THE CITY OF NEW YORK
OFFICE OF THE MAYOR
NEW YORK, N.Y. 10007

TECHNICAL MEMORANDUM

CEQR Number 03DME016K: Downtown Brooklyn Development Project – TM004[1]
BAM South Development (a.k.a. Site EE)
September 22, 2009

I. INTRODUCTION

The purpose of this Technical Memorandum is to determine whether the proposed changes to the previously approved Downtown Brooklyn Development project would result in any significant adverse environmental impacts that were not previously identified, either in the April 2004 *Downtown Brooklyn Development Final Environmental Impact Statement* (FEIS) or in the Technical Memorandum for BAM South issued on July 14, 2008, as appropriate.

The program originally analyzed for Site EE in the 2004 FEIS was for 140,000 zsf of community facility space (Visual and Performing Arts Library), 40,000 zsf of cultural space (theater), 15,000 zsf of retail, and a 466-space public parking facility below grade. The program and building envelope currently being proposed for Site EE (Block 2110, Lot 3) are different from the projected development analyzed for that site in the FEIS. Differences include a change in use from the community facility, cultural and local retail uses analyzed in the FEIS to a mixed-use building with residential, retail, cinema and other cultural uses. In addition, the proposed building would have a maximum height of approximately 385 feet (30 stories plus mechanical penthouse), compared to the 6-story structure assumed in the FEIS. Whereas the project analyzed in the 2004 FEIS included a 466-space public parking garage on the site, the proposed building would include a 365-space below-grade garage. A detailed description of the proposed development, which is expected to be completed by the analysis year of 2013, is provided in Section II below.

This memorandum provides a description of the proposed modifications, as well as a detailed evaluation of the new incremental changes generated by the proposed modifications to the BAM South development, and assesses the resulting effects on the previous environmental analyses presented in the 2004 FEIS, or, where applicable, the 2008 Technical Memorandum. The potential impacts of the modifications on each of the technical areas identified in the *CEQR Technical Manual* are discussed below. The memorandum uses City Environmental Quality Review (CEQR) guidelines and thresholds to determine whether the proposed changes would result in significant adverse environmental impacts not already identified in either the 2008 Technical Memorandum or 2004 FEIS.

[1] This Technical Memorandum was prepared by Philip Habib & Associates, for Two Trees Management Corp.

As described in the New York State Department of Environmental Conservation's SEQRA regulations, 6 NYCRR Sections 617.9(a)(7)(i)(a), (b), and (c), and the 2001 *CEQR Technical Manual*, the lead agency may require the preparation of a supplemental EIS if there are significant adverse environmental impacts not addressed or inadequately addressed in the EIS that arise from changes proposed for the project, or newly discovered information; or a change in circumstances related to the project. This technical memorandum concludes that there would be no additional significant adverse impacts in any of the analyzed CEQR technical areas as a result of the modified development planned for this site.

II. PROJECT DESCRIPTION

2004 Project – Downtown Brooklyn Development

The Downtown Brooklyn Development project was a public planning effort to create opportunities for stimulating and integrating commercial, academic, cultural, and residential development in the Downtown Brooklyn area. The 2004 project required a number of discretionary actions that were subject to environmental review pursuant to CEQR. These actions included:

- Zoning map amendments and text changes to the Special Downtown Brooklyn District;
- Mapping actions to demap certain streets and widen others;
- Amendments to the Brooklyn Center Urban Renewal Plan, MetroTech Urban Renewal Plan, and Atlantic Terminal Urban Renewal Plan;
- Modification of the MetroTech General Large-Scale Development Special Permit;
- Disposition of City-owned property pursuant to urban renewal, including Block 2110, Lot 3;
- Site selection for a public library (Site EE); and
- Special permits for public parking facilities (including one on Site EE).

These actions were projected to stimulate approximately 6.7 million square feet of new development, including 4.6 million square feet of office space, 979,000 square feet of residential use (approximately 979 units), 844,000 square feet of retail, and 260,000 square feet of community facility and cultural space. The 2004 project also included provisions for approximately 1,617 public parking spaces, as well as new public open spaces at several locations.

The New York City Office of the Deputy Mayor for Economic Development and Rebuilding (ODMEDR) served as the CEQR lead agency for the project's environmental review. A draft scope of work for the EIS was presented at a public scoping meeting held on May 20, 2003, and a final scope was issued on November 3, 2003 that incorporated relevant public comments. A Draft Environmental Impact Statement (DEIS) for the project was prepared, and the Notice of Completion for the DEIS was issued and the DEIS was certified and distributed on November 28, 2003. Subsequent to issuance of the Notice of Completion for the DEIS, it was determined that a Draft Supplemental Environmental Impact Statement (DSEIS) should be prepared to account for a potential major mixed-use development in the Atlantic Terminal area – referred to as the Atlantic Yards Arena and Redevelopment project (with Empire State Development Corporation as the lead agency) – in the future baseline condition. A Positive Declaration and

notice of intent to prepare a DSEIS was issued on January 22, 2004, distributed, published and filed. A public meeting on the Draft Scope of Work for the DSEIS was held on February 23, 2004, and the Final Scope of Work for the DSEIS was issued on March 5, 2004. A joint public hearing was held on the DEIS and the DSEIS on March 24, 2004, in conjunction with the public hearing on the related Uniform Land Use Review Procedure (ULURP) applications. The Final Environmental Impact Statement (FEIS), incorporating the Final Supplemental Environmental Impact Statement, was completed, and a Notice of Completion for the FEIS was issued on April 30, 2004.

2004 Project – Project Site (Projected Development Site EE)

Although the actions proposed as part of the 2004 project affected the entire Downtown Brooklyn project area, the EIS analysis of changes to allowable use and bulk and other land use provisions was focused on those sites that were reasonably likely to undergo development within the foreseeable 10-year timeframe (by 2013). These sites were identified as "projected development sites." The current BAM South project site was analyzed as projected development site EE in the 2004 FEIS.

The BAM South project site is bounded by Flatbush and Lafayette Avenues, Ashland and Hanson Places, is across Ashland Place from the Brooklyn Academy of Music (BAM) Opera House, and is in a C6-1 zoning district within the Special Downtown Brooklyn District. The project site is identified as Block 2110, Lot 3, and is located within the Atlantic Terminal Urban Renewal Area in Downtown Brooklyn (Urban Renewal Site 20). As part of the 2004 project approvals, the amendment to the Atlantic Terminal Urban Renewal Plan revised the 'Commercial' land use designation on this site to allow community facilities and below-grade parking, and changed the FAR restriction to that permitted pursuant to zoning. As part of the 2004 project, this site was also the subject of an application for site selection for a new public library for the performing arts (C040185 PSK), as well as an application for a Special Permit for a below-grade public parking garage with 466 spaces (C040183 ZSK).

The reasonable worst case development scenario (RWCDS) program analyzed in the 2004 FEIS for this site consisted of 140,000 zsf of community facility space (Visual and Performing Arts Library), 40,000 zsf of cultural space (theater), 15,000 zsf of retail, and a 466-space public parking facility below grade (refer to Table 1). At the time, construction of a new six-story, public library for the performing arts, to be operated by the Brooklyn Public Library, was proposed. The new library would house reading rooms, archives, galleries, media labs, a 300-seat auditorium, a 99-seat performance space and a 24/7 multimedia lounge. The library would occupy the southern portion of the lot, with the northern portion of the lot developed separately as a performing arts building.

2008 Modified Project

As the Brooklyn Public Library advised the City in 2008 that it no longer intended to pursue previous plans to develop a 140,000 square foot Visual and Performing Arts Library on the site, the City began considering disposition of the site to a private developer, Two Trees Management Corp. In July 2008, Two Trees proposed constructing a new mixed-use building – including a neighborhood branch library – on the southern portion of the block, with essentially the same footprint as the previous project, but with some changes in height as well as proposed uses.

Several actions were planned in order to obtain the proposed mix of uses on the site, including an action to modify the Special Downtown Brooklyn District and/or other zoning actions, as well as to demap an unbuilt widening of Flatbush Avenue and to preserve an easement for New York City Department of Transportation use.

The previously planned 2008 development included a total of approximately 374,864 zsf of development, and comprised new residential floor area (190 units) as well as a new hotel use (approximately 125,928 zsf, 220 rooms). As shown in Table 1 below, the program also included a 15,000 zsf cinema (with approximately 600 seats), a small, approximately 15,000 zsf neighborhood branch library, approximately 12,681 zsf of retail use, and 20,000 zsf of space to be dedicated for miscellaneous cultural uses (art organizations, office, studio space, etc.). The 2008 program also included a public parking garage with 450 spaces, 16 fewer spaces than what was analyzed in the 2004 FEIS. In addition, the 2008 program for Site EE included an approximately 25,590 sf public plaza on the northern portion of the block, which was not included in the 2004 FEIS.

The structure analyzed in the 2008 Technical Memorandum would have risen to a maximum height of approximately 495 feet, with a triangular shape reflecting the shape of the site (see Figure 1). The lower floors of the building would have included the cinema, cultural and retail uses, while floors 5 through 12 were dedicated to the proposed hotel, with 24 floors of residential use above (floors 13 through 36).

A Technical Memorandum for the 2008 project was prepared and issued by the Office of the Deputy Mayor for Economic Development, the lead agency, on July 14, 2008. The 2008 Technical Memorandum assessed the environmental effects of the 2008 planned development, and concluded that those changes to the program for development on Site EE would not result in any significant adverse environmental impacts that were not identified in the 2004 FEIS.

Current Project

The development currently planned for the project site would require a number of discretionary actions that were not considered in the 2004 FEIS, including:

- Zoning Map Amendment
  An amendment of the City's zoning map is being proposed for the subject block bounded by Lafayette Avenue, Flatbush Avenue, and Ashland Place (Brooklyn Block 2110), changing the zoning from C6-1 to C6-2, as illustrated in Figure 2. Under this proposed rezoning, the zoning map change would expand the existing C6-2 district to the west of the project site one block to the east, thereby covering the project site in its entirety. The proposed rezoning from C6-1 to C6-2 would not increase the maximum allowable floor area ratio (FAR) for commercial uses, which would remain at 6.0 FAR with the proposed rezoning. Similarly, the maximum allowable FAR for community facility uses or mixed-use buildings would remain unchanged, at 6.5 FAR. However, the maximum allowable FAR for residential uses would increase from 3.44 under the current C6-1 zoning to 6.02 with the proposed C6-2 zoning.

- Zoning Text Amendment
  A zoning text amendment of the Special Downtown Brooklyn District (Article X, Chapter 1 of the NYC Zoning Resolution) to facilitate the BAM South project that would allow additional floor area for cultural uses, allow waivers from the street wall requirements along Flatbush Avenue, allow height and setback waivers, allow waivers from the Ground Floor Use regulations related to lobby frontages and entryways and allow waivers of the underlying signage regulations related to number, size and location, all under specified conditions through a zoning authorization by the New York City Planning Commission.

- Zoning Authorization
  A Zoning Authorization pursuant to the zoning section described above to facilitate the BAM South project.

- A Major Modification of a Special Permit for a Public Parking Garage
  A modification of a special permit (C040183 ZSK) issued in 2004 pursuant to Zoning Resolution Section 74-52 to allow a 466 space below grade Public Parking garage located on Block 2110, Lot 3 in the Borough of Brooklyn, to modify the location of the allowed public parking garage area without increasing the capacity of the garage.

- Disposition Approval
  Mayoral approval of the disposition of City-owned property located at Block 2110, Lot 3 in Brooklyn Community District 2 pursuant to Section 1802(6)(j) of the New York City Charter.

- Acquisition of Real Property
  An acquisition of real property approval would allow the City to acquire two portions of this project after it is constructed for public purposes. An approximately 50,000 sf space within the building would be acquired to be used for cultural purposes. In addition an approximately 10,000 sf street-level plaza would be acquired for public use and access to the cultural uses within the building.

Possible future actions on the project site may include financing from the NYC Housing Development Corporation (NYCHDC) for the residential component of the proposed development.

Proposed Program

Two Trees is proposing to construct a new mixed-use building on the southern portion of the block, with essentially the same footprint as the previous project evaluated in the 2008 Technical Memorandum, but with some changes in height as well as proposed uses.

Table 1 below shows the changes in the project program compared to the program for Site EE analyzed in the 2004 FEIS; the program in the 2008 Technical Memorandum is also provided for reference. As shown in the table, the proposed modified development would include a total of approximately 347,786 zsf of development, compared to approximately 195,000 zsf analyzed for Site EE in the 2004 FEIS. As shown in Table 1, the proposed modified development would reduce the amount of cultural and community facility floor area on the site by approximately

131,500 zsf compared to the 2004 plan, and would introduce new residential floor area. Up to a maximum of 400 rental units are conservatively assumed for environmental analysis purposes, of which approximately 20%, or up to 80 units, are assumed to be affordable.

TABLE 1
Site EE Program – 2004 FEIS and 2008 Programs Vs. 2009 Proposed Modified Development

Land Use	Development Program Analyzed for Projected Development Site EE in FEIS (ZSF)	Development Program in Previous Technical Memorandum – 07/08 (ZSF)	Current Development Program (ZSF)	Net Difference – Current Program Vs. 2004 FEIS Program (ZSF)
Community Facility/Cultural	140,000 zsf (library)	35,000 sf (15,000 zsf library and 20,000 zsf of miscellaneous cultural uses, TBD)	33,500 sf (15,000 zsf library and 18,500 zsf of miscellaneous cultural uses, TBD)	-106,500 zsf
Theater	40,000 zsf (performing arts)	15,000 zsf (600-seat non-profit cinema)	15,000 zsf (600-seat non-profit cinema)	-25,000 zsf
Retail/Restaurant	15,000 zsf	12,681 zsf	25,000 zsf	10,000 zsf
Residential	-	186,255 zsf (190 dwelling units)	274,286 zsf (up to a maximum of 400 dwelling units)	274,286 zsf (up to a maximum of 400 dwelling units)
Parking	466-space public parking garage	450-space public parking garage	365-space public parking garage	- 101 parking spaces
Open Space	-	An approximately 25,590 sf public plaza on northern portion of block	An approximately 13,450 sf public plaza on northern portion of block	13,450 sf public plaza
Hotel	-	125,928 zsf (220 rooms)	-	-

Similar to the 2008 development, the proposed program is expected to include a 15,000 zsf cinema (with approximately 600 seats), compared to a 40,000 zsf theater analyzed in the 2004 FEIS. The proposed program is also expected to include a small, approximately 15,000 zsf neighborhood branch library, and 18,500 zsf of space to be dedicated for miscellaneous cultural uses (art organizations, office, studio space, etc.). The amount of retail square footage being proposed is approximately 10,000 zsf more than what was analyzed in the 2004 FEIS, and the proposed public parking garage would include 101 fewer spaces than what was previously analyzed in the FEIS. In addition, the current program for Site EE includes an approximately 13,450 sf public plaza on the northern portion of the block, which was not included in the 2004 FEIS program.

In terms of density, the proposed modified development would result in a built FAR of approximately 6.97, which would maximize the development potential of the project site. As such, for environmental analysis purposes, the proposed modified development represents the reasonable worst case development scenario associated with the proposed rezoning.

Current preliminary plans for the building being proposed call for a structure that would rise to a maximum height of approximately 385 feet (see building section in Figure 3). As shown in Figure 3, the lower floors of the proposed building would include the cinema, cultural and retail

uses, while floors 6 through 29 would accommodate the residential units, with a mechanical penthouse above. The building would mostly occupy the southern portion of the triangular site. As shown in the ground floor plan in Figure 4, the entrance/egress to the proposed below-grade garage would be located on Ashland Place, which is a two-way street with a mapped width of 75 feet. Ashland Place would also accommodate the service entrance to the proposed development, as well as the entrance to the residential component. The entrance to the cinema/cultural space would be located within the proposed plaza along Lafayette Avenue, which would lead to the cultural lobby on the second floor of the building. The entrance to the main retail use would be at the tip of the site, at the intersection of Ashland Place and Flatbush Avenue, with the entrance to a second retail or restaurant space located within the plaza.

Table 2 below shows the estimate of users (residents and workers) anticipated to be generated by the proposed modified development, compared to the estimates assumed in the 2004 FEIS for Site EE and the 2008 Technical Memorandum for the BAM South development. As shown in the table, the proposed modified development on Site EE would introduce a total of 132 employees and 840 residents to the site, compared to 223 employees and no residents for the Site EE program analyzed in the 2004 FEIS.

TABLE 2
Site EE Occupants – 2004 FEIS and 2008 Technical Memorandum Vs. 2009 Proposed Modified Development

Users On-Site *	**Site EE in 2004 FEIS**	**Site EE in 2008 Technical Memorandum**	**2009 Proposed Modified Development**
Community Facility/ Cultural space	180 employees	50 employees	49 employees
Retail	38 employees	32 employees	63 employees
Residential	-	399 residents, 8 employees	840 residents, 16 employees
Hotel	-	73 employees	-
Parking	5 employees	5 employees	4 employees
TOTAL	**223 employees**	**168 employees and 399 residents**	**132 employees and 840 residents**

***** Based on rates used in the 2004 FEIS, including: 2.1 residents per unit; 1 worker per 400 sf of general retail; 1 worker per 1,000 sf of community facility and cultural space; 1 worker per 25 dwelling units; 1 worker per 90 parking spaces; 1 worker per 3 hotel rooms.

III. ASSESSMENT OF POTENTIAL ENVIRONMENTAL EFFECTS OF PROPOSED MODIFICATIONS

This Technical Memorandum uses the 2004 FEIS as the baseline condition for analysis purposes. However, where more updated information is available, a comparison to the 2008 Technical Memorandum is provided, as appropriate. As described below, the proposed revisions to the program for BAM South (Site EE) would not alter the conclusions for the environmental areas examined in the 2004 FEIS or the 2008 Technical Memorandum. However, several density-based technical areas – such as community facilities, open space, traffic and transportation – were further examined to determine if the proposed modified development could alter the conclusions of the 2004 FEIS.

Land Use, Zoning, and Public Policy

Land Use

Land use conditions within the Downtown Brooklyn Development FEIS study area were updated to account for existing conditions and the status of development projects anticipated for completion through 2013. There have been no changes to the land use of Site EE, which continues to be occupied mostly by a surface parking lot with a capacity of approximately 124 spaces.

As noted in the 2008 Technical Memorandum, there has been a trend in both Downtown Brooklyn and the surrounding study area toward higher-density residential and mixed-use development, a trend that has thus far been consistent with the scale of development projected and analyzed for Downtown Brooklyn in the 2004 FEIS. The area shows signs of increased housing activity, evidenced by the number of recently completed projects and sites under construction. For example, in the immediate vicinity of Site EE, the Williamsburgh Savings Bank building recently underwent conversion from commercial to residential use. It should also be noted that many of the 32 no-build sites listed in the 2004 FEIS have been completed, and the programs of two of the larger proposed projects in the area (Brooklyn Bridge Park and the Atlantic Yards Arena and Redevelopment Project) have been modified since the 2004 FEIS. In addition, there are a number of recently completed projects and projects anticipated to be completed by 2013 in the study area, most of which are residential.

Similar to the project analyzed in the 2008 Technical Memorandum, the proposed modified development would include retail, cultural, and community facility uses, as well as residential and retail uses, although it would no longer include hotel use. The mix of uses in the proposed modified development would be compatible with existing and anticipated future uses in the study area, and the area in the immediate vicinity of Site EE is expected to continue to exhibit a mix of commercial, residential, and cultural uses. As discussed below, the proposed modified development would be consistent with the BAM cultural district, which is intended to create a vibrant, mixed-use, multicultural arts district in Downtown Brooklyn. Therefore, the proposed modified development on Site EE would not result in any significant adverse impacts on land use, and would not alter the findings of the 2004 FEIS.

Zoning and Public Policy

Since the 2004 FEIS, there have not been any major changes to the zoning or public policy for the Downtown Brooklyn Development project area.

The actions being proposed include rezoning Site EE from C6-1 to C6-2. The proposed rezoning would not result in a significant change of land use in the area as the uses allowed by the proposed zoning would be identical to uses that are currently allowed, and would be consistent with existing land use patterns and trends in the surrounding area. The proposed zoning change would also not result in any new non-conforming uses.

A zoning text amendment is also being proposed, which would add a mechanism for authorizations for cultural uses in C6-2 districts within the Special Downtown Brooklyn District (Article X, Chapter 1 of the NYC Zoning Resolution), subject to approval by the New York City

Planning Commission. Specifically, the new text would allow additional floor area for cultural uses, allow waivers from the street wall requirements along Flatbush Avenue, allow height and setback waivers, allow waivers from the Ground Floor Use regulations related to lobby frontages and entryways and allow waivers of the underlying signage regulations related to number, size and location, all under specified conditions through a zoning authorization by the New York City Planning Commission. The proposed text amendment would apply only to C6-2 zoning districts within the Special Downtown Brooklyn District. The actions being proposed also include a zoning authorization pursuant to the zoning section described above to facilitate the BAM South project.

Therefore, the proposed actions and the resulting proposed modified development on Site EE are not expected to result in any significant adverse impacts to or conflicts with zoning in the study area, and would not alter the findings of the 2004 FEIS.

The proposed modified development would also support and enhance the goals of the BAM cultural district, by developing an underutilized parking lot site with a vibrant mixed use development, which is anticipated to include approximately 33,500 zsf of cultural and community facility space, as well as a 15,000 sf (600-seat) non-profit cinema that will be an extension of the adjacent cultural district. Therefore, the proposed modified development on Site EE would not result in any significant adverse impacts on public policy, and would not alter the findings of the 2004 FEIS.

Socioeconomic Conditions

According to the *CEQR Technical Manual*, a residential development of 200 units or less or a commercial development of 200,000 sf or less would typically not result in socioeconomic impacts, unless it generates socioeconomic conditions that are very different from the prevailing conditions. The new development currently proposed on the BAM South site would introduce up to a maximum of 400 new residential units and approximately 73,500 zsf of other commercial and cultural uses (retail, restaurant, cinema, and cultural space). Although the proposed modified development would change the existing land use on the project site, it is expected to be consistent with the prevailing market conditions and trends of the area and is not anticipated to adversely impact the socioeconomic character of the surrounding neighborhood.

As a single site, the proposed modified development is not likely to trigger any significant changes to the area's real estate market. The proposed commercial/cultural uses are relatively small in number (approximately 73,500 zsf of non-residential uses), and are part of an ongoing trend, and therefore would not trigger a new trend in real estate conditions. The residential component of the proposed modified development (up to a maximum of 400 dwelling units), although it exceeds the CEQR threshold of 200 units, is not anticipated to cause any indirect residential displacement resulting from an increase in rental property values. The development of the project would result in the direct displacement of a public parking garage and a garden supply store, no residential direct displacement would occur. Upon completion the project would replace the public parking garage service and during construction public parking service would be provided by the public parking garages on adjacent blocks. Other garden supply stores in the neighborhood provide opportunities for the displaced services to be met and thus direct displacement of one retail supplier is not anticipated to adversely impact the socio economic character of the surrounding neighborhood.

The proposed residential component, which may consist of 20 percent low-income rental units and 80 percent market-rate rental units, would be similar to existing and projected developments in this area of Downtown Brooklyn, and would not add substantial new population with different socioeconomic characteristics compared to the size of the existing population. The proposed modified development also would not introduce a "critical mass" of non-residential uses so that the surrounding area becomes more attractive as a residential neighborhood, nor would it directly displace uses or properties that have had a "blighting" effect on property values in the area. Furthermore, the proposed modified development would not introduce a land use that would offset positive trends in the surrounding area.

As such, the proposed modified development would not generate any significant adverse impacts to socioeconomic conditions and no further analysis is warranted. The proposed modified development would therefore not result in any additional changes to socioeconomic conditions in the area surrounding the project site compared to the project analyzed in the 2004 FEIS.

Community Facilities

As stated in the *CEQR Technical Manual*, the demand for community services generally stems from the introduction of new residents to an area. The proposed modified development for the BAM South site would introduce up to a maximum of 400 dwelling units to the area, with an estimated 840 residents. Therefore, an evaluation of the proposed modified development's effects on community facilities is provided below. As detailed below, the proposed modified development would not result in any new significant adverse impacts to community facilities and services, and would not alter the findings of the 2004 FEIS.

Educational Facilities

The 2004 FEIS concluded that there would be ample capacity in surrounding public schools for the students expected to be generated by the Downtown Brooklyn Development project. As the proposed modified development would introduce new residential units to Site EE that were not considered in the 2004 FEIS, it was evaluated for its potential effects on elementary and intermediate schools in the study area. As discussed below, the changes proposed to the Site EE program are not expected to alter the conclusions of the 2004 FEIS.

If an action introduces less than 50 elementary and intermediate school age children, or 150 high school students, an assessment of school facilities is not required. The screening threshold is higher for high school students as high school level students can elect to attend schools other than their neighborhood high schools. The *CEQR Technical Manual* provides standard student generation rates for residential developments based on borough. Since the publication of the *CEQR Technical Manual* in 2001, the New York City Department of City Planning (NYCDCP) and the New York City School Construction Authority (NYCSCA) have modified Table 3C-2 of the Manual to reflect new multipliers for determining the number of school-aged children expected to be generated by residential development. These new multipliers are based on the number of new residential units projected and the respective borough, and no longer give consideration to the targeted income level of the respective residents. According to the 2008 update of Table 3C-2 of the *CEQR Technical Manual*, a residential development in Brooklyn would introduce new students at the following rates: 0.29 new elementary school students per unit; 0.12 new middle school students per unit; and 0.14 new high school students per unit.

Based on these new guidelines, with up to a maximum of 400 dwelling units, approximately 116 elementary students and 48 intermediate students would be generated by the proposed modified development, for a total of 164 students, as well as 56 high school students. As the number of elementary school students generated by the proposed modified development would exceed the CEQR threshold, it was evaluated for its potential effects on elementary and intermediate schools in the study area. The new multipliers are applied in the schools analysis provided below.

Site EE is located within the boundaries of planning zone 3 of Community School District 15 (CSD15), and is also near the boundary of CSD 13 (which is located approximately one block to the north of the site). Enrollment, utilization and projection data, as well as updated background conditions and population data, were based on the assessment provided in the July 2007 Modification Technical Memorandum for Site Q (updated to reflect new multipliers), and are presented in Table 3 below.

Elementary Schools
As shown in Table 3 below, with the net additional students generated by the proposed modified development on Site EE, elementary schools within a ½-mile radius of the project area would have 216 available seats and a utilization rate of 98%. As shown in Table 3, it is expected that CSD13, zones 1 and 2, and CSD15 zone 3 would have a total of 1,254 available seats, with a utilization rate of 90%. CSD13 as a whole would be expected to operate at 66% of capacity, with 4,244 available seats, whereas CSD15 is anticipated to operate at 106% of capacity, with a shortfall of 1,021 seats. However, CSD13 and CSD15 combined would have ample capacity (3,223 seats), and would be operating at 89% of capacity.

With the exception of CSD 15, schools in the study area have sufficient space to accommodate the additional students generated by the proposed modified development on Site EE. Although CSD15 would operate over capacity, it should be noted that this deficit in capacity would be concentrated in the southern part of the district. It is likely that students generated by the proposed modified development would attend the schools closest to Site EE and the project area, which are expected to have ample capacity. Given that the schools within a ½-mile radius of the Downtown Brooklyn Development project area, including CSD15 zone 3 (where Site EE is located) would have ample capacity, no significant adverse impact to elementary schools is expected as a result of the proposed modified development on Site EE.

Intermediate Schools
As shown in Table 3 above, with the net additional students generated by the proposed modified development on Site EE, intermediate schools within a ½-mile radius of the Downtown Brooklyn Development project area would have 646 available seats and a utilization rate of 84%. As shown in Table 3, intermediate schools within CSD13, zones 1 and 2, and CSD15 zone 3 would also have sufficient capacity, with a total of 796 available seats and 82% utilization. CSD13 as a whole would be expected to operate at 71% of capacity, with 1,842 available seats, whereas CSD15 is anticipated to operate at 108% of capacity, with a shortfall of 501 seats. However, CSD13 and CSD15 combined would have ample capacity (1,341 seats), and would be operating at 90% of capacity.

TABLE 3
Estimated Public Elementary and Intermediate School Enrollment, Capacity, and Utilization Future with Proposed Modified Development on Site EE

Schools	2013 No-Build Projected Enrollment *	New Students Generated by Proposed Modified Development on Site EE	2013 Total Projected Future Enrollment **	Capacity	Seats Available	Percent Utilization
ELEMENTARY SCHOOLS						
Total Elementary Schools Within ½-Mile of 2004 FEIS Project Area	8,715	116	8,831	9,047	216	98%
Total in CSD13 Zones 1 and 2 and CSD 15 Zone 3	10,620	116	10,736	11,990	1,254	90%
Total in CSD 13	8,207	0	8,207	12,451	4,244	66%
Total in CSD 15	17,306	116	17,422	16,401	-1,021	106%
Total in CSD13 and CSD 15 Combined	25,513	116	25,629	28,852	3,223	89%
INTERMEDIATE SCHOOLS						
Total Intermediate Schools Within ½-Mile of 2004 FEIS Project Area	3,412	48	3,460	4,106	646	84%
Total in CSD13 Zones 1 and 2 and CSD 15 Zone 3	3,651	48	3,699	4,495	796	82%
Total in CSD 13	4,593	0	4,593	6,435	1,842	71%
Total in CSD 15	6,822	48	6,870	6,369	- 501	108%
Total in CSD13 and CSD 15 Combined	11,415	48	11,463	12,804	1,341	90%

Source: Data in this table are based on Table 3 of *Technical Memorandum for BAM South*; July 2008.
***** 2013 Projected No-Build enrollment is based on 2013 total projected future enrollment in the July 2007 *Modification Technical Memorandum for Site Q*, modified to apply the updated student generation rates to the "students generated by the proposed action" indicated in Table 3 of the Site Q Memorandum. The new student generation rates would result in 592 elementary students and 245 intermediate students (compared to 580 and 216, respectively, with the old rates used in the Technical Memorandum for Site Q).
****** Total projected enrollment is derived by adding projected additional enrollment from the proposed modified development on Site EE (116 elementary and 48 intermediate students) to the 2013 total projected future enrollment in the July 2007 *Modification Technical Memorandum for Site Q*.

Although CSD15 would operate over capacity, this deficit in capacity would also be concentrated in the southern part of the district. As noted above, it is likely that students generated by the proposed modified development would attend the schools closest to Site EE and the project area, which are expected to have ample capacity. Therefore, no significant adverse impact to elementary schools is expected as a result of the proposed modified development on Site EE.

Libraries

The 2004 FEIS concluded that the previously-approved project would not have any significant impacts on library service. The changes proposed to the Site EE program would not be expected to alter this conclusion.

According to the guidelines established in the *CEQR Technical Manual*, if a proposed action increases the number of residential units served by the local library branch by more than 5 percent, then an analysis of library services is necessary. In Brooklyn, the introduction of 734

residential units would represent a 5 percent increase in dwelling units per branch. As the proposed modified development on Site EE would result in the addition of up to a maximum of 400 dwelling units to the study area (representing an increase of 2.7 percent in dwelling units per branch), it falls well below the CEQR threshold for a detailed analysis. Therefore, the proposed changes to the Site EE program would not result in any new significant adverse library service impacts, and would not alter the findings of the 2004 FEIS.

Hospitals and Public Health Facilities

A project that introduces less than 2,500 units does not require analysis of hospital services, while an action that generates more than 600 low- to moderate-income units may require analysis of other public health care facilities. As the proposed modified development on Site EE would introduce up to a maximum of 400 dwelling units, most of which are anticipated to be market-rate (up to 20%, or 80 units, could be affordable), it would not meet the threshold for analysis of hospitals and health care facilities. Therefore, the proposed changes to the Site EE program would not result in any new significant adverse impacts to public health facilities.

Day Care

The 2004 FEIS concluded that the previously-approved project would not have any significant impacts on day care service. The changes proposed to the Site EE program would not be expected to alter this conclusion.

The *CEQR Technical Manual* requires a detailed analysis of day care centers when a proposed action would produce substantial numbers of subsidized, low- to moderate-income family housing units that may therefore generate a sufficient number of eligible children to affect the availability of slots at public day care centers. Typically, proposed actions that generate 50 or more eligible children require further analysis. According to a Fall 2008 update to Table 3C-4 of the *CEQR Technical Manual* (issued subsequent to the 2008 Technical Memorandum), which calculates by borough the estimated number of affordable (low- or low-to-moderate-income) housing units that could yield at least 50 children eligible for publicly financed child care, in Brooklyn this threshold would be exceeded with an addition of 70 affordable units. As the proposed modified development would contain a total of up to a maximum of 400 units, of which up to 80 units (20%) could be affordable, it would exceed the CEQR threshold for public day care analysis. Therefore, a reassessment of the 2004 FEIS day care analysis is warranted. The 2008 development, which was evaluated prior to the issuance of the new guidelines, did not trigger the CEQR threshold for day care analysis.

An update of day care facilities and the population eligible for public day care services was conducted for an approximate 1-mile study area around the project site. Day care capacity and enrollment information were updated using 2008 Administration for Children's Services (ACS) data, and updated background conditions and population data for the analysis year of 2013 were based on the assessment provided in a July 2007 Modification Technical Memorandum for Site Q. As shown in Table 4 below, data from ACS indicate that there are currently approximately 379 available slots within an approximate 1-mile radius, including day care and Head Start programs.

The proposed modified development would result in the addition of approximately 57 children under the age of twelve, i.e., eligible for public day care (includes 42 children under the age of 6, and 15 children between the ages of 6 and 12). As shown in Table 4 below, the 42 eligible children under the age of 6 generated by the proposed modified development on Site EE, combined with the eligible children that were expected to be generated by other development sites in the 2004 FEIS, would add approximately 641 children eligible for day care to the study area by 2013.

TABLE 4
Current Availability of Day Care Slots, Expected 2013 Affordable Housing Units, and Number of Children Eligible for Day Care – 2004 FEIS vs. 2009 Conditions

	2004 FEIS	2009 Conditions
Available day care Slots in or near the project area	314	379
Additional Affordable Housing Units by 2013	1,642	1,822
Additional Children eligible for Day Care by 2013 (ages 0 to 12)	585	641*
* Total number of additional children eligible for day care is derived by adding 42 eligible children from the proposed modified development on Site EE (0-6 years) to the 2013 total eligible children in the July 2007 Modification Technical Memorandum for Site Q.		

Based on the Fall 2008 update of *CEQR Technical Manual* Table 3C-4, the proposed modified development would also generate 15 children aged 6 to 12 eligible for publicly subsidized care. Because these children are anticipated to be attending school during most of the day, their need would be for after-school care. Eligible children who qualify for ACS vouchers or other programming for after school care could be served by Family Child Care Networks or school-aged slots in ACS contracted day care facilities, New York City Department of Youth and Community Development's (DYCD's) Out of School Time programs, and/or DOE approved after school programs.

Therefore, with the changes to background conditions as well as the proposed modified development on Site EE, only 56 eligible children would be added to the study area over the 585 children analyzed in the 2004 FEIS. The number of eligible children added to the service area would be a small share of the total day care users (approximately 2.7 percent of current enrollment), particularly given that the number of available day care slots in the area has increased compared to 2004 conditions (an increase of 65 slots).

Therefore, the proposed changes to the Site EE program would not result in any new significant adverse day care service impacts, and, like the 2008 Technical Memorandum, would not alter the findings of the 2004 FEIS.

Open Space

No significant adverse open space impacts were identified in the 2004 FEIS. As shown in Table 2 above, the proposed modified development on Site EE would introduce a total of 132 employees and 840 residents to the site, compared to 223 employees and no residents for the Site EE program analyzed in the 2004 FEIS, and 168 employees and 399 residents for the Site EE program analyzed in the 2008 Technical Memorandum. As the proposed modified development

would generate fewer workers, the proposed modifications would not result in any new significant adverse impacts within the ¼-mile non-residential study area, and no further analysis is required for the non-residential population.

As the proposed modified development would introduce new residential units to Site EE that were not considered in the 2004 FEIS, and would introduce more residential units to Site EE than was considered in the 2008 Technical Memorandum, it was evaluated for its potential effects on open space resources in the ½-mile residential study area. It should also be noted that a 13,450 sf (0.31 acres) public plaza is currently planned on the northern portion of the block, which was not included in the 2004 FEIS analysis, but which is smaller than the approximately 0.59-acre plaza included in the 2008 Technical Memorandum analysis. As discussed below, the changes proposed to the Site EE program would not be expected to alter the conclusions of the 2004 FEIS or the 2008 Technical Memorandum.

As shown in Table 5 below, in the 2004 FEIS, the active open space ratio was expected to decrease by 1.58% from No-Build to Build conditions, from 0.48 to 0.47 acres per 1,000 residents. In the 2008 Technical Memorandum, the active open space ratio was expected to decrease by 0.30% from No-Build to Build conditions, from 0.466 to 0.465 acres per 1,000 residents. With the proposed modifications, the active open space ratio is expected to decrease by 0.62% from No-Build to Build conditions, from 0.466 to 0.463 acres per 1,000 residents. As this decrease would be smaller than what was projected in the FEIS, and as the active open space ratio with the proposed modified development would be essentially the same as what was disclosed in the FEIS and the 2008 Technical Memorandum (rounded at 0.5 acres per 1,000 residents), the conclusions of the open space analysis in the 2004 FEIS and 2008 Technical Memorandum remain valid, and the proposed modified development on Site EE would not result in new significant adverse active open space impacts.

In terms of the combined passive open space ratio, the 2004 FEIS projected a decrease of 5.96% from No-Build to Build conditions, from 0.27 to 0.25 acres per 1,000 residents and workers, and the 2008 Technical Memorandum projected an increase of 0.63% from No-Build to Build conditions, from 0.241 to 0.243 acres per 1,000 residents and workers (see Table 5). With the proposed modified development, the combined passive open space ratio would increase by approximately 0.10% from No-Build to Build conditions, from 0.2410 to 0.2412 acres per 1,000 residents and workers. This increase is due mostly to the new open space resource included as part of the proposed modified development (which was not included in the 2004 FEIS analysis, but would be smaller than the public plaza assumed in the 2008 Technical Memorandum analysis). Therefore, the conclusions of the open space analysis in the 2004 FEIS and 2008 Technical Memorandum remain valid, and the proposed modified development on Site EE would not result in any new significant adverse passive open space impacts.

Shadows

The 2004 FEIS concluded that the Downtown Brooklyn Development project would not have any significant adverse shadow impacts. As there were no open space resources or sunlight-sensitive historic resources within the maximum shadow radius of the previous 6-story development on Site EE, no detailed shadow analysis for Site EE was provided in the 2004 FEIS. As the proposed modified development, would be significantly taller, at a maximum height of approximately 385 feet, a shadow screening assessment is provided to determine whether the

increased height could reach any open space resources or sunlight-sensitive historic resources in the area.

TABLE 5
Adequacy of Open Spaces in the Residential Study Area – 2004 FEIS and 2008 Technical Memorandum vs. 2009 Updated Conditions

	2004 FEIS		2008 Technical Memorandum		2009 Updated Conditions	
	No-Build Condition	**2013 Build Condition**	**No-Build Condition (1)**	**2013 Build Condition**	**No-Build Condition (1)**	**2013 Build Condition (2)**
Study Area Population						
Residents	128,248	130,304	133,706	134,105	133,706	134,546
Workers	157,954	178,668	166,346	166,514	166,346	166,478
Total User Population	**286,202**	**308,972**	**300,052**	**300,619**	**300,052**	**301,024**
Open Space Acreage						
Total	137.56	138.71	134.62	135.21	134.62	134.93
Active	61.79	61.79	62.30	62.30	62.30	62.30
Passive	75.77	76.92	72.32	72.91	72.32	72.63
Open Space Ratios						
Active (Residential)	0.482 per 1,000 residents	0.474 per 1,000 residents	0.466 per 1,000 residents	0.465 per 1,000 residents	0.466 per 1,000 residents	0.463 per 1,000 residents
Recommended Weighted Average Ratio for Passive	0.307 per 1,000 residents and workers	0.298 per 1,000 residents and workers	0.306 per 1,000 residents and workers	0.306 per 1,000 residents and workers	0.306 per 1,000 residents and workers	0.306 per 1,000 residents and workers
Combined Passive (Residents and Workers)	0.265 per 1,000 residents and workers	0.249 per 1,000 residents and workers	0.241 per 1,000 residents and workers	0.243 per 1,000 residents and workers	0.241 per 1,000 residents and workers	0.241 per 1,000 residents and workers
Percent Change in Ratios (No-Build to Build)						
Active (Residents)		-1.58%		-0.30%		-0.62%
Combined Passive (Residents & Workers)		-5.96%		0.63%		0.10%

Source: Data in this table are from Table 5 of *Modification Technical Memorandum for Site Q*; AKRF, Inc.; July 2007
(1) No-Build Condition is assumed to be the same as the Build Condition in the July 2007 memorandum for Site Q.
(2) Build Condition includes the addition of 840 residents and 130 employees to the study area population as a result of the proposed modifications, as well as the addition of 0.31 acres of passive open space (plaza on the northern portion of the subject block).

The proposed new development would be 30 stories (including mechanical penthouse) with a maximum height of approximately 385 feet. According to the *CEQR Technical Manual*, the longest shadow cast by any structure in New York City would be 4.27 times the height of that structure. At a height of 385 feet, the longest shadow (in December) that would be cast by the proposed modified development would be approximately 1,644 feet long. This shadow could potentially be long enough to reach Fort Greene Park, located approximately 4 blocks to the east and two blocks to the north of the site, at a distance of approximately 1,206 feet from the site, as well as several other smaller open space resources (playgrounds, community gardens, plazas, etc.) and historic resources, as illustrated in Figure 5. Each of these resources is also identified in Table 6 below.

Location of Buildings Relative to Resources Within Shadow Radius

As the sun rises in the east, the earliest shadow would be cast almost directly westward, and shadows would shift clockwise throughout the day until sunset, when they would fall east. According to the *CEQR Technical Manual*, shadows cast by proposed developments fall to the north, east, and west. Because of the path that the sun travels across the sky, no shadow can be cast in a triangular area south of a proposed development. In New York City, that triangular area is between -108 degrees from true north and 108 degrees from true north. Using this methodology, eleven of the resources identified within the maximum shadow radius were found to be located within the triangular area between -108 degrees from true north and 108 degrees from true north from the proposed modified development (see Figure 5). These resources are therefore excluded from further shadows assessment (refer to Table 6 for list of excluded resources).

Resources Within Maximum Shadow Radius

In accordance with the CEQR guidelines, the assessment of potential shadow impacts is limited to new shadows long enough to reach publicly accessible open spaces or historic resources. Publicly accessible open spaces and historic resources to the north, east and west of Site EE were identified, as shadows created by the proposed modified development could fall in the direction of these resources. It is important to note that only architectural resources on sites facing the proposed development could be covered by incremental shadows created by the proposed building. In addition, in accordance with CEQR guidelines, individual historic resources that lack sunlight-sensitive features (such as stained glass windows for example), were not considered further. For example, the Hanson Place Baptist Church, located at 88 Hanson Place, does not contain any stained glass windows or other sunlight-sensitive architectural features, and was therefore excluded from further analysis.

Two sunlight-sensitive historic resources were identified within a 1,644-foot radius from the site, the Hanson Place Central Methodist Church and the Baptist Temple. However, it was determined that Hanson Place Central Methodist Church would not be affected by shadows cast by the proposed modified development. The Church, which has a number of stained glass windows, is located to the southeast of the project site, at the corner of St. Felix Street and Hanson Place, immediately adjacent to the Williamsburgh Savings Bank. The church falls within the boundaries of the BAM Historic District but is not an individual landmark. The Hanson Place Central Methodist Church is located to the east of the Williamsburgh Savings Bank building, and does not face the proposed modified development. Given its location immediately adjacent to the 512-foot tall Williamsburgh Savings Bank Building, and the fact that it faces east and south, away from the project site, it would not be affected by any new shadows cast by the proposed modified development, and is therefore excluded from further assessment.

For those remaining resources that were not excluded in the steps above, including the Baptist Temple, a shadows assessment was conducted, as described below.

Assessment of Potential Shadow Impacts

As directed by the *CEQR Technical Manual*, shadow analyses were performed for the remaining 12 resources listed in Table 6, for four representative days of the year: March 21/September 21,

the equinoxes; May 6, the midpoint between the summer solstice and the equinox (and equivalent to August 6); June 21, the summer solstice and the longest day of the year; and December 21, the winter solstice and the shortest day of the year. The *CEQR Technical Manual* defines the temporal limits of a shadow analysis period to fall from an hour and a half after sunrise to an hour and a half before sunset. The results of the shadow analysis on the identified resources of concern are summarized in Table 6 and discussed below.

March 21/September 21

On the equinoxes, incremental shadows from the proposed modified development would reach six of the resources shown in Table 6, mostly in the early morning and late afternoon hours. Incremental shadows would be cast on the Brooklyn Bears Rockwell Garden for a duration of approximately 1 hour and 18 minutes, and would exit this garden entirely by 10:09 AM. Incremental shadows would also be cast on Sixteen Sycamores Playground and the Baptist Temple immediately to its east (7:36 AM to 8:44 AM and 7:36 AM to 8:54 AM, respectively) for a duration of approximately 1 hour and 8 minutes and 1 hour and 18 minutes, respectively; and P.S. 735K/Secret Garden (duration of approximately 1 hour and 24 minutes). In the afternoon, the proposed modified development would cast incremental shadows on Fowler Square for a duration of approximately 41 minutes, and on the open space at Fulton Street and Fort Greene Place for a duration of approximately 1 hour and 40 minutes (2:10 PM to 3:50 PM). No incremental shadows would be cast on any of the other resources in Table 6 on this analysis day.

May 6/August 6

Between the equinoxes and the summer solstice, incremental shadows cast by the proposed modified development would also reach five of the resources shown in Table 6, mostly in the early morning hours. Incremental shadows would be cast by the proposed modified development on the Brooklyn Bears Rockwell Garden for a duration of approximately 1 hour and 41 minutes, and would exit this garden entirely by 10:28 AM. Incremental shadows would also be cast on Sixteen Sycamores Playground and the Baptist Temple (7:20 AM to 7:54 AM and 6:27 AM to 8:32 AM, respectively) for a duration of approximately 34 minutes and 2 hours and 5 minutes, respectively; P.S. 735K/Secret Garden (duration of approximately 2 hours and 37 minutes); and North Pacific Playground (6:27 AM to 6:39 AM, for a duration of approximately 12 minutes). No incremental shadows would be cast on any of the other resources in Table 6 on this analysis day.

June 21

On the summer solstice, June 21, the sun is most directly overhead and shadows are shortest for most of the day. Incremental shadows cast by the proposed modified development would reach the Brooklyn Bears Rockwell Garden (entering at 9:42 AM and exiting at 10:02 AM, for a duration of 20 minutes); the Baptist Temple (entering at 7:11 AM and exiting at 8:20 AM, for a duration of 1 hour and 9 minutes); P.S. 735K/ Secret Garden (entering at 5:57 AM and exiting at 8:59 AM, for a duration of 3 hours and 2 minutes); and North Pacific Playground (entering at 5:57 AM and exiting at 6:34 AM, for a duration of 37 minutes). No incremental shadows would be cast on any of the other resources in Table 6 on this analysis day.

TABLE 6
Incremental Shadow Duration on Identified Resources

Map Ref. #	Resource Name	March 21	May 6	June 21	December 21
Resources Assessed For Potential Shadow Impacts					
1	Brooklyn Bears Rockwell Garden	8:51-10:09	8:47-10:28	9:42-10:02	n/a
2	Sixteen Sycamores Playground	7:36-8:44	7:20-7:54	n/a	n/a
3	P.S. 735K at 806/Secret Garden	7:36-9:00	6:27-9:04	5:57-8:59	n/a
4	Fowler Square	15:48-16:29	n/a	n/a	n/a
5	Fort Greene Park	n/a	n/a	n/a	n/a
6	North Pacific Playground	n/a	6:27-6:39	5:57-6:34	n/a
7	P.S. 38/The Pacific School Playground	n/a	n/a	n/a	n/a
11	Greene Garden	n/a	n/a	n/a	n/a
12	DOE Playground	n/a	n/a	n/a	n/a
14	Macomber Square	n/a	n/a	n/a	8:51-8:52
17	Fulton Street and Fort Greene Place Open Space	14:10-15:50	n/a	n/a	13:34-14:53
E	Baptist Temple	7:36-8:54	6:27-8:32	7:11-8:20	n/a
Resources Within Area Not Affected By Development Shadows (Area between -108 and 108 degrees)					
8	Friends of Pacific Street Garden	n/a	n/a	n/a	n/a
9	Warren Street/St. Mark's Community Garden	n/a	n/a	n/a	n/a
10	South Oxford Playground	n/a	n/a	n/a	n/a
13	Wyckoff Gardens Open Space	n/a	n/a	n/a	n/a
15	Atlantic Terminal Plaza	n/a	n/a	n/a	n/a
16	Brooklyn Bear's Pacific Street Community Garden	n/a	n/a	n/a	n/a
A	Atlantic Avenue Control House	n/a	n/a	n/a	n/a
Historic Resources Screened Out From Further Assessment (Non-Sunlight Sensitive) (1)					
B	Dime Savings Bank				
C	Williamsburgh Savings Bank				
D	Hanson Place Baptist Church				
F	Pioneer Warehouses				
G	Buildings at 565-571 Fulton Street				
H	308-310 Livingston Street				
I	Former Public School 15				
J	Buildings at 522-550 State Street				
	Brooklyn Academy of Music Historic District (refer to discussion of Hanson Place Central Methodist Church in Technical Memorandum)				
	Fort Greene Historic District and Expansion				
	Boerum Hill Historic District				

(1) Refer to Screening discussion in Technical Memorandum
Times shown are eastern standard time (EST)

December 21

On the shortest day of the year (winter solstice) when the sun is low in the sky, shadows are the longest they will be all year. Incremental shadows cast by the proposed modified development would reach only two resources on this day: Macomber Square (entering at 8:51 AM and exiting at 8:52 AM, for a duration of 1 minute), and the open space at Fulton Street and Fort Greene Place (entering at 1:34 PM and exiting at 2:54 PM, for a duration of 1 hour and 19 minutes. No incremental shadows would be cast on any of the other resources in Table 6 on this analysis day.

Assessment

According to the *CEQR Technical Manual*, trees, many plants, and many activities can require a minimum of four to six hours of sunlight, particularly between April and October (the growing season). As indicated in Table 6 and discussed above, the proposed modified development would cast incremental shadows on several resources in one or more of the analysis periods (no incremental shadows would be cast on Fort Greene Park, the largest open space in the study area, in any of the analysis days). As detailed above, in many instances, these incremental shadows

would be cast mostly in the early morning hours, and would quickly dwindle as the sun rises, and not create a significant adverse shadow impact on the affected resources. Shadows cast in the afternoon would generally be less than 2 hours in duration. As such, all of the affected open space resources assessed above are expected to receive between four to six hours of sunlight on the analysis days. As such, shadows cast by the proposed modified development would not result in a reduction in the usability of any of the existing open space resources identified in the study area, nor would it adversely affect their sunlight-sensitive features.

As noted above, the Baptist Temple, which is located at the southwest corner of Third Avenue and Schermerhorn Street, would also experience some incremental shadows from the proposed modified development. The Baptist Temple contains a large rose window and several stained glass windows on the eastern façade (facing Third Avenue), as well as several stained glass windows on the northern façade (facing Schermerhorn Street). Incremental shadows cast by the proposed modified development would reach the Baptist Temple on three of the four analysis days. However, those shadows would be cast mostly in the early morning hours (exiting no later than 8:54 AM on any of the analysis days), and would be of relatively short duration (less than two hours and 5 minutes). As such, these shadows would not significantly reduce light to this resource's stained glass windows, nor would it reduce the public's enjoyment of those windows. Therefore, the proposed modified development's shadow increments on the Baptist Temple would not have a significant adverse shadow impact.

It should also be noted that the modified program for Site EE includes a public plaza on the northern portion of the block. As this plaza would be located immediately to the north and west of the proposed building, it is expected to be cast in shadow during some periods, mostly in the morning, in all of the four analysis days. Because the creation of this open space is part of the proposed action, these shadows are not considered a significant adverse impact. Moreover, as with the 2008 development, this space is expected to be a paved urban plaza, and would be designed in the context of its partially shadowed condition (utilizing shade-tolerant elements for example).

Therefore, the incremental shadows resulting from the proposed modified development would not result in any significant adverse shadow impacts.

Historic Resources

For the 2004 FEIS, the New York City Landmarks Preservation Commission (LPC) determined that Site EE had no archaeological sensitivity. Therefore, as with the previously approved 2004 project, the current proposed modified development would not have any significant adverse effects on archaeological resources. The Brooklyn Academy of Music Historic District (NYCL and S/NR-listed), and the Williamsburgh Savings Bank building (NYCL and S/NR-listed) are located across the street, within 90 feet of Site EE. However, the design would locate the mass of the building to allow views of these historic resources. As with the previously approved project, the proposed modified development would require a construction protection plan in order to avoid potential physical impacts to these nearby resources from ground-borne vibrations or other potential construction-related issues.

As described in the 2004 FEIS, the new, modern development that was projected to occur as a result of the proposed actions was expected to alter the context of the surrounding architectural

resources, changing it from a mixed context of low-, medium-, and high-rise structures on lots of varied size to one with a greater concentration of high rise structures on large sites. However, the change in context was not deemed to constitute a significant adverse impact on architectural resources. As discussed in the "Urban Design and Visual Resources" section below, the proposed modified development on Site EE would not alter these findings, and would therefore not result in any new significant adverse impacts on historic resources. Moreover, as discussed in the "Shadows" section above, the proposed modified development is also not anticipated to result in any significant adverse shadow impacts on any sunlight-sensitive historic resources in the area.

Urban Design and Visual Resources

The 2004 FEIS did not identify any significant adverse urban design or visual resources impacts for the Downtown Brooklyn Development project, although the changes to the study area's urban design and visual resources were identified as considerable. Although the proposed modified development would not alter the footprint of the development on Site EE, it would result in a taller structure, with a maximum height of 385 feet, which would be in close proximity to the Williamsburgh Savings Bank building, Brooklyn's most iconic structure, which is approximately 512 feet tall.

Like the 2008 project, the mixed-use building currently proposed on the BAM South site would occupy the south portion of a triangular site at the intersection of Flatbush and Lafayette Avenues and Ashland Place in Downtown Brooklyn. Together with the proposed plaza, located immediately to the north, the proposed building would define the gateway to BAM and the new cultural district. The base of the building would contain retail (at the southern tip); a cinema, which would be an extension of the adjacent cultural district; and the residential lobby, located off Ashland Place. An entry/exit ramp would provide access to the public parking garage on the lower levels. The upper portion of the building would contain the residential component of the development, with up to a maximum of 400 rental units.

As noted above, the actions being proposed include a zoning authorization pursuant to the proposed zoning text amendment, to facilitate the BAM South project. The requested authorization would allow additional floor area for cultural uses on the site, allow waivers from the street wall requirements along Flatbush Avenue, allow height and setback waivers, allow waivers from the ground floor use regulations related to lobby frontages and entryways and allow waivers of the underlying signage regulations related to number, size and location.

As shown in the illustrative massing studies in Figure 6, the design of the proposed building places the building mass along Ashland Place, and frames the corner of the BAM Opera House, on the one hand, and the Williamsburg Savings Bank, on the other. By occupying the eastern edge of the lot, the building also allows maximum sun exposure for the remainder of the site. The building consists of two pieces: the cultural base and the residential tower. The building base is a series of exterior, terraced levels that allow access to the cultural program and create an active, urban and public experience along Flatbush Avenue. These terraces will be landscaped and designed so as to screen the traffic noise from Flatbush Avenue and create a strong visual connection to the Grand Plaza.

As shown in Figure 6, the tower is articulated as three volumes: a central circulation spine and two flanking volumes, where the apartments are located. The tower and the building base are unified by a continuous folding skin. The building will be clad in metal, masonry and glass. The tower will be rendered as a solid mass with punched openings, with the central circulation volume as glass. The base will also be glazed in part, to correspond to the retail and lobby uses (see Figure 6). With such a design, the building would be deferential to its context while bringing a new urban order and visual identity to the site. Moreover, the urban design character of the area immediately surrounding the site would be enhanced by the streetscape improvements, including the 13,450 sf public plaza on the northern portion of the block.

Like the 2008 development, the proposed building would be more noticeable in surrounding views than the 6-story library projected on the site in the 2004 FEIS. However, the slim modern profile would minimize the perceived bulk from most views, particularly street-level views from streets to the south of the site (see photo montage in Figure 7). The proposed structure would be 127 feet shorter than the adjacent 512-foot tall Williamsburgh Savings Bank, and would therefore not compete with its prominence in the skyline, nor would it create significant visual obstructions to this iconic landmark. Moreover, the proposed modified development would be a modern building utilizing modern materials such as glass and metal curtain wall, and would therefore not replicate aspects of the landmark Williamsburgh Savings Bank building, either in terms of materials, form, or architectural details, so as to create a false historical appearance.

It should also be noted that the surrounding area's visual context would change considerably as a result of the first phase of the Atlantic Yards Arena and Redevelopment project, which is anticipated to be completed by 2014 and for which the 2009 Modified General Project Plan was affirmed by ESDC on September 17, 2009. The first phase would introduce five tall buildings, ranging in height from 200 to 511 feet, in the area south of Atlantic Avenue and west of 6th Avenue. These buildings would be considerably taller than the surrounding buildings in the area, and would thereby alter the Brooklyn skyline. The proposed modified development on Site EE, at a height of 385 feet, would be expected to blend in with these anticipated developments, further contributing to the creation of visual interest and a distinctive modern skyline.

Therefore, although the proposed modified development would change the context of the study area's urban design and visual resources, such changes would not be considered significant adverse impacts. As such, the findings of the 2004 FEIS relative to urban design and visual resources would not change.

Neighborhood Character

The 2004 FEIS did not identify any significant adverse neighborhood character impacts associated with the Downtown Brooklyn Development project. The analysis noted that the neighborhood character in the Fulton Street/Flatbush Avenue subarea, which encompasses Site EE, was not likely to change significantly as a result of the Downtown Brooklyn Development project. The cultural uses that were envisioned for this area were determined to be in keeping with existing land uses, and would further enhance the area's identity as a center of arts and entertainment, and provide for a smoother transition between the residential neighborhoods to the east and south and the commercial activity to the north.

The proposed modified development would similarly enhance the neighborhood character of this area. The proposed residential, commercial, and cultural uses would not conflict with surrounding land uses. The proposed modified development would be part of an ongoing trend that is shaping a new mixed-use neighborhood in this area at the southeastern edge of Downtown Brooklyn, and would contribute to and support the continued growth of the neighborhood. As noted in the applicable sections of this technical memorandum, no significant adverse impacts are likely to occur to open space, community facilities, traffic and transportation, noise or air quality as a result of the proposed modified development. Therefore, no significant adverse impacts to neighborhood character are expected, and the findings of the 2004 FEIS relative to neighborhood character would not change.

Natural Resources

The 2004 FEIS did not provide an analysis of natural resources, as the project site does not encompass, nor is it located near, any natural resources such as wetlands, dunes and beaches, grasslands, or woodlands. The proposed modified development on Site EE would not alter these conditions, and therefore a natural resources analysis is not required.

Hazardous Materials

The hazardous materials analysis in the 2004 FEIS identified the potential for VOCs, SVOCs, PCBs, pesticides, and metals to exist on Site EE, and was therefore deemed to require further investigation to determine appropriate health and safety and/or remedial measures. The EIS indicated that for Site EE (and all other City-owned sites), as development will occur through disposition to a private entity, further investigative and/or remedial activities, as well as health and safety measures, prior to and/or during construction, will be required under the City's contract of sale with the private entity selected to develop the site. This mechanism was determined to reduce or avoid the potential that significant adverse impacts would result from the proposed action.

As such, prior to developing the site, the developer must undertake a testing and sampling protocol, and if necessary, carry out any remediation measures that may be required. As part of this effort, a soil and groundwater testing protocol will be prepared and submitted to the NYCDEP Bureau of Environmental Planning and Assessment (BEPA), for review and approval. Once the protocol is approved, the testing phase and laboratory analysis program will be undertaken, and a written report with findings and a summary of the data will be submitted to NYCDEP for review and approval. After receiving such test results, a determination will be made by NYCDEP if the results indicate that remediation is necessary. If remediation is indicated from the test results, a proposed remediation plan must be prepared and submitted to NYCDEP for review and approval prior to execution.

In addition, a DEP-approved construction-related health and safety plan would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This Plan would be submitted to NYCDEP for review and approval prior to implementation.

Therefore, with implementation of the above measures, the proposed modified development, like the 2008 project, is not expected to result in any new significant adverse hazardous materials impacts that were not previously disclosed in the 2004 FEIS.

Waterfront Revitalization Program

Site EE is not located within the designated NYC Coastal Zone boundary, and the 2004 FEIS did not provide an analysis of the project's consistency with the Waterfront Revitalization Program. The proposed modified development would not alter these conditions, and therefore a WRP analysis is not necessary.

Infrastructure

As shown in Table 7 below, the anticipated demands for water and sewage treatment associated with Site EE would be increased as a result of the proposed modified development. Compared to the program analyzed in the 2004 FEIS, the proposed modified development would result in a net increase in total water demand of approximately 99,849 gallons per day.

Given the size of New York City's water supply system and the City's commitment to maintaining adequate water supply and pressures, few actions have the potential to cause significant impacts on this system. Therefore only very large developments or actions having exceptionally large water demands (e.g., more than 1 million gallons per day) would warrant a detailed water supply assessment. Similarly, only unusual actions with very large wastewater flows could have potential impacts on wastewater treatment.

TABLE 7
Expected Water Demand on Site EE – 2004 FEIS Vs. 2009 Proposed Modified Program

SITE EE	Use	Size (zsf)	Domestic Use (gpd)	Air Conditioning (gpd)	Total Water Demand (gpd)
2004 FEIS	Retail	15,000	2,550	2,550	5,100
	Community Facility/Cultural	180,000	30,600	30,600	61,200
		Total	***33,150***	***33,150***	***66,300***
2009 Proposed Modified Development	Residential	400 DU	94,080	46,629	140,709
	Retail	25,000 zsf	4,250	4,250	8,500
	Cinema	600 seats 15,000 zsf	3,000	2,550	5,550
	Community Facility	33,500 zsf	5,695	5,695	11,390
		Total	***107,025***	***59,124***	***166,149***
Net Difference: 2004 FEIS Vs. 2009 Modified Development			**73,875**	**25,974**	**99,849**

Notes: Based on average daily water use rates provided in Table 3L-2 of the *CEQR Technical Manual.* Residential use: 112 gallons per day (gpd) per resident (assume 2.1 residents per residential units), plus 0.17 gpd per sf for air conditioning (assume 274,286 zsf). Retail use: 0.17 gpd per square foot, plus 0.17 gpd per sf for air conditioning. Cinema use: 5 gpd per seat, plus 0.17 gpd per sf for air conditioning. Community facility use: 0.17 gpd per square foot, plus 0.17 gpd per sf for air conditioning.

The estimated total water consumption resulting from the proposed modified development on Site EE is well below the general threshold of 1 million gallons per day typically used to determine the need for a detailed analysis. Similarly for wastewater flows, the proposed modified

development is not expected to have any potential impacts on wastewater treatment given the scope of development. The additional expected sanitary sewage resulting from the proposed modifications, a net increase of approximately 73,875gpd compared to the project analyzed in the 2004 FEIS, would not cause the Red Hook wastewater pollution control plant (WPCP) to exceed its design capacity or SPDES permit flow limit. Therefore, the proposed modified development on Site EE would not result in any new significant adverse infrastructure impacts, and would not alter the findings of the 2004 FEIS.

Solid Waste and Sanitation Services

As shown in Table 8 below, the anticipated demands for solid waste and sanitation services associated with Site EE would be increased as a result of the proposed modified development. Compared to the program analyzed in the 2004 FEIS, the proposed modified development on Site EE would result in a net increase of 11,980 pounds of solid waste per week (lbs/wk), of which 8,782 lbs/wk would be handled by DSNY and 3,198 lbs/wk would be handled by private carters. As the additional amount of solid waste that would be handled by DSNY would be less than 10,000 lbs/wk, and private solid waste services have adequate capacity to meet the increases in demand, the proposed modified development on Site EE would not result in any new significant adverse solid waste impacts, and would not alter the findings of the 2004 FEIS.

TABLE 8
Expected Solid Waste Generation on Site EE – 2004 FEIS Vs. 2009 Proposed Modified Development

SITE EE	Use	Size (zsf)	Solid Waste Handled by DSNY (lbs/wk)	Solid Waste Handled by Private Carters (lbs/wk)	Total Solid Waste (lbs/wk)
2004 FEIS	Retail	15,000	0	4,740	4,740
	Community Facility/Cultural	180,000	9,360	0	9,360
		Total	***9,360***	***4,740***	***14,100***
2009 Proposed Modified Development	Residential	400 DU	16,400	0	16,400
	Retail	25,000 zsf	0	4,938	4,938
	Cinema	600 seats 15,000 sf	0	3,000	3,000
	Community Facility	33,500 sf	1,742	0	1,742
		Total	***18,142***	***7,938***	***26,080***
Net Difference: 2004 FEIS Vs. 2009 Modified Development			**8,782**	**3,198**	**11,980**

Notes: Based on citywide average waste generation rates presented in Table 3M-1 of the *CEQR Technical Manual.* Residential use: 41 lbs/wk per unit. Retail use: 79 lbs/wk per employee, and 1 employee per 400 sf. Cinema use: assume 2.5 lbs/wk per patron, and an average of 3,000 patrons a day (assuming 2 turnovers per day and 100% occupancy). Community facility use: use office rate, 13 lbs/wk per employee, and 1 employee per 250 sf.

Energy

The 2004 FEIS anticipated that the development resulting from the Downtown Brooklyn development project would place an increased demand on energy services. However, the increase in energy consumption was not identified as a significant adverse energy impact.

According to the *CEQR Technical Manual*, all new structures requiring heating and cooling are subject to the New York State Energy Conservation Code, which reflects State and City energy policy. Therefore, actions resulting in new construction would not create adverse energy impacts, and would not require a detailed energy assessment. A detailed assessment would be limited to actions that might somehow affect the transmission or generation of energy, or that generate substantial indirect consumption of energy. As the proposed modified development does not fall into that category, significant adverse impacts to energy sources are not anticipated to occur and an energy assessment is not warranted. As the proposed modified development on Site EE would not result in any new significant adverse energy impacts, the findings of the 2004 FEIS would not change.

Traffic and Parking

The 2004 FEIS determined that the Downtown Brooklyn Development project would result in the potential for significant adverse traffic impacts at 29 signalized intersections in one or more peak periods. Out of these 29 intersections, 5 intersections were located in the immediate vicinity of Site EE, including: Atlantic Avenue at Flatbush Avenue, Atlantic Avenue at 4th Avenue, Flatbush Avenue at Livingston Street, Flatbush Avenue at 4th Avenue/Hanson Place, and Flatbush Avenue at Schermerhorn Street/Lafayette Avenue. Mitigation measures were proposed in the 2004 FEIS that would fully or partially mitigate these impacts.

Because the proposed modified development would include new uses (residential) and reduce the square footage of the uses previously projected for this site in the 2004 FEIS (cultural, community facility), a new traffic and parking preliminary assessment is necessary to determine if the revised program would exceed the CEQR threshold of 50 net action-generated vehicle trips per hour (vph) in the surrounding area. A preliminary trip generation was used to determine potential changes in impacts on traffic and parking in the area surrounding the BAM South site as a result of the proposed modified development on Site EE.

Traffic

Table 9 shows the transportation planning assumptions used to assess how many vehicle trips per hour (vph) the proposed modified development would generate in the surrounding area, and Table 10 shows the total net travel demand for the proposed modified development and compares it to the 2004 FEIS travel demand for Site EE; a comparison with the travel demand for the 2008 project is also provided for reference.

As shown in Table 10, the proposed modified development would generate a total of approximately 51, 81, and 91 vph during the AM, midday, and PM peak hours, respectively, compared to 15, 69, and 53 vph for the project analyzed for Site EE in the 2004 FEIS and 61, 87, and 95 vph for the project analyzed for Site EE in the 2008 Technical Memorandum. Therefore, as shown in Table 10, the incremental change resulting from the proposed modified development would be 36, 12, and 38 vph during the AM, midday and PM peak hours, respectively, compared to the 2004 FEIS. As the net increments resulting from the proposed modifications fall below the 50 vph CEQR threshold for all peak hours, they are not expected to result in any significant adverse traffic impacts not already disclosed in the 2004 FEIS.

TABLE 9
Proposed Modified Development on Site EE - Transportation Planning Assumptions

Land Use:	**Local Retail**	**Residential**	**Cinema**	**Cultural Uses**
Size/Units:	25,000 zsf	400 DU	600 seats	33,500 zsf
Trip Generation:	(1)	(4)	(6)	(8)
Weekday	205	8.075	3.26	40.24
	per 1,000 sf	per 1,000 sf	per seat	per 1000 sf
Temporal Distribution:	(2)	(4)	(6)	(8)
AM	3.1%	9.1%	0.0%	0.6%
MD	19.0%	4.7%	3.0%	11.5%
PM	9.6%	10.7%	8.0%	10.3%
	(1)	(5)	(7)	(9)
Modal Splits:	AM/PM/SAT	AM/MD/PM	AM/MD/PM	AM/MD/PM
Auto	2.0%	13.0%	32.0%	15.0%
Taxi	3.0%	1.0%	4.0%	0.0%
Subway	4.0%	65.0%	22.0%	30.0%
Bus	6.0%	4.0%	20.0%	15.0%
Walk/Other	85.0%	17.0%	22.0%	40.0%
	100.0%	100.0%	100.0%	100.0%

	(1)		(5)		(6)		(8)	
In/Out Splits:	In	Out	In	Out	In	Out	In	Out
AM	50%	50%	20.0%	80.0%	50%	50%	100%	0%
MD	50%	50%	51.0%	49.0%	62%	38%	71%	29%
PM	50%	50%	65.0%	35.0%	54%	46%	24%	76%

Vehicle Occupancy:	(2)	(5)	(6)	(9)
Auto	2.00	1.19	2.3	2.7
Taxi	2.00	1.4	2.4	2.7
Truck Trip Generation:	(3)	(3)	(7)	(3)
	0.35	0.07	0.10	0.29
	per 1,000 sf	per DU	per seat	per 1000 gsf
	(3)	(3)	(3)	(3)
AM	7.7%	12.0%	7.7%	10.0%
MD	11.0%	8.7%	11.0%	11.0%
PM	1.0%	1.0%	1.0%	2.0%

	In	Out	In	Out	In	Out	In	Out
AM/MD/PM	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

Notes :

(1) City Environmental Quality Review (CEQR) Technical Manual.
(2) Downtown Brooklyn Development FEIS, April 2004.
(3) Curbside Pickup & Delivery Operations & Arterial Traffic Impact, FHWA, February 1981.
(4) City Environmental Quality Review (CEQR) Technical Manual. Saturday residential rate based on ratio of weekday/Saturday rate from ITE Trip Generation, 7th Edition, Land Use 220(Apartment).
(5) Model split and vehicle occupancy data are based on 2000 census Journey to Work data. Pushkarev & Zupan, "Urban Space for Pedestrian". For temporal distribution and in/out directional splits.
(6) Loews Elmhurst Multiplex , FEIS, Jan. 2000
(7) Atlantic Center Plaza FEIS, 1996.
(8) Based on Brooklyn Public Library data and data from the American Museum of Natural History Planetarium and North Side Project EIS, May 1996.
(9) PHA assumptions from Downtown Brooklyn Development FEIS, April 2004. Vehicle occupancy data from Lincoln Center data, Oct 2001,

TABLE 10
Proposed Modified Development on Site EE - Trip Forecast Summary

Land Use:		Local Retail		Residential		Cinema		Cultural Uses		TOTAL ALL USES
Size/Units:		25,000 zsf		400 DU		600 seats		33,500 zsf		
Peak Hour Trips:										
	AM	159		294		0		8		461
	MD	974		152		59		155		1,340
	PM	492		346		157		139		1,134
Person Trips:										
		In	Out	In	Out	In	Out	In	Out	Total
AM	**Auto**	2	2	8	31	0	0	1	0	44
	Taxi	2	2	1	2	0	0	0	0	7
	Subway	3	3	38	153	0	0	2	0	199
	Bus	5	5	2	9	0	0	1	0	22
	Walk/Other	68	68	10	40	0	0	3	0	189
	Total	80	80	59	235	0	0	7	0	461
		In	Out	In	Out	In	Out	In	Out	Total
MD	**Auto**	10	10	10	10	12	7	17	7	83
	Taxi	15	15	1	1	1	1	0	0	34
	Subway	19	19	50	48	8	5	33	13	195
	Bus	29	29	3	3	7	4	17	7	99
	Walk/Other	414	414	13	13	8	5	44	18	929
	Total	487	487	77	75	36	22	111	45	1,340
		In	Out	In	Out	In	Out	In	Out	Total
PM	**Auto**	5	5	29	16	27	23	5	16	126
	Taxi	7	7	2	1	3	3	0	0	23
	Subway	10	10	146	79	19	16	10	32	322
	Bus	15	15	9	5	17	14	5	16	96
	Walk/Other	209	209	38	21	19	16	13	42	567
	Total	246	246	224	122	85	72	33	106	1,134
Vehicle Trips :										
		In	Out	In	Out	In	Out	In	Out	Total
AM	**Auto (Total)**	1	1	7	26	0	0	0	0	35
	Taxi (Balanced)	2	2	2	2	0	0	0	0	8
	Truck	0	0	2	2	2	2	0	0	8
	Total	3	3	11	30	2	2	0	0	51
		In	Out	In	Out	In	Out	In	Out	Total
MD	**Auto (Total)**	5	5	8	8	5	3	6	3	43
	Taxi (Balanced)	12	12	2	2	0	0	0	0	28
	Truck	0	0	1	1	3	3	1	1	10
	Total	17	17	11	11	8	6	7	4	81
		In	Out	In	Out	In	Out	In	Out	Total
PM	**Auto (Total)**	3	3	24	13	12	10	2	6	73
	Taxi (Balanced)	5	5	2	2	2	2	0	0	18
	Truck	0	0	0	0	0	0	0	0	0
	Total	8	8	26	15	14	12	2	6	91

	Proposed Project			2004 FEIS	2008 Tech Memo	NET DIFFERENCE - Proposed Project Vs. 2004 FEIS	NET DIFFERENCE - Proposed Project Vs. 2008 Tech Memo
Total Vehicles	In	Out	Total	Total	Total	Difference <50	Difference <50
AM	16	35	51	15	61	36	-10
MD	43	38	81	69	87	12	-6
PM	50	41	91	53	95	38	-4

It should also be noted that, subsequent to approval of the 2004 project, NYCDOT has initiated a number of street/safety improvements on Hanson Place and Third Avenue, in the vicinity of Site EE. For Hanson Place, the plan, which is currently in the implementation phase, includes closing the uncontrolled slip from Flatbush/Fourth Avenues and constructing a median, converting Hanson Place to two-way operation between Ashland Place and South Portland Avenue, and installing temporary multi-way stop-controlled crosswalks on Hanson Place and St. Felix Street. These measures, which are intended to improve safety and traffic circulation in the area, would not affect any of the findings of the 2004 FEIS.

Parking

The proposed modified development would include a new public parking garage with approximately 365 spaces (compared to 466 for the 2004 approved project and 450 for the 2008 project). The anticipated hourly parking demand associated with all the different components of the proposed modified development is presented in Table 11. As shown in the table, the maximum parking demand associated with the proposed modified development would be approximately 80 spaces in the 8-9 AM peak hour, 88 spaces in the 12-1 PM peak hour, and 119 spaces in the 5-6 PM peak hour. This is higher than the parking demands identified for Site EE in the 2004 FEIS (3 in the AM, 61 in the midday, and 50 in the PM). It should be noted however that, whereas the public demand associated with the cultural use assumed for Site EE in the 2004 FEIS peaked during the midday period, the parking demand associated with the predominantly residential proposed modified development would peak during the evening and overnight hours. As shown in Table 11, the garage's peak utilization (153 spaces) would occur during the 8-9 PM period, mostly due to the cinema component of the development.

TABLE 11
Proposed Modified Development on Site EE - Hourly Parking Demand - Weekday

	Neigbourhood Retail 25,000 zsf		Rental Residential 400 du		Cinema 600 seats		Cultural Uses 33,500 gsf		Weekday Accumulation
Overnight demand	**0**		**116**		**0**		**0**		**116**
	In	Out	In	Out	In	Out	In	Out	
12-1 AM	0	0	1	1	0	0	0	0	116
1-2	0	0	1	0	0	0	0	0	117
2-3	0	0	0	0	0	0	0	0	117
3-4	0	0	0	0	0	0	0	0	117
4-5	0	0	0	0	0	0	0	0	117
5-6	0	0	1	4	0	0	0	0	114
6-7	0	0	3	11	0	0	0	0	106
7-8	0	0	4	11	0	0	0	0	99
8-9	1	1	7	26	0	0	0	0	80
9-10	1	0	6	10	0	0	1	0	78
10-11	2	1	6	11	0	0	6	1	79
11-12	2	2	7	9	2	0	6	2	83
12-1 PM	5	5	8	8	5	3	6	3	88
1-2	2	2	9	9	7	4	6	3	94
2-3	2	2	9	9	8	6	4	4	96
3-4	2	2	14	8	8	9	5	6	100
4-5	2	2	23	13	10	6	2	6	110
5-6	3	3	24	13	12	10	2	6	119
6-7	1	2	18	9	22	11	0	4	134
7-8	1	2	16	10	18	11	0	3	143
8-9	1	1	12	5	22	19	0	0	153
9-10	1	1	3	4	17	23	0	0	146
10-11	0	0	2	3	4	23	0	0	126
11-12	0	0	2	2	2	12	0	0	116
	26	26	176	176	137	137	38	38	

With a 365-public parking facility on-site, the demand generated by the proposed modified development would be readily accommodated by this facility. In addition, it is assumed that the current demand from the existing 124-space parking lot on Site EE would also utilize the new garage. Although the 2004 FEIS showed a midday utilization of 94 spaces for this facility (which was assumed to have a capacity of 110 spaces), recent field surveys conducted in April 2009 indicate that this parking lot currently has a utilization of 49 spaces in the AM, 53 spaces in the midday, and 26 spaces in the PM. Even assuming that all of the current demand from the existing parking lot on the site would be added to the new 365-space parking facility, the total peak midday demand would be estimated at approximately 141 spaces, leaving approximately 224 public parking spaces available for use by other weekday users in the area.

The parking analysis in the 2004 FEIS projected a parking deficit of 998 spaces in the midday period with the 2004 Downtown Brooklyn Development project, but no significant adverse parking impact was disclosed because the parking facilities provided as part of that action were sufficient to accommodate all of the parking demand associated with the development. This finding would not change as a result of the proposed modifications. As shown in Table 12 below, although the parking garage in the proposed modified development would have a slightly smaller capacity, at 365 spaces compared to 466 in the FEIS, this reduction in capacity, when combined with the reduction in demand associated with the existing on-site parking lot, is not expected to result in any significant adverse parking impacts in the area. As shown in Table 12, the proposed modifications are estimated to result in a 2013 With-Action parking deficit of 1,078 spaces in the midday period.

TABLE 12
2013 Future Weekday Midday Off-Street Parking Conditions With Proposed Modifications

	Total Public Space Capacity	Spaces Added	New Project Demand	Demand from Displaced Lot	Total On-Site Demand	Total Public Space Demand	Net Public Spaces Available
2004 FEIS – 2013 No-Action Conditions	10,839					12,018	-1,179
2004 FEIS – 2013 With-Action Conditions	11,275					12,273	- 998
2004 FEIS Assumptions for Site EE		466	61	94	155		311
2008 Technical Memorandum		450	109	53*	162		288
Proposed Modifications for Site EE		365	88	53	141		224
Net Difference (2008 Vs. Current)		- 85	- 21	0	- 21		- 64
2013 Conditions with Proposed Modifications	11,174					12,252	-1,078

* As no off-street parking assessment was provided in the 2008 Technical Memorandum, demand from displaced lot is assumed to be the same for 2008 and 2009 conditions.

Although this would be slightly higher (by 80) than the deficit of 998 shown in the FEIS, it would continue to be less than the deficit projected in the future No-Action Conditions. As such, the proposed modifications would not result in any significant adverse parking impacts, and the findings of both the 2004 FEIS relative to off-street parking would not change due to the reconfigured garage on the project site.

Transit and Pedestrians

The 2004 FEIS determined that the Downtown Brooklyn Development project would result in the potential for significant adverse impacts at two street stairs at the Jay Street-Borough Hall subway station in one or both peak periods, as well as a significant adverse impact in the PM peak hour to NYC Transit's B25 bus route in the peak eastbound direction. Pedestrian trips en route to and from projected development sites would impact one crosswalk on Jay Street at Willoughby Street and one crosswalk on Albee Square West/Gold Street at Willoughby Street. None of the impacted subway stair or pedestrian facilities identified in the 2004 FEIS are located in the immediate vicinity of Site EE.

According to the general thresholds used by the Metropolitan Transportation Authority specified in the *CEQR Technical Manual*, detailed transit analyses are not required if a proposed project is projected to result in less than 200 peak hour rail or bus transit riders, because a proposed development that generates such a low number of transit riders is unlikely to create a significant impact on the current transit facilities.

As shown in Table 10 above, the proposed modified development is expected to generate a total of approximately 199, 195 and 322 subway trips during the AM, midday, and PM peak hours, respectively. When compared to the subway trips estimated for Site EE in the 2004 FEIS (32, 326, and 261, respectively), the proposed modified development would result in a net increase of 167 subway trips in the AM peak hour and 61 subway trips in the PM peak hour, but a net decrease of 131 subway trips in the midday peak period. As the net increments in subway transit resulting from the proposed modifications (compared to the 2004 FEIS) fall below the threshold of 200 transit trips for a detailed transit analysis, they are not expected to result in any new significant adverse subway transit impacts, and no detailed analysis is necessary.

Similarly, as shown in Table 10 above, the proposed modified development is expected to generate a total of approximately 22, 99 and 96 bus trips during the AM, midday, and PM peak hours, respectively. When compared to the bus trips estimated for Site EE in the 2004 FEIS (9, 128, and 103, respectively), the proposed modified development would result in a net increase of 13 bus trips in the AM peak hour, but a net decrease of 29 and 7 bus trips in the midday and PM peak periods, respectively.. As the net increments in bus transit resulting from the proposed modifications (compared to the 2004 FEIS) fall well below the threshold of 200 transit trips for a detailed transit analysis, they are not expected to result in any significant adverse bus transit impacts, and no detailed analysis is necessary.

For pedestrian trips, the proposed modified development is expected to generate a total of approximately 189, 929 and 567 walk-only trips during the AM, midday, and PM peak hours, respectively (refer to Table 10). When compared to the pedestrian trips estimated for Site EE in the 2004 FEIS (78, 668, and 442, respectively), the proposed modified development would result in a net increase of 111 pedestrian trips in the AM peak hour, 261 in the midday, and 125 pedestrian trips in the PM peak period. Although the net increment in pedestrian trips resulting from the proposed modifications would exceed the threshold of 200 trips in the midday period (compared to the 2004 project), it should be noted that these trips would be distributed along sidewalks adjacent to all three frontages of the project site. As such, the net increment in pedestrian trips along each of the sidewalks or other pedestrian elements adjacent to the project site would be less than the CEQR threshold of 200 trips in any peak hour. Therefore, no

significant adverse impacts to pedestrian conditions are anticipated, and no detailed analysis is necessary.

As such, the proposed modified development on Site EE would not result in any new significant adverse impacts to transit or pedestrian conditions, and the findings of the 2004 FEIS relative to transit and pedestrian conditions would not change.

Air Quality

The 2004 FEIS screening analysis of air emissions due to heating, ventilation and air conditioning (HVAC) equipment determined that there would be no significant adverse air quality impacts due to the projected development on Site EE. A parking analysis was performed for the proposed public parking garage on Site EE, which determined that no significant adverse air quality impacts would occur from vehicles using the proposed garage.

Mobile Sources

According to the *CEQR Technical Manual* screening threshold criteria for this area of the City, if 50 or more project-generated vehicles pass through a signalized intersection within the Downtown Brooklyn area of concern in any given peak period, there is a potential for mobile source air quality impacts and a detailed analysis is required. As discussed in the "Traffic and Parking" section above, there would be a maximum incremental increase of approximately 38 vehicle trips in any peak hour compared to the Site EE program analyzed in the 2004 FEIS, which would be below the 50 vehicle trips per hour CEQR threshold for a detailed mobile source air quality analysis in Downtown Brooklyn. Therefore, the proposed modified development would not result in any new significant adverse mobile source air quality impacts, and would not alter the findings of the 2004 FEIS relative to mobile source air quality.

Stationary Sources

The proposed modified development would have an overall height of approximately 385 feet, and would consist of a total of approximately 347,786 zsf (an estimated 386,200 gross square feet, excluding parking). In accordance with CEQR guidelines, the stack height for the emissions vent was estimated at three feet higher than the building height of 385 feet. Based on the development's square footage, anticipated fuel type (natural gas), and estimated stack height, Figure 3Q-9 indicates that the minimum required distance between the proposed modified development and a building of similar or greater height would be approximately 87 feet (see Figure 8). The only building of similar or greater height in the vicinity of the site is the approximately 512-foot tall Williamsburgh Savings Bank building, which was recently converted to residential use. As the Williamsburgh Savings Bank is located across the 75-foot wide Ashland Place from the project site, and as the tallest portion of the proposed modified development is located on the northern part of the site, away from Hanson Place, the vent for the proposed development would be located more than 100 feet away from the Williamsburgh Savings Bank building. As this would exceed the minimum required distance identified in Figure 8, no significant air quality impacts associated with HVAC systems would be anticipated as a result of the proposed modified development.

As discussed in the "Land Use and Zoning" section above, the area surrounding the project site is a mix of commercial, retail, residential, and cultural uses. The proposed modified development would not be located within 1,000 feet of a large emission source such as a power generating plant. It would also not be located within 400 feet of manufacturing or processing facilities or a stack emission associated with commercial, institutional, or large-scale residential development. In addition, the proposed modified development would not be located near a medical, chemical, or research lab.

Therefore, the proposed modified development would not result in any new significant adverse stationary source air quality impacts, and would not alter the findings of the 2004 FEIS relative to stationary source air quality. However, it should be noted that the stationary source air quality assessment was performed for the current proposed design of the building. Should the design of the building change so that the location of the stack release point changes, this issue may need to be re-examined.

Noise

Mobile Source Noise

As discussed in the "Traffic and Parking" section above, there would be a maximum incremental increase of approximately 38 vehicle trips in any peak hour compared to the Site EE program analyzed in the 2004 FEIS. With such a small incremental increase in vehicular traffic, the proposed modified development would not result in a doubling of PCE values in the study area, and would therefore not result in any new significant adverse mobile source noise impacts. Therefore, the proposed modifications would not alter the findings of the 2004 FEIS relative to mobile source noise.

Noise Attenuation

The 2004 FEIS concluded that an (E) designation would be placed on projected and potential development sites in order to create a mechanism for providing sufficient building noise attenuation. Site EE (Block 2110, Lot 3) was identified as requiring 35 dBA of window wall attenuation, and an (E) designation is currently mapped on the site.

As the noise measurements presented in the 2004 FEIS were taken in 2003, more recent noise monitoring data were researched in the vicinity of the project site in order to determine whether ambient noise levels adjacent to the site have increased to a degree that would warrant additional attenuation. The *Atlantic Yards Arena and Redevelopment Project Final EIS* (November 2006) identified and measured ambient noise levels in the vicinity of the project site, along 4th Avenue between Atlantic Avenue and Pacific Street (noise measurements made in 2006). This receptor location is approximately two blocks to the south of the project site, and is therefore assumed to be representative of noise conditions for the BAM South site.Based on ambient noise levels in the vicinity of the project site, with exterior $L_{10(1)}$ noise levels ranging from 75 to 80 dBA,[2] the 2008 development was determined to require an attenuation of 35 dBA. As the proposed

[2] Noise levels based on *Atlantic Yards Arena and Redevelopment Project FEIS*; November 2006, as shown in Table 11 of the July 14, 2008 Technical Memorandum.

modified development would be located on the same project site, and would contain a similar mix of uses to the 2008 development, it would also require an attenuation of 35 dBA.

This can be achieved by including standard double-glazed windows with good sealing properties, and closed window condition with an alternate method of ventilation. In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, central air conditioning or air conditioning sleeves containing air conditioners or HUD approved fans. Such measures would provide a minimum of 35 dBA of indoor noise attenuation, and would provide sufficient attenuation to satisfy CEQR requirements. Furthermore, this level of attenuation would satisfy the (E) designation requirements of the 2004 FEIS.

In addition, the proposed building's mechanical systems (i.e., heating, ventilation, and air conditioning) would be designed to meet all applicable noise regulations and to avoid producing levels that would result in any significant increase in ambient noise levels. Therefore, the proposed modified development on Site EE would not result in any new significant adverse noise impacts, and would not alter the findings of the 2004 FEIS.

Construction Impacts

Similar to other developments in the City, construction of the proposed modified development would result in temporary disruption to the surrounding area, including some noise, and traffic associated with the delivery of materials, construction machinery, and arrival of workers on the site. Given the relatively small size of the project, it would not result in a significant amount of construction related traffic or mobile source emissions from construction vehicles. Construction of the development would be completed in approximately 24-28 months, and would be subject to compliance with the New York City Noise Code.

As noted above, given its proximity to the Williamsburgh Savings Bank building and the BAM historic district, the proposed modified development would require a construction protection plan in order to avoid potential physical impacts to these resources from ground-borne vibrations or other potential construction-related issues. The City has procedures for avoidance of damage to historic structures from adjacent construction. Building Code section 27-166 (C26-112.4) serves to protect historic structures by requiring that all lots, buildings, and service facilities adjacent to foundation and earthwork areas be protected and supported in accordance with the requirements of Building Construction Subchapter 7 (Article) and Building Code Subchapters 11 and 19 (Article). In addition, the New York City Department of Buildings' Technical Policy and Procedure Notice (PPN) #10/88, supplements these procedures by requiring a monitoring program to reduce the likelihood of construction damages to adjacent historic structures and to detect at an early stage the beginnings of damage so that construction procedures can be changed.

In addition, further hazardous materials investigation and/or remediation would be performed on Site EE prior to development.

Therefore, there would be no new construction-period impacts in the area surrounding Site EE as a result of the proposed modifications.

Public Health

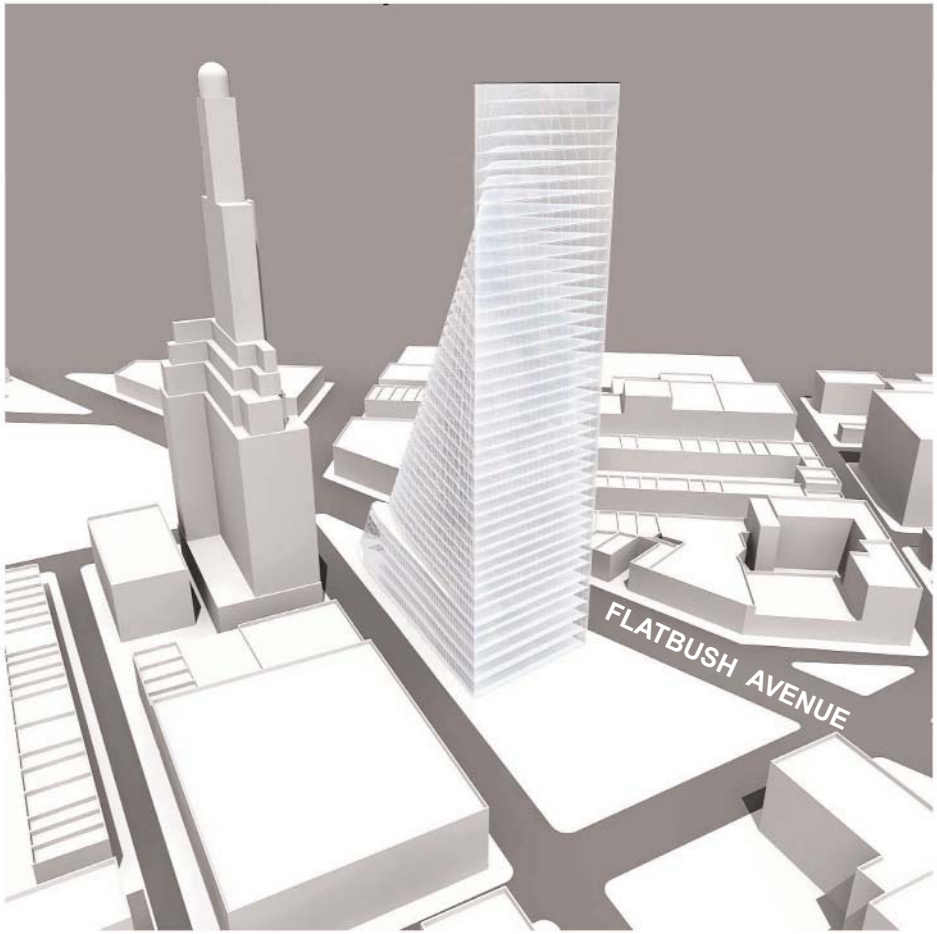
The 2004 FEIS did not provide an analysis of public health, as the 2008 project did not meet any of the thresholds warranting a public health assessment according to the guidelines of the *CEQR Technical Manual*. The proposed modified development on Site EE would not alter these conditions, as no significant new air quality, hazardous materials, or noise impacts have been identified, and no changes to anticipated solid waste management practices would occur. Therefore, a public health analysis is not required.

IV. CONCLUSION

The 2009 changes to the proposed program for development on Site EE would not result in any significant adverse environmental impacts that had not been previously identified in either the 2004 FEIS or the 2008 Technical Memorandum. Therefore, no additional analysis or supplemental environmental impact statement is warranted for the proposed changes to the project described herein.

Robert R. Kulikowski, Ph.D.
Assistant to the Mayor

September 22, 2009
Date



AERIAL VIEW LOOKING SOUTH

VIEW OF RETAIL ENTRY FROM FLATBUSH

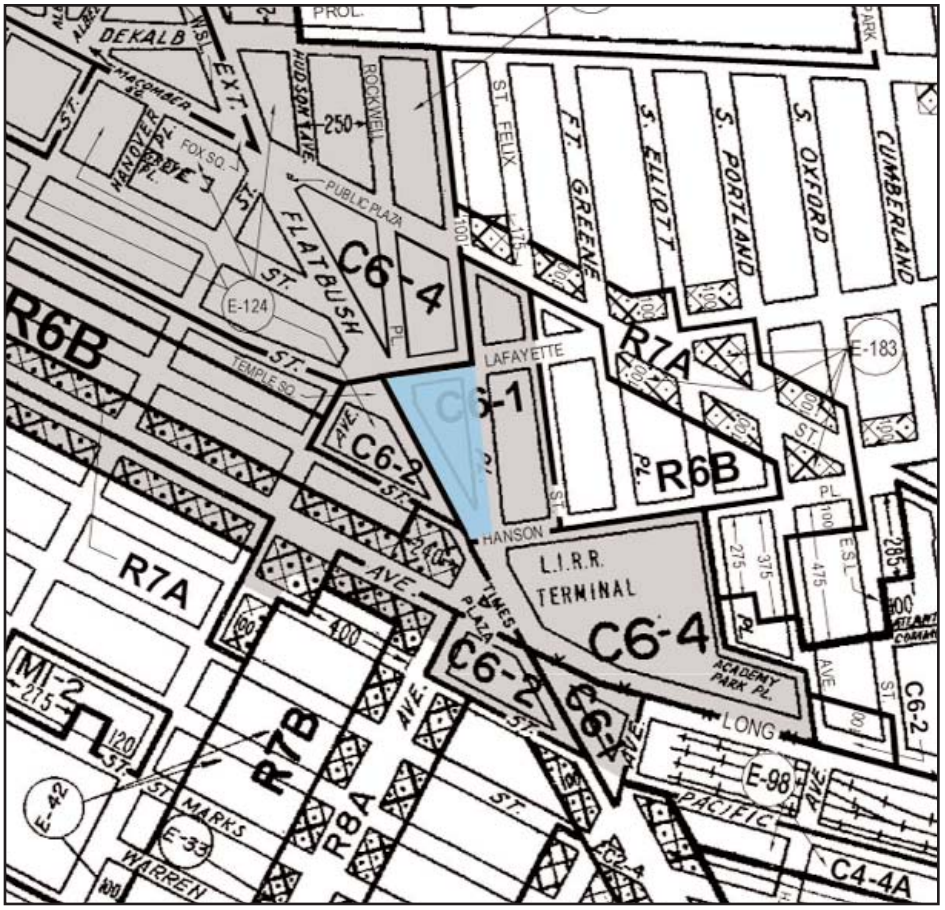
FOR ILLUSTRATIVE PURPOSES ONLY

Source: TEN ARQUITECTOS

2009 Modification Technical Memorandum for BAM South Development **Figure 1**

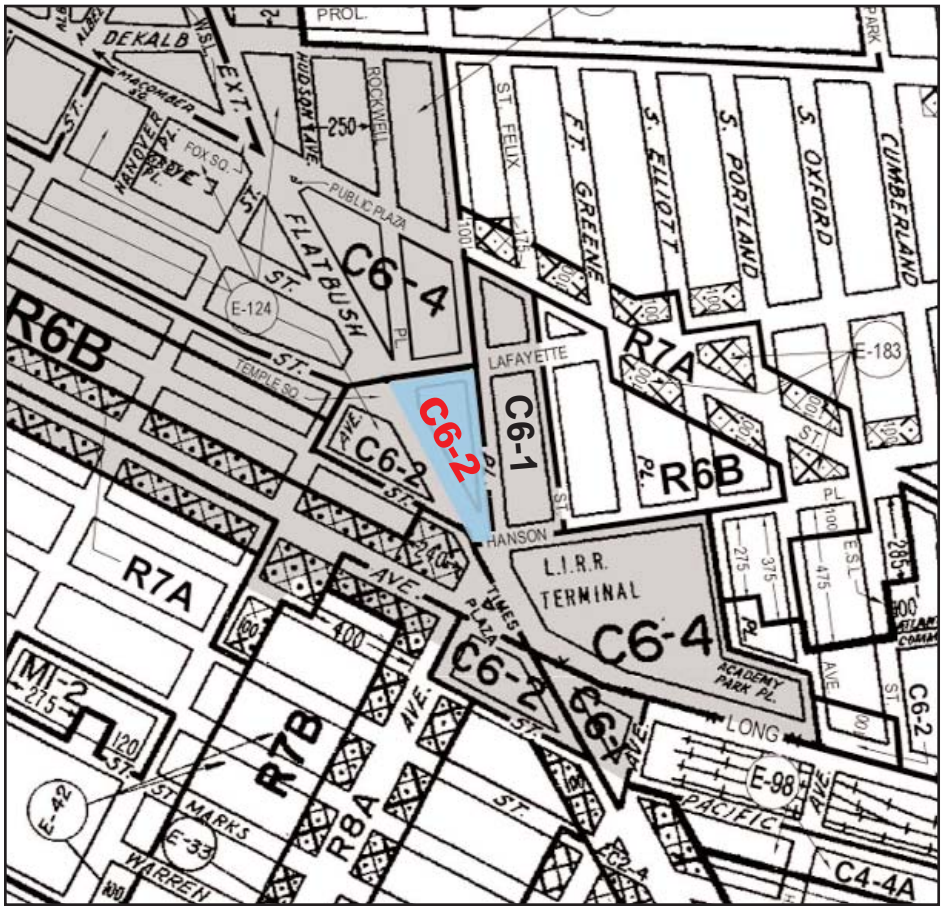
2008 Project - Massing Studies from 2008 Technical Memorandum

EXISTING ZONING

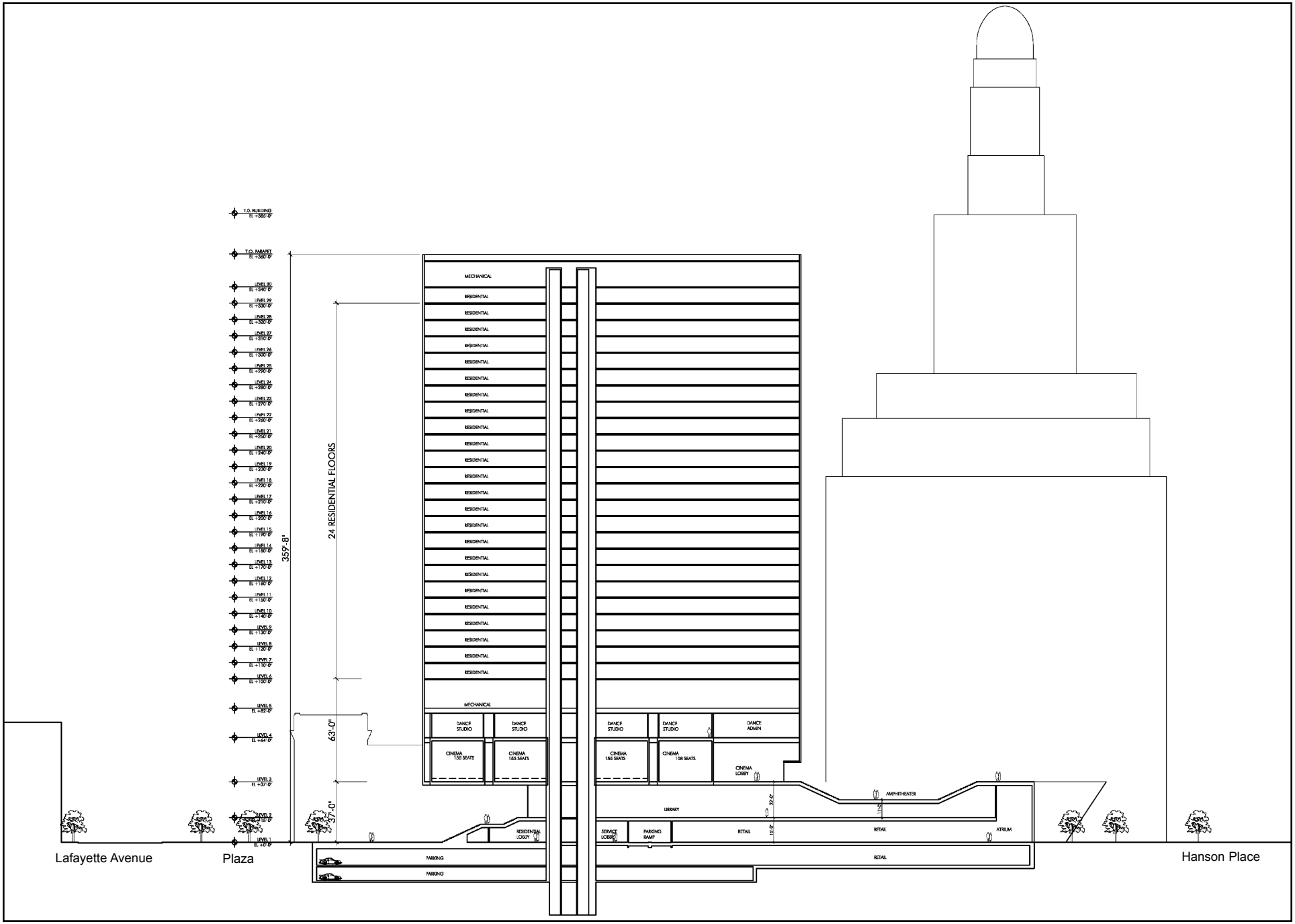


Area to be Rezoned

PROPOSED ZONING



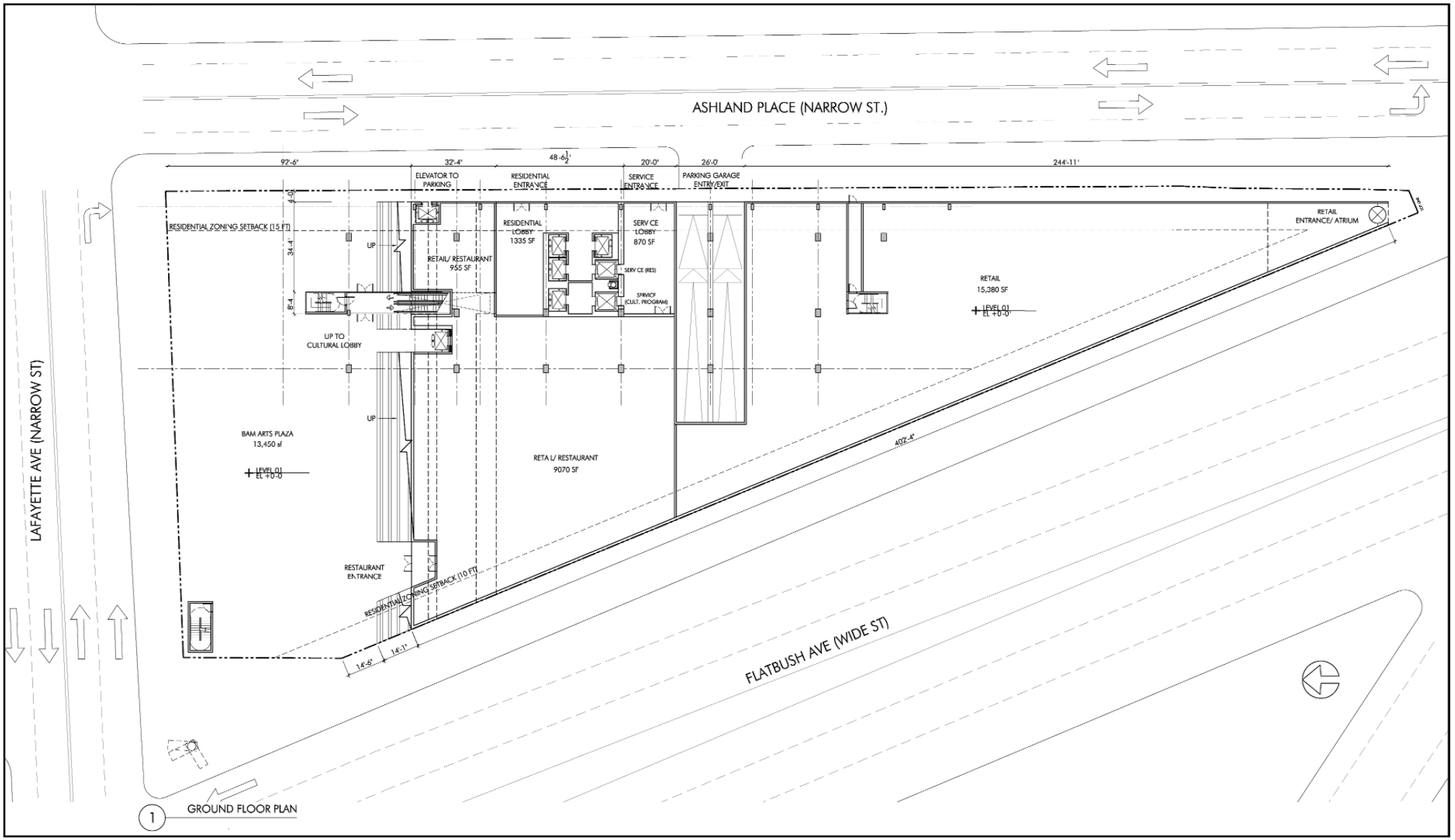
Area to be Rezoned



Source: TEN ARQUITECTOS

2009 Modification Technical Memorandum for BAM South Development **Figure 3**

BAM South Proposed Modified Development - North-South Building Section (View Looking East)



Source: TEN ARQUITECTOS

2009 Modification Technical Memorandum for BAM South Development **Figure 4**

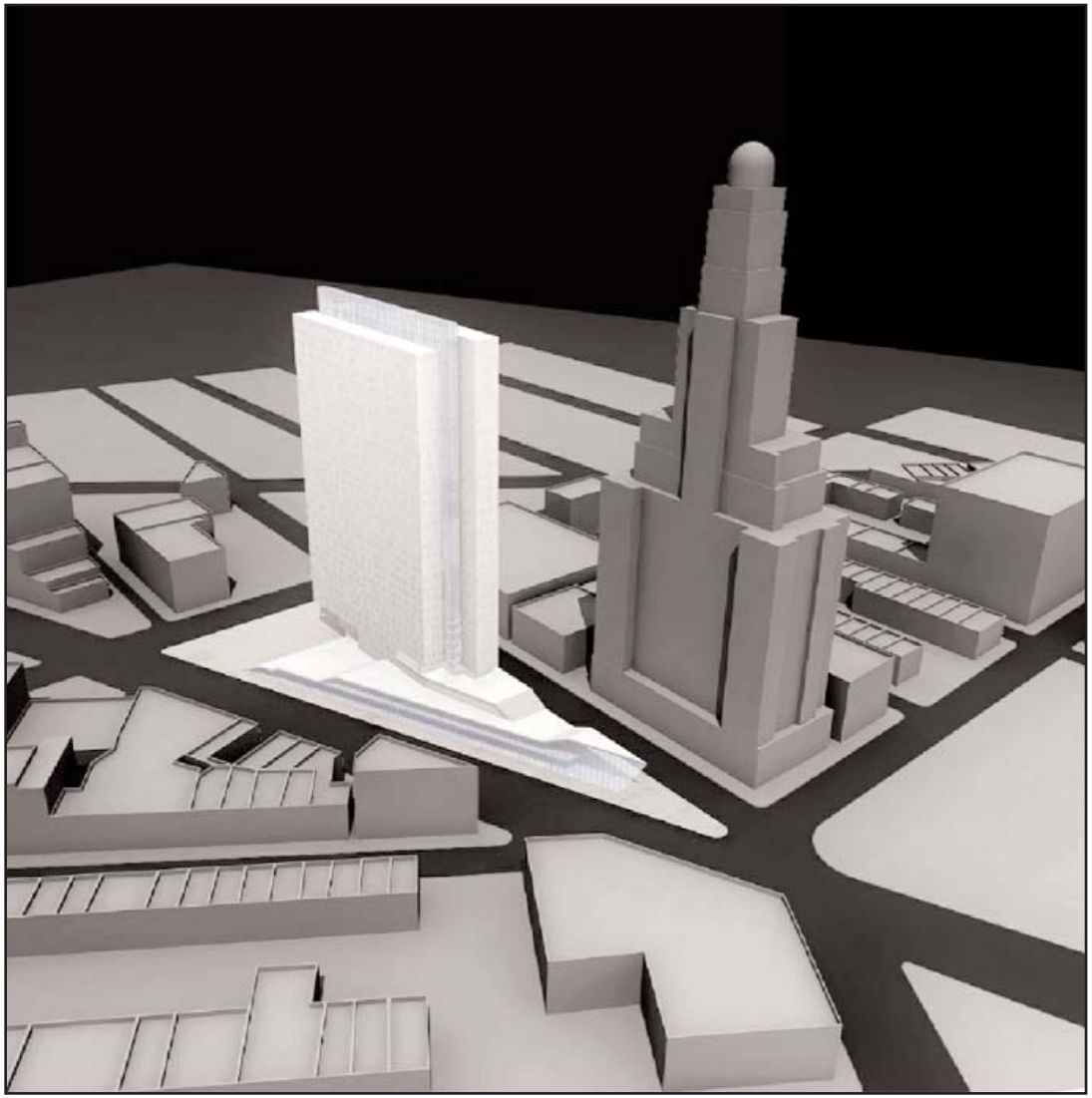
BAM South Proposed Modified Development - Ground Floor Plan

Open Spaces and Historic Resources within the Modified Proposed Development's Shadow Radius

Legend

- Development Site
- Modified Proposed Development
- Shadow Radius (1,644 feet)
- Area Not Affected by Modified Proposed Development's Shadow
- (2) Open Space Resources (see Table 6)
- (B) State/National Register Historic Resource and/or NYC Landmark
- Historic Districts
- S/NR-Listed Fort Greene Historic Expansion District

View Looking Southwest from Lafayette Ave.



Aerial view looking northeast

FOR ILLUSTRATIVE PURPOSES ONLY

Source: TEN ARQUITECTOS

FOR ILLUSTRATIVE PURPOSES ONLY

Source: TEN ARQUITECTOS

2009 Modification Technical Memorandum for BAM South Development **Figure 7**

BAM South Proposed Modified Development - Photo Montage (Street Level View From Atlantic Avenue Looking North)

FIGURE 3Q-9
NO_2 BOILER SCREEN
RESIDENTIAL DEVELOPMENT - NATURAL GAS