative purposes only, but demonstrate that there are feasible development options on the site that support an incremental strategy for the future of the district.

General Notes on both examples:

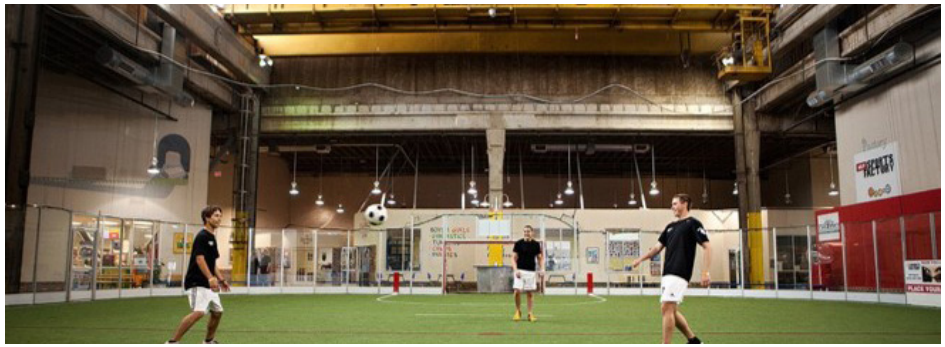
- Estimated construction costs are derived from industry benchmarks for the central NC marketplace.

- Soft Costs estimated at ~20% of total project cost. Certain types of financing vehicle (e.g. NMTC) will result in disproportionately higher soft costs esp. legal and financing.

- Team has a higher degree of confidence in the Nike-1 model than with the Indoor Fitness model.

NIKE-1							
	SF	50,000	$115/sf				
	Construction Cost		5,750,000				
	Soft Cost		1,610,000				
	Misc.		-				
	Total		7,360,000				
	Loan	75%	5,520,000		DS/year	(377,646)	
	Equity	25%	1,840,000		Misc Expenses/yr	-100,000	
	HTC		903,440				
	State Credit		846,975				
	Cash Equity		89,585				
	GRANT		-				
	Leaseable SF		42,500				
	Rent/SF	$11.5	Modified Gross				
	Annual Rent		$488,750			11,104	Cash Flow
						12.40%	ROE

Indoor Fitness							
	SF	100,000	$80				
	Construction Cost		8,000,000				
	Soft Cost		2,640,000				
	Misc.		-				
	Total		10,640,000				
	Loan	50%	5,320,000		DS/year	(363,963)	
	Equity	50%	5,320,000		Misc Expenses/yr		
	HTC		1,298,560				
	State Credit		1,298,560				
	Cash Equity		222,880				
	NMTC		2,000,000				
	GRANT		500,000				
	Leaseable SF		90,000				
		4.25	NNN				
			$ 382,500			18,537	Cash Flow
						8.32%	ROE



Community

What We Heard

Over the course of the SDAT, the team met with a broad range of officials, stakeholders, residents, and local organizations. Some of the key points we heard regarding the east side of Burlington and neighborhoods surrounding the Western Electric site are illustrated by the following key sentiments:

"We have to build the people before we build the buildings"

"Community development is more than just rehabilitating housing"

"We have no voice for this neighborhood"

"We do things really well as a community – just not in this part of town"

As a result of these conversations, the team believes that Burlington would benefit from some sustained investment and effort in its civic infrastructure and capacity beyond the investment in the physical infrastructure and built environment that may occur. In the same way that architects and engineers design physical infrastructure to meet physical and material needs, it's important to think about the architecture of your civic culture and community.

Recommendations

Many of our recommendations offered in this section are not site-specific, but reflect the larger context of Burlington's neighborhoods and community. We recommend the following actions be taken regardless of the future uses at the site:

- Re-orient public participation in Burlington.
- Expand participation, inclusion, and representation.
- Offer variety of engagement points.
- Engage people where they are and build trust and capacity.
- Move from client relationships to partner relationships.
- Create a Neighborhood-based infrastructure for engagement.
- Take Government to the people where possible.
- Build momentum with small steps.
- Take on some immediate actions that can help organize the whole community to partner on bigger tasks as the process moves forward.
- Use whatever happens at the site as an opportunity to advance the above goals.

Specific Tools

- Community Engagement Charters (short-term).
- Defined Civic processes (short-term).
- Expanded Youth Initiatives (short-term).
- Community Coalitions & Neighborhood Engagement Infrastructure (short-term).
- Neighborhood Resource Centers (medium-term).

Community Engagement Charters

Many municipalities are feeling increased pressure from citizens to have a greater role in decision-making. Civic frustration and trust issues are often the result of gaps between public expectations to be involved more meaningfully in decisions and the realities of local government. As a result, a number of jurisdictions are turning to community engagement charters to define a joint strategy and mutual expectations in a community. Burlington, Canada provides one example of the use of community engagement charters. As they note, their charter's "overarching objective is to enhance communications and access to information for citizens, and to facilitate and enable meaningful engagement." The stated mission is " to provide Burlington citizens, members of City Council and City staff a plain language, living policy document that guides and promotes active and meaningful citizen engagement in the City of Burlington's planning, policy-setting and decision-making processes." The Charter was formed over a year-long engagement process with the community and spells out the city's commitments to its citizens and the residents roles and responsibilities in that process.

Defined Civic Processes

Regardless of whether or not they create a formal charter, some jurisdictions are launching major community engagement efforts to co-design how citizens should be involved in influencing future public decisions. Alexandria, VA provides one such example.

Following some heated development conflicts on its waterfront, the City of Alexandria underwent an innovative process to design how it should engage citizens in decision-making in the future. From 2012-2013, the city conducted a community

engagement process aimed at strengthening the relationship between municipal government and residents. It included a series of citywide meetings and online engagement focused on building a process people could support and trust. As they reported, "the focus of the process asked residents to envision and design the ideal process through which the City should engage citizens in decision-making." The outcomes of the What's Next Alexandria process resulted in three key elements:

- Principles for civic engagement.
- Standard Framework for civic engagement.
- Tools and Strategies for communications and engagement.

Together, these important pieces make up Alexandria's Civic Engagement Handbook, which serves as a guide for public decision-making processes in the city.

The city included the following additional goals as it moves forward with improving citizen engagement, including aspirations to enhance the following:

- Understanding about how to participate in public decision-making in Alexandria.
- Knowledge about planning and development in Alexandria.
- Skills to participate in civic engagement processes in a meaningful way.
- Participation to include a broad representation of our diverse city.
- Solutions for cooperative, productive, and sustainable public decision-making.

Moving Residents From Clients to Partners in Community-Building

During the last 25 years, there has been a growing movement across local governments to shift their public orientation from one of serving constituents or clients to that of serving as effective partners with citizens in achieving successful community outcomes. In similar fashion, public expectations have been growing for more meaningful involvement in the public decision-making and public work of their communities. This movement is changing how community engagement and public work occur. Changes in commuting patterns and mobility, work patterns, and related lifestyle changes are also impacting when and how people are available to participate in the life of their community. Burlington's recent creation of an office of community engagement demonstrates that local government wants to be proactive in forward-looking in working with citizens on key issues in town. The team has several recommendations and tools to help expand this work.

Expanded Youth Initiative

During the process, the team heard that opportunities for youth in the community are limited, and there are issues with neighborhood crime in some areas as a result. The team also heard about some great new initiatives like the youth solutions program that are developing with key agencies. The team believes this important work should be expanded to integrate youth voices into future plans and identify opportunities for youth development that lead to successful neighborhood outcomes. There are many models that Burlington can draw upon for this work, but the important element is to involve youth directly in the dialogue about what's important to them and what their needs and aspirations are.

Example: Hampton, VA

Through its Youth Civic Engagement Initiative, the city of Hampton was recognized with a national award in 2005. According to the city, the initiative "turns the notion of youth as consumers of public services on its head, and instead empowers young people as leaders in their schools, neighborhoods, and city government." Hampton employed a comprehensive approach to youth engagement, involving them as advisors for a Neighborhood Youth Advisory Board, Citizens' Unity Commission, Teen Advisory Groups for Parks and Recreation, the Superintendent's Advisory Group, and secondary school advisory teams. Hampton even had Youth Planners in their Planning Department. They also had a 24-member Youth Commission, and involved young people on other appointed boards and commissions throughout the city. The City developed three "pathways of opportunities for youth" to become involved in the community. The first revolved around Service, and included hundreds of short term opportunities and projects. The second was framed around Influence, and involved 300 youth annually in advisory groups to key agencies in the city. The third was centered around Shared Leadership, and included serving as voting members on public boards and committees with adults, running their own grant program, and having responsibility for their own component of the city plan. Having youth directly involved changed the civic culture in Hampton and resulted in significant public savings across government as well as increased participation and more successful neighborhood outcomes.

Example: Del Ray Beach, FL

In the 1980s, Del Ray Beach faced issues involving youth crime, gangs, and for a time led the nation in stolen vehicles per-capita. In response, a police officer rallied the community to create the Youth Automotive Training Center (YATC), and trained at-risk kids in automotive repair, academic remediation, job training and life management skills. The police reported the crime subsequently dropped by 60 percent in the neighborhoods where kids had enrolled. An evaluation of the program's success years later revealed astonishing results regarding graduation rates, civic involvement, and employment levels for the youth that had participated in the program. The city won an All-America City Award for its work in this area.

Building a Neighborhood-Based Engagement Infrastructure

Like many jurisdictions in America, Burlington has wide disparities across neighborhoods. It is inaccurate to speak of a citywide condition, because your reality can be starkly different depending upon the exact neighborhood you reside in. This is symptomatic of a national phenomenon regarding neighborhood inequality in America. In communities across the country, there is observable and significant disparity between neighborhoods of concentrated advantage and those of concentrated disadvantage. This dynamic not only pertains to stark disparities in income and wealth but relates to a host of measurable data points on access to transportation, housing, health outcomes, education, and other key data points. Therefore, applying a citywide strategy to complex differences across neighborhoods is often inefficient and misplaced because residents are living totally different realities depending on neighborhood geography. For instance, during the process it was reported that residents in east side neighborhoods have life expectancies that are 11 years shorter than residents in West Burlington. This data point speaks to larger, fundamentally different realities that residents experience which is dependent on their specific neighborhood geography. Therefore, differing approaches are required to meet varied needs across neighborhoods.

Neighborhoods with higher levels of disadvantage and higher poverty rates often present additional issues when it comes to community engagement. For instance, many of their residents are forced to work in multiple jobs and are not available at the typical times when public meetings might be scheduled. Issues with access to transportation, language and translation, and childcare can present further obstacles. As a result, participation rates from these neighborhoods are often markedly lower without additional engagement opportunities that are customized to overcome these obstacles. When these residents are not able to have a voice in the process, decisions can leave their needs unaddressed, leading to distrust and resentment and fueling a cycle of disengagement. Therefore, they require engagement opportunities that take into account their obstacles to meaningful participation. During the process, the team heard from some local agencies that they've held events and had no one show up – a strong indicator that there are several barriers to participation and trust currently. The team also heard that there is communication and coordination among non-profit organizations and faith-based institutions, but that it doesn't always reach far enough to identify organizations closest to resident populations that include potential clients.

Part of the answer in engaging hard-to-reach populations lies in building a neighborhood engagement infrastructure that includes neighborhood leaders who can help inform engagement techniques, participate in direct outreach to their fellow citizens, and identify both obstacles and creative solutions that help bring more people into the process – leading to more informed decisions and better outcomes. This is often accomplished through the creation of neighborhood council systems or coalitions of neighborhood associations and related groups. The key component is in developing relationships in the neighborhood that can answer questions about how residents want to be engaged, when they want to be engaged, and where they want to access engagement. The second part of the answer often lies in moving engagement and services closer to residents who face such barriers. One of the existing best practice models around this approach is in creating Neighborhood Resource Centers – physical spaces located in a neighborhood that bring together public and non-profit services and provide meeting space for community use. These Centers are often purchased or leased by local government (often with CDBG or grant funding) and serve as a place to integrate non-profit services, community policing, youth development, and related programming. During the process, the team heard from local non-profit agencies that having a Neighborhood Resource Center would be a great asset to them both in reaching needy populations and in enhancing collaboration and partnership across the local non-profit sector. We believe it is an idea worth considering, and potentially could be one use that would be appropriate at the future Western Electric site or in its vicinity. These Centers often house a range of services, including workforce development, small business assistance, language classes, homeownership and youth development programming. Local jurisdictions are also experimenting with on-the-street engagement techniques to meet residents on their terms rather than be dependent on residents attending meetings. Vancouver uses pop-up city halls as a programmatic engagement technique, for instance. Many jurisdictions are also partnering with neighborhood non-profits to engage hard-to-reach populations more effectively and build trust.

Leverage the Work at Western Electric to Build Community

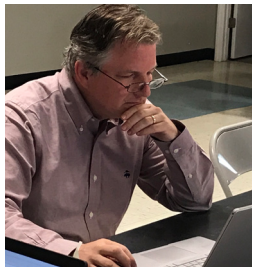
During this process, residents were invited to visit the Western Electric site and walk part of it as well as tour multiple buildings. The current conditions on the site are not ideal, as it has sat derelict for over 3 decades now. However, the powerful history of the site, its role in the community and people's attachment to the meaning embedded in this place was compelling nonetheless. Over 150 residents turned out to participate. Many said they'd been drawn to the drama of the unique industrial buildings and structures, or the history of the plant itself. The city had a tent, refreshments and audio set up to run workshops and lead tours. This experience underscores the opportunity in the immediate interim to activate the site and continue to fuel creative thinking about it by programming the public realm and select structures with temporary or seasonal offerings that draw the community together in a unique place which represents important history here. There are myriad examples from across the country that illustrate how other jurisdictions have taken advantage of unique industrial settings to create public places which become sensations.

Temporary installations do not need to be complex, expensive enterprises. For instance, in Christchurch, New Zealand the community came together after a major earthquake destroyed buildings and create gaps in their streets to build the Pallet Pavilion. The Pallet Pavilion is a pocket park built out of warehouse pallets that hosts regular programming such as concerts and other entertainment. With some resources and design, creative placemaking efforts can become sensational public

draws. In Philadelphia, the city partnered with Groundswell design to engage in creative placemaking on their industrial waterfront. They designed seasonal pop-up parks that have become regular seasonal events now due to their success. The Winterfest park includes a parking lot that is transformed into a winter skating rink, a pavilion that sells food and beverage, shipping containers that are programmed with local holiday retail, fire pits and gathering areas, lighting and other elements that create a unique and festive setting. In the summer, Spruce Street Harbor Park comes alive with 10,000 neon lights hung from trees, dozens of hammocks, shipping containers that house restaurants, bars, and game rooms, and other elements. The park had 12,000 people visit in its opening weekend, and continues to draw residents and visitors during its season. Other localities have installed permanent amenities of this type. For instance, in Toronto, a parking deck on the industrial waterfront was transformed into Sugar Beach. Sand was brought in to create a beach and iconic pink umbrellas were installed to with landscaping and other elements to create a unique place in the city that draws huge crowds even in the winter now. In Auckland, New Zealand, a large industrial site was transformed into Silo Park with a greenspace and event space. Films are projected on the silos, which also serve as unique gallery spaces inside. In Bethlehem, Pennsylvania, a major steel factory becomes the dramatic backdrop for concert venues with an amphitheater and greenspace. The industrial character contributes to a public space unlike any other, leveraging its qualities to create value. The team feels that temporary or seasonal programming in the public realm or select buildings in the early stages of the process will help stimulate interest in investment and creative thinking about the future of the place while drawing in a diverse public that Burlington might not always draw to its downtown. It can also help change perceptions about the surrounding area and open up new opportunities for investment in the neighborhood and surrounding area.

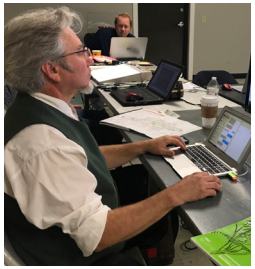
Why not celebrate the site's heritage while also engaging the community with temporary art installations?

Team Roster



Tom Liebel, FAIA - Team Leader

As one of the first 25 LEED Accredited Professionals in the country, Tom Liebel, FAIA, LEED Fellow has been involved in integrating sustainable design principles into a variety of ground-breaking adaptive use and historic preservation projects over the past twenty years. Projects Tom has worked on have received multiple local, state and national awards for design, smart growth, sustainable design and historic preservation. Author, critic and mentor, Tom has consulted on green projects nationally and internationally and has recently authored a chapter on sustainable design for the National Trust for Historic Preservation's Main Street Program publication, Revitalizing Main Street: A Practitioner's Guide to Comprehensive Commercial District Revitalization, as well as Industrial Baltimore, an illustrated history of Baltimore's industrial legacy. Tom currently serves as chair of Baltimore City's Commission on Historical and Architectural Preservation (CHAP) and previously was chair of the Maryland Green Building Council.

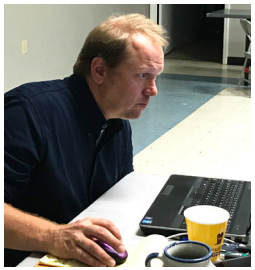


Terry Ammons, AIA – Petersburg, VA

Terry Ammons, the Principal of StudioAmmons, is a 1987 architectural graduate of Virginia Tech and has worked for over 28 years in the architecture and museum fields working on museums throughout the U.S. and Europe. His recent interpretive designs at Sailor's Creek Battlefield and several Virginia state parks have won plaudits across the state. He also provided award winning restoration and exhibit design for the recently completed Robert Russa Moton Museum, the national center for the study of Civil Rights in Education and has recently provided planning and design services to such nationally recognized museums as Wyoming's National Museum of Wildlife Art and the Chrysler Museum in Norfolk, Virginia.

Terry DeWitt, AIA, ASAI –Memphis, TN

Terry DeWitt is a retired architect in Memphis, Tennessee. Before his retirement he was principal at Hnedak Bobo Group in Memphis. He established his Architectural Rendering practice in 2003. He brings 25 years of product design experience in the metal building industry and 20 years as an architect as well as being an accomplished illustrator and artist. Terry is a 1982 graduate of the University of Memphis Architectural Technology program and studied at the Universities of Illinois and Kansas. He is a long time member of AIA and ASAI. Terry brings experience working as the project manager for the renovation and redesign of the Memphis Main Street Mall and other large and small projects which included research, planning, meeting with civic groups, retailers, and communication with multiple disciplines during design and construction. Terry has used his illustration experience in design charrettes and planning studies including working with architectural firms in Florida in the communities of Sarasota and Cape Coral, as well as a planning study in Lebanon, Tennessee. Terry has been an active participant in AIA since 1978 serving as President of the Memphis Chapter of AIA in 1992 and President of AIA Tennessee in 1999.



Chris Harrell – Louisville, KY

Chris Harrell is one of the Team Leaders on the US EPA Brownfields Community Benefits Assessment Project with the University of Louisville's Center for Environmental Policy and Management (CEPM). Harrell is also the Founder and Principal of Lazarus Group LLC, a firm engaged in crafting redevelopment strategies for distressed properties, corridors, and communities. In 2013 Harrell joined three other concerned citizens to found the Civic Data Alliance, an advocacy and action group of volunteers devoted to freeing public data, and using open data for the public good. From April 2004 until August, 2011 Harrell managed distressed property redevelopment efforts as Brownfield Redevelopment Coordinator for the City of Indianapolis' Department of Metropolitan Development. Harrell's educational background includes graduate degrees in both law and public policy. Harrell received his JD and MPA from Indiana University – Bloomington, and his AB from Wabash College. Along with his background in the public sector with the City of Indianapolis, Harrell has also worked for the Slovene Ministry of Finance in Ljubljana, and the Planning Department for the City of Bloomington, Indiana. Harrell's previous private sector experience included managing projects at two environmental consulting firms in Louisville, KY. Recent areas of special focus include: historic preservation of distressed properties through market rate redevelopment; linking comprehensive community development efforts and sustainability in urban core communities; creating mobile device based applications for collecting, analyzing and mapping hyper-local data in community-wide efforts; using data to clarify priorities for community economic development initiatives; and driving towards "Safer Soils" protocols for urban infill lots and brownfields for reuse in urban farming efforts.

Dominic Wiker – Baltimore, MD

Dominic Wiker is real estate development professional with over 15 years of experience in managing large-scale urban development projects. As the Vice President and Director of Development for the Baltimore based Washington Place Equities (WPE), Dominic is responsible for overseeing the company's development activities. In recent years he oversaw the development of highly successful multifamily projects such as 520 Park, 500 Park and the Fox Building along with the locally groundbreaking Mount Vernon Marketplace artisanal food hall. As WPE's footprint grows, Dominic is

currently managing mixed-use projects in Lancaster, PA and Wilmington, DE. Prior to working with the WPE, he managed the development of McHenry Row, a $150 million mixed-use project in Baltimore's Locust Point neighborhood and was a Senior Development Director with Struever Bros. Eccles & Rouse overseeing such urban in-fill, mixed use projects as 1209 North Charles, Village Lofts and Johns Hopkins' $80 million Charles Commons. Dominic received a Bachelor's degree from Johns Hopkins University and a Master's degree in urban policy and planning from Carnegie Mellon University's H. John Heinz School. Dominic and his family live in the historic Baltimore neighborhood of Federal Hill.

Joel Mills

Joel Mills is Senior Director of the American Institute of Architects' Center for Communities by Design. The Center is a leading provider of pro bono technical assistance and democratic design for community success. Its programs have catalyzed billions of dollars in sustainable development across the country, helping to create some of the most vibrant places in America today. The Center's design assistance process has been recognized with numerous awards and has been replicated and adapted across the world. Joel's 24-year career has been focused on strengthening civic capacity and civic institutions around the world. This work has helped millions of people participate in democratic processes, visioning efforts, and community planning initiatives across four continents. In the United States, Joel has worked with over 100 communities, leading participatory processes that facilitated community-generated strategies for success. His past work has been featured in over 1,000 media stories, including ABC World News Tonight, Nightline, CNN, The Next American City, The National Civic Review, The Washington Post, and dozens of other sources. He has served on numerous expert working groups, boards, juries, and panels focused on civic discourse and participation, sustainability, and design. He has also spoken at dozens of national and international conferences and events, including the Remaking Cities Congress, the World Eco-City Summit, the Global Democracy Conference, the National Conference on Citizenship, and many others.

Erin Simmons

Erin Simmons is the Senior Director of Design Assistance at the Center for Communities by Design at the American Institute of Architects in Washington, DC. The Center is a leading provider of pro bono technical assistance and participatory planning for community revitalization. Through its design assistance programs, the AIA has worked in over 250 communities across 47 states, and has been the recipient of numerous awards including "Organization of the Year" by the International Association for Public Participation (IAP2) and the "Outstanding Program Award" from the Community Development Society. Erin is a leading practitioner of the design assistance process, providing expertise, facilitation, and support for the Center's Sustainable Design Assistance Team (SDAT) and Regional and Urban Design Assistance Team (R/UDAT) programs. In this capacity, she works with AIA components, members, partner organizations and community leaders to provide technical design assistance to communities across the country. Her portfolio includes work in over 100 communities across the United States. A frequent lecturer on the subject of creating livable communities and sustainability, Erin contributed to the publication "Assessing Sustainability: A guide for Local Governments". Prior to joining the AIA, Erin worked as historic preservationist and architectural historian for an environmental and engineering firm, where she practiced preservation planning, created historic district design guidelines and zoning ordinances, and conducted historic resource surveys. She holds a Bachelor of Arts degree in History from Florida State University and a Master's degree in Historic Preservation from the University of Georgia.

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The SDAT team would like to thank the citizens of Burlington for their hospitality and participation in this project. We would like to offer particular thanks to Economic Development Director Peter Bishop, Mayor Ian Baltutis and City Manager Hardin Walkins for their leadership in bringing the community together and facilitating our efforts. The City Staff put a remarkable amount of energy and time into ensuring the success of the process, and the team sincerely thanks them for their efforts. We would like to also acknowledge the contributions of the following groups:

- Burlington City Council
- City Residents
- Western Electric SDAT Steering Committee
- Western Electric SDAT Process Participants (stakeholders/ focus groups)
- Alamance-Burlington School System
- Central Park Burlington LLC (Owner)
- Infinito Real Estate Group
- Alamance Chamber Foundation Board
- UNCG MPA Student Volunteers

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