TECHNICAL MEMORANDUM

CEQR Number 03DME016K: Downtown Brooklyn Development Project – TM003
BAM South Development (a.k.a. Site EE)

July 14, 2008

I. INTRODUCTION

The purpose of this Technical Memorandum is to determine whether the proposed changes to the previously approved Downtown Brooklyn Development project, which was the subject of the April 2004 *Downtown Brooklyn Development Final Environmental Impact Statement* (FEIS), or changes in background conditions from 2004 to the present would alter the conclusions presented in the 2004 FEIS and would result in any significant adverse environmental impacts that were not previously identified.

The program and building envelope 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 hotel, residential, retail, cinema and other cultural uses. In addition, the proposed building would have a maximum height of approximately 495 feet (36 stories), 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 public 450-space below-grade garage. A detailed description of the proposed development, which is expected to be completed in 2011, 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 BAM South development, and assesses the resulting effects on the previous environmental analysis presented in the 2004 FEIS. The potential impacts of the modifications on each of the 18 technical areas analyzed in the FEIS are discussed below. The potential impacts with respect to construction are also examined. 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 the FEIS.

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 modification technical memorandum found that there would be no additional significant adverse impacts in any of the CEQR technical areas analyzed in the 2004 *Downtown Brooklyn Development FEIS* as a result of the modified development planned for this site or the changes in background conditions. Furthermore, there are no changes in circumstances surrounding the project, nor is there any newly discovered information that would create any significant adverse environmental impacts.

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, to allow for greater commercial and residential density in the downtown area and to provide height and setback regulations and other massing and streetscape controls;
- 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 intended to facilitate a vibrant central business district with a bustling office core, strengthen connections with, and support the growth of, residential districts, improve the pedestrian and retail environment, support an expanding academic community and an array of cultural facilities in the district and create new open space. 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 agency0 – 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 of the FEIS was issued on April 30, 2004.

2004 Project – Project Site (Projected Development Site EE)

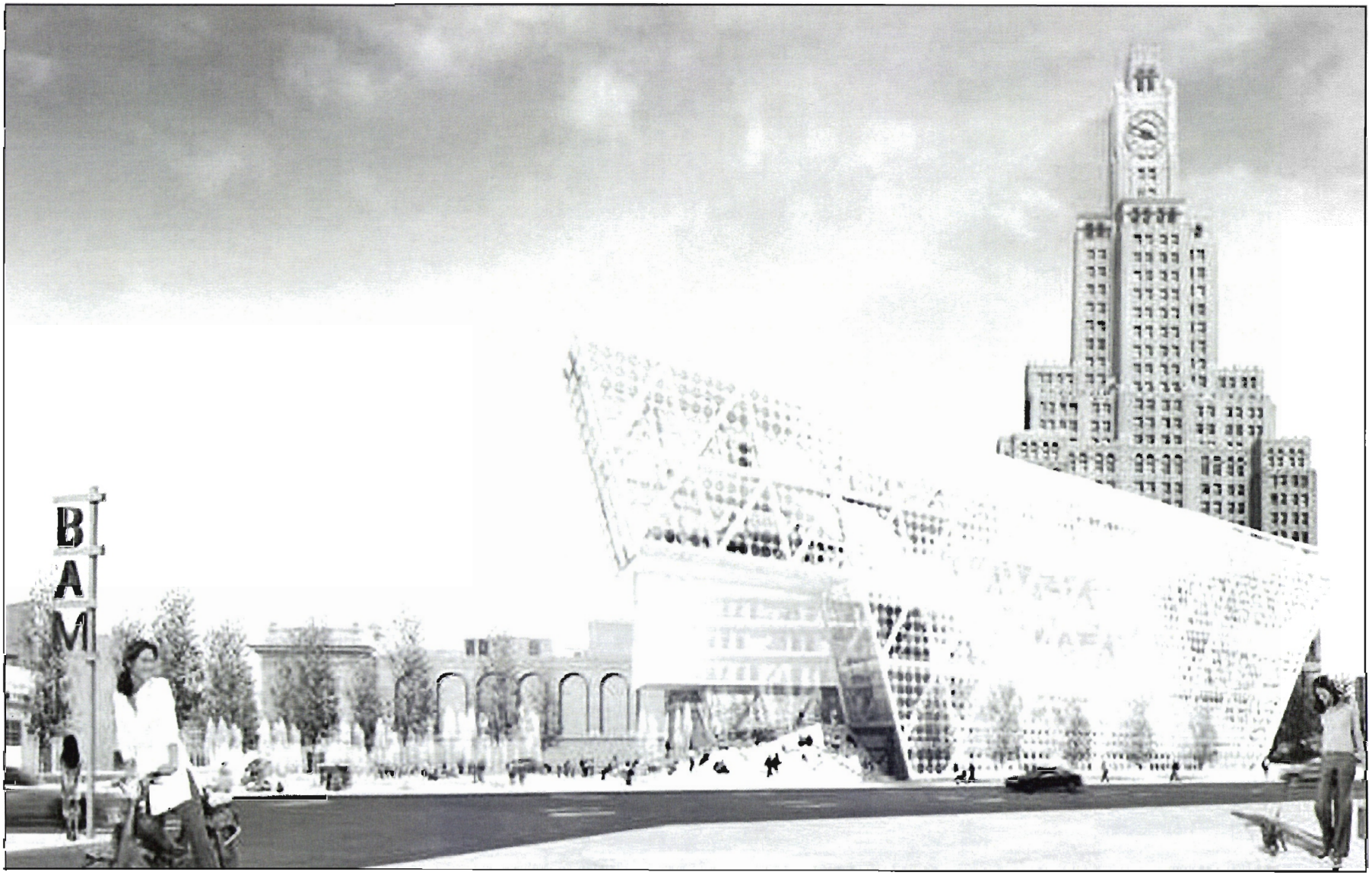
Although the actions proposed as part of the 2004 project affected the entire project area, the EIS analysis of changes to allowable use and bulk and other land use provisions was focused on those sites that were reasonably likely to undergo development within the foreseeable 10-year timeframe (by 2013). 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 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 below). 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. The FEIS itself did not provide specific renderings or bulk diagrams for this site, although plans for the library proposed at the time were widely circulated (refer to Figure 1). The library's design included a distinctive cantilevered glass envelope that provided a permeable, transparent structure and V-shaped plan.

Current Project

Since the Brooklyn Public Library has advised the City that it no longer intends to pursue previous plans to develop a 140,000 square foot Visual and Performing Arts Library on the site, the City is currently considering disposition of the site to a private developer, Two Trees Management Corp. Two Trees is proposing to construct 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. In



Source: http://architecture.nyc-arts.org/projects/slides?project_id=42&si=1&borough=Brooklyn&page=1

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

2004 Project - Rendering of Previously Proposed Visual & Performing Arts Library

order to obtain the proposed mix of uses on the site, there will also be 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 to preserve an easement for New York City Department of Transportation use.

Table 1 below shows the changes in the project program compared to the program for Site EE analyzed in the 2004 FEIS. As shown in the table, the proposed modified development would include a total of approximately 374,864 zsf of development, compared to 185,000 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 130,000 sf compared to the 2004 plan, and would introduce new residential floor area (190 units) as well as a new hotel use (approximately 125,928 zsf, 220 rooms). The proposed program is expected to include a 15,000 sf cinema (with approximately 600 seats), compared to a 40,000 sf theater analyzed in the FEIS. The proposed program is also expected to include a small, approximately 15,000 zsf neighborhood branch library, and 20,000 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 2,319 zsf less than what was analyzed in the FEIS, and the proposed public parking garage would include 16 fewer spaces than what was previously analyzed. In addition, the current program for Site EE includes an approximately 25,590 sf public plaza on the northern portion of the block, which was not included in the 2004 FEIS program.

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

Land Use	Development Program Analyzed for Projected Development Site EE in FEIS (ZSF)	Current Development Program (ZSF)	Net Difference (ZSF)
Community Facility/Cultural	140,000 zsf (library)	35,000 sf (15,000 zsf library and 20,000 3sf of miscellaneous cultural uses, TBD)	-105,000 zsf
Theater	40,000 zsf (performing arts)	15,000 zsf (600-seat non-profit cinema)	-25,000 zsf
Retail	15,000 zsf	12,681 zsf	-2,319 zsf
Hotel	-	125,928 zsf (220 rooms)	125,928 zsf (220 rooms)
Residential	-	186,255 zsf (190 dwelling units)	186,255 zsf (190 dwelling units)
Parking	466-space public parking garage	450-space public parking garage	-16 parking spaces
Open Space	-	An approximately 25,590 sf public plaza on northern portion of block	25,590 sf public plaza

In terms of the building being proposed, current preliminary plans call for a structure that would rise to a maximum height of approximately 495 feet (see building section in Figure 2). As shown in Figure 2, the lower floors of the proposed building would include the cinema, cultural and retail uses, while floors 5 through 12 would accommodate the proposed hotel, with 24 floors of

residential use above (floors 13 through 36). The building would be triangular in shape, reflecting the shape of the site. As shown in the ground floor plan in Figure 3, 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 entrances to the residential component. The entrances to the hotel component and the cinema/cultural space would be located on Flatbush Avenue, whereas the entrance to the retail use would be at the tip of the site, at the intersection of Ashland Place and Flatbush Avenue.

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. As shown in the table, the proposed modified development on Site EE would introduce a total of 168 employees and 399 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 Vs. 2008 Proposed modified Development

Users On-Site *	Site EE in 2004 FEIS	Proposed modified Development
Community Facility/Cultural space	180 employees	50 employees
Retail	38 employees	32 employees
Hotel	-	73 employees
Residential	-	399 residents, 8 employees
Parking	5 employees	5 employees
TOTAL	**223 employees**	**168 employees and 399 residents**

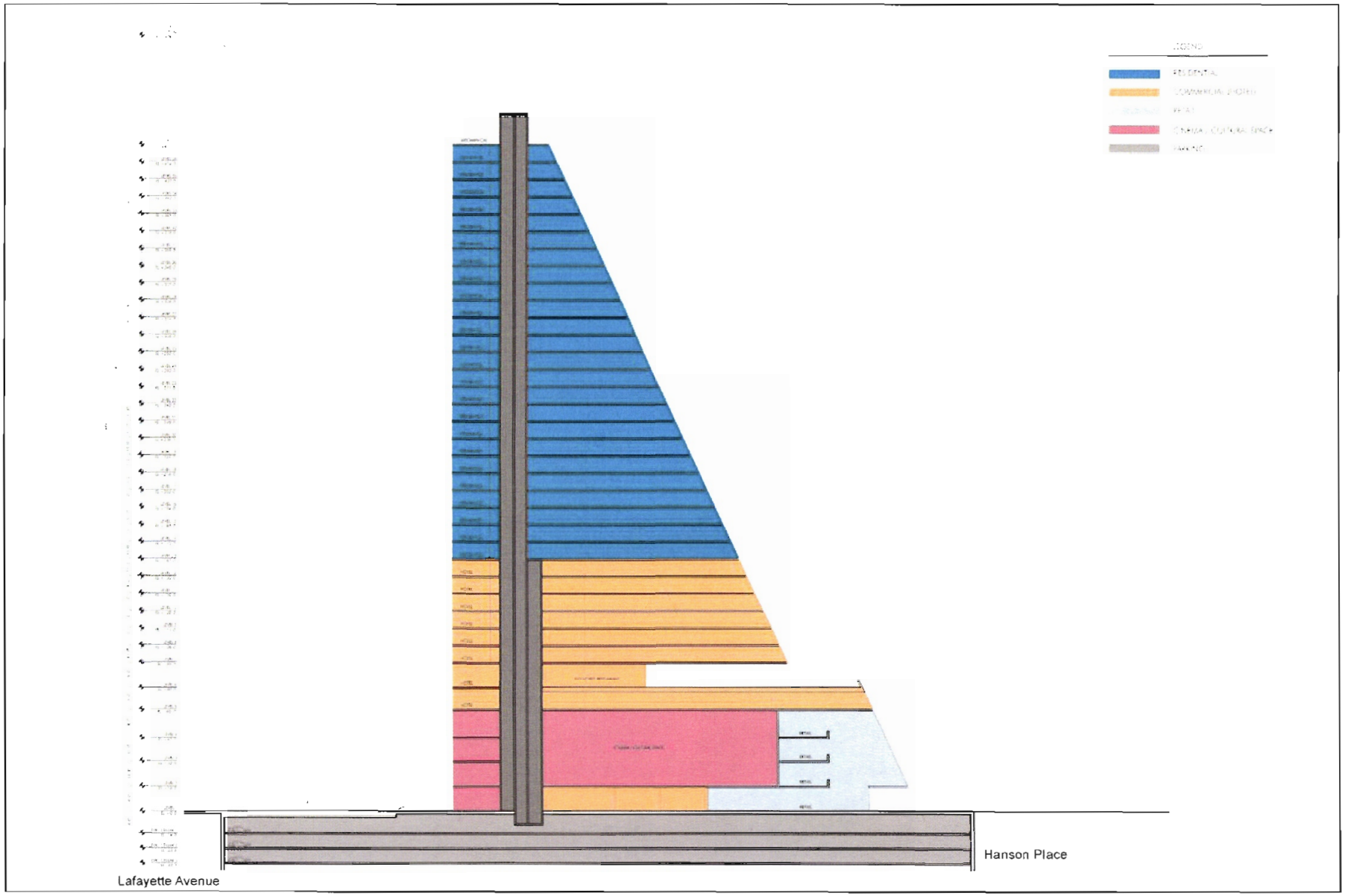
* Based on rates used in the 2004 FEIS, including: 2.1 residents per unit; 1 worker per 400 sf of general retail; 1 worker per 1,000 sf of community facility and cultural space; 1 worker per 25 dwelling units; 1 worker per 90 parking spaces. For hotel use, which was not assumed in 2004 FEIS, a ratio of 1 employee per 3 rooms is used.

III. ASSESSMENT OF POTENTIAL ENVIRONMENTAL EFFECTS OF PROPOSED MODIFICATIONS

As described below, the proposed revisions to the program for BAM South (Site EE) would not alter the conclusions for the analysis areas examined in the 2004 FEIS. However, several technical areas – land use, community facilities, open space, shadows, traffic and transportation, air quality and noise – were further examined to determine if the proposed modified development, combined with changes in background conditions, could alter the conclusions and mitigation measures of the 2004 FEIS.

Land Use, Zoning, and Public Policy[1]

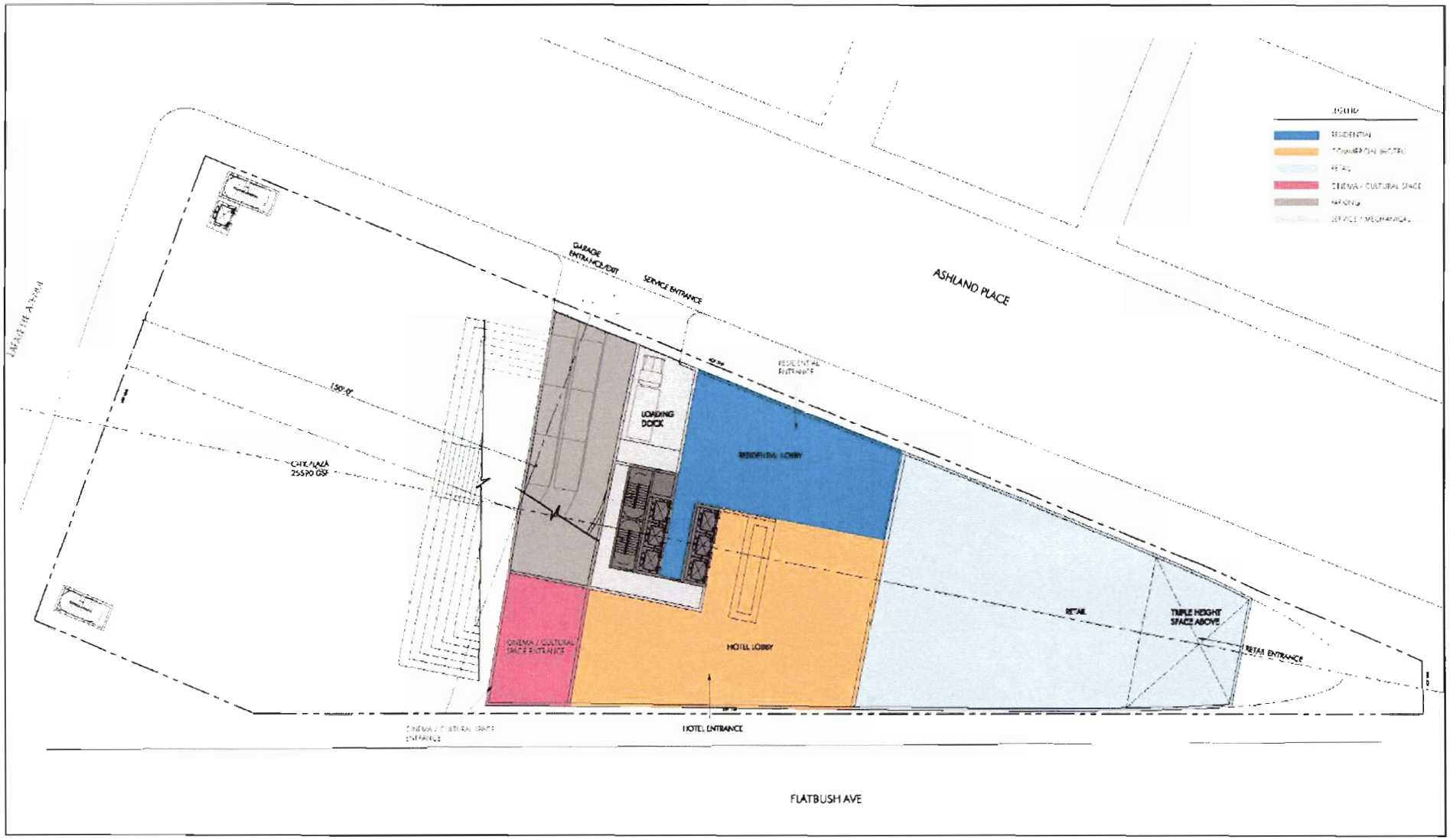
[1] In updating background conditions from 2004 to the current year, secondary source information from a Modification Technical Memorandum recently prepared for Site Q in July 2007 was used for reference.



Source: TEN ARQUITECTOS

Modification Technical Memorandum for BAM South Development **Figure 2**

BAM South Proposed Modified Development - Building Section Looking East



Source: TEN ARQUITECTOS

Figure 3
BAM South Proposed Modified Development - Ground Floor Plan

Land Use

Land use conditions within the 2004 Downtown Brooklyn Development FEIS study area were updated to account for existing (2007) 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.

Since the certification of the 2004 Downtown Brooklyn Development FEIS, 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 was recently converted 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.

Despite this growth, however, the essential land use patterns within the study area have remained similar to those detailed in the 2004 FEIS. Similar to the project analyzed in the 2004 FEIS for Site EE, the proposed modified development would include retail, cultural, and community facility uses, albeit at a much smaller scale. Although the hotel and residential land uses proposed as part of the modified development on Site EE would differ from the primarily cultural and community facility land uses analyzed for this site in the 2004 FEIS, the new uses proposed 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, although there have been several zoning initiatives in the surrounding study area, particularly to the north.

Also, since the issuance of the 2004 FEIS, the Brooklyn Academy of Music Local Development Corporation (BAM LDC), working with both the New York City Economic Development Corporation (EDC) and the New York City Department of Cultural Affairs (DCA), has continued its effort to create the BAM cultural district, a vibrant, mixed-use, multicultural arts district in Downtown Brooklyn that will be a resource for the arts, local community, the borough of Brooklyn, and the city as a whole. The BAM Cultural District extends to DeKalb Avenue to the north, Hanson Place to the south, St. Felix Street to the east, and Flatbush Avenue to the west. A primary goal of this cultural district is to convert underutilized property into affordable,

desirable space for nonprofit visual, performing, media, and other arts groups to create and present their work. The proposed modified development would support and enhance the goals of the BAM cultural district by developing an underutilized site with a vibrant mixed use development that is anticipated to include approximately 35,000 sf 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 zoning or 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 approximately 190 new residential units and approximately 188,609 zsf (194,267 gsf) of other commercial and cultural uses (220-room hotel, retail, cinema, and cultural space), and would therefore not exceed the above CEQR thresholds. Although the proposed 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 development is not likely to trigger any significant changes to the area's real estate market. The proposed residential and commercial/cultural uses are relatively small in number (approximately 190 dwelling units and approximately 194,267 gsf of other uses), and are part of an ongoing trend, and therefore would not trigger a new trend in real estate conditions.

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 approximately 190 dwelling units to the area, with an estimated 399 residents. A discussion of the proposed modified development's effects on community facilities is provided below. As detailed below, the modified proposed development would not result in any new significant adverse impacts to community facilities and services.

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. Guidelines established in the *CEQR Technical Manual* were used to determine the number of school age children expected to be introduced by the proposed modified development on the BAM South site. With 190 dwelling units, all of which are assumed to be market-rate, approximately 51 elementary students and 19 intermediate students would be generated, for a total of 70 students, as well as 11 high school students. As such, the proposed modified development was evaluated for its potential effects on elementary and intermediate schools in the study area.

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). Updated 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, and are presented in Table 3 below.

Elementary Schools
As shown in Table 3 below, the students generated by the proposed modified development on Site EE, combined with the students that were expected to be generated by other development sites in the 2004 FEIS, would add 631 elementary students to the study area. As a result, by 2013 (which includes the first phase of the Atlantic Yards Arena and Redevelopment project) schools within a ½-mile radius of the project area would have 293 available seats and a utilization rate of 97%. As shown in Table 3, it is expected that CSD13, zones 1 and 2, and CSD15 zone 3 would have a total of 1,330 available seats, with a utilization rate of 89%. CSD13 as a whole would be expected to operate at 66% of capacity, with 4,250 available seats, whereas CSD15 is anticipated to operate at 106% of capacity, with a shortfall of 950 seats. However, CSD13 and CSD15 combined would have ample capacity (3,300 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.

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 Actions*	2013 Total Projected Future Enrollment	Capacity	Seats Available	Percent Utilization
ELEMENTARY SCHOOLS						
Total Elementary Schools Within ½-Mile of 2004 FEIS Project Area	8,123	631	8,754	9,047	293	97%
Total in CSD13 Zones 1 and 2 and CSD 15 Zone 3	10,029	631	10,660	11,990	1,330	89%
Total in CSD 13	7,895	306	8,201	12,451	4,250	66%
Total in CSD 15	17,026	325	17,351	16,401	- 950	106%
Total in CSD13 and CSD 15 Combined	24,921	631	25,552	28,852	3,300	89%
INTERMEDIATE SCHOOLS						
Total Intermediate Schools Within ½-Mile of 2004 FEIS Project Area	3,167	235	3,402	4,106	704	83%
Total in CSD13 Zones 1 and 2 and CSD 15 Zone 3	3,406	235	3,641	4,495	854	81%
Total in CSD 13	4,464	114	4,578	6,435	1,857	71%
Total in CSD 15	6,706	121	6,827	6,369	- 458	107%
Total in CSD13 and CSD 15 Combined	11,170	235	11,405	12,804	1,399	89%

Source: Data in this table are from Table 5 of *Modification Technical Memorandum for Site Q*; AKRF, Inc.; July 2007
* Total projected enrollment is derived by adding projected enrollment from the proposed modified development on Site EE (51 elementary and 19 intermediate students) to the 2013 total projected future enrollment in the July 2007 *Modification Technical Memorandum for Site Q*.

Intermediate Schools

As shown in Table 3 above, the students generated by the proposed modified development on Site EE, combined with the students that were expected to be generated by other development sites in the 2004 FEIS, would add 235 intermediate students to the study area. As a result, by 2013 schools within a ½-mile radius of the Downtown Brooklyn Development project area would have 704 available seats and a utilization rate of 83%. 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 854 available seats and 81% utilization. CSD13 as a whole would be expected to operate at 71% of capacity, with 1,857 available seats, whereas CSD15 is anticipated to operate at 107% of capacity, with a shortfall of 458 seats. However, CSD13 and CSD15 combined would have ample capacity (1,399 seats), and would be operating at 89% of capacity.

Although CSD15 would operate over capacity, this deficit in capacity would 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 190 dwelling units to the study area (representing an increase of 1.3 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.

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 190 dwelling units, all of which are anticipated to be market-rate, 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 Table 3C-4 of the *CEQR Technical Manual*, the number of dwelling units to yield 50 or more eligible children in Brooklyn would be 135 low-income units or 147 low-moderate income units. As the proposed development would contain a total of approximately 190 market-rate units, it would not trigger the CEQR threshold for public day care analysis and therefore no significant adverse impact to day care facilities would be expected to occur. Therefore, the proposed changes to the Site EE program would not result in any new significant adverse day care service impacts.

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 168

employees and 399 residents to the site, compared to 223 employees and no residents for the Site EE program analyzed in the 2004 FEIS. 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, 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 25,590 sf (0.59 acres) public plaza is currently planned on the northern portion of the block, which was not included in the 2004 FEIS analysis. As discussed below, the changes proposed to the Site EE program would not be expected to alter the conclusions of the 2004 FEIS.

Updated background conditions and population data as well as updated open space acreages were based on the assessment provided in the July 2007 Modification Technical Memorandum for Site Q. As shown in Table 4 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. With the updated conditions and the proposed modifications, the active open space ratio is expected to decrease by 0.30% from No-Build to Build conditions, from 0.466 to 0.465 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 (rounded at 0.47 acres per 1,000 residents), the conclusions of the open space analysis in the 2004 FEIS 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 (see Table 4). With the updated conditions and the proposed modified development, the combined passive open space ratio would actually increase slightly, by 0.63%, from No-Build to Build conditions, from 0.241 to 0.243 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 (on the northern portion of the subject block that was not considered in the 2004 FEIS analysis). Therefore, the conclusions of the open space analysis in the 2004 FEIS 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 495 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 4
Adequacy of Open Spaces in the Residential Study Area – 2004 FEIS vs. Updated Conditions

	2004 FEIS – Table 5-4		Updated Conditions	
	No-Build Condition	**2013 Build Condition**	**No-Build Condition (1)**	**2013 Build Condition (2)**
Study Area Population				
Residents	128,248	130,304	133,706	134,105
Workers	157,954	178,668	166,346	166,514
Total User Population	**286,202**	**308,972**	**300,052**	**300,619**
Open Space Acreage				
Total	137.56	138.71	134.62	135.21
Active	61.79	61.79	62.30	62.30
Passive	75.77	76.92	72.32	72.91
Open Space Ratios				
Active	0.482 per 1,000 residents	0.474 per 1,000 residents	0.466 per 1,000 residents	0.465 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
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
Percent Change in Ratios (No-Build to Build)				
Active (Residents)		-1.58%		-0.30%
Combined Passive (Residents and Workers)		-5.96%		0.63%

Source: Data in this table are from Table 5-4 of the 2004 Downtown Brooklyn Development FEIS and from Table 6 of *Modification Technical Memorandum for Site Q*; AKRF, Inc.; July 2007

(1) The 2013 No-Build Condition is assumed to be the same as the 2007 Build Condition in the July 2007 Modification Technical Memorandum for Site Q.

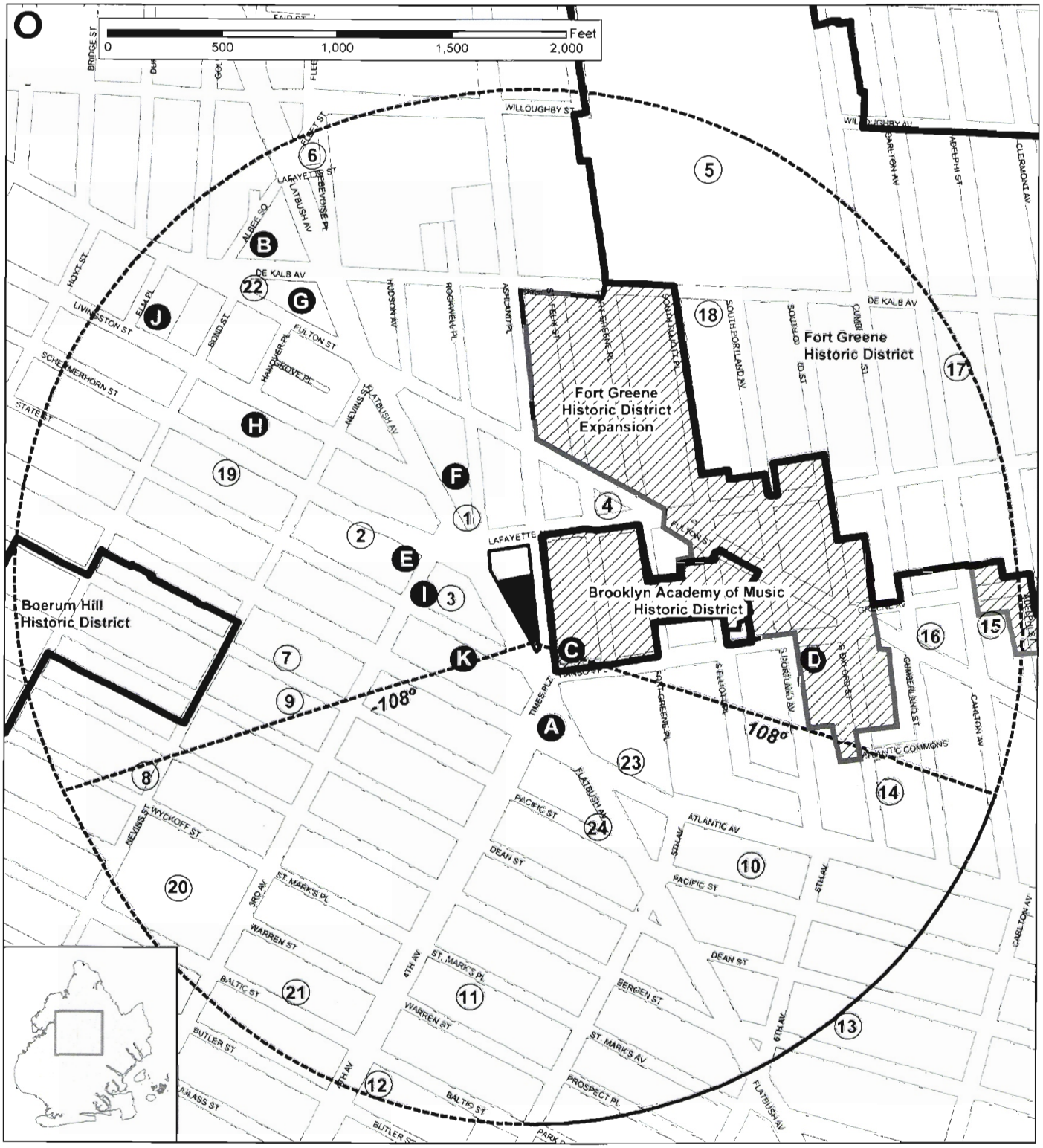
(2) The 2013 Build Condition includes the addition of 399 residents and 168 employees to the study area population from the proposed modified project (see Table 2), as well as the addition of 0.59 acres of passive open space (plaza on the northern portion of the subject block).

The proposed new development would be 36 stories with a maximum height of approximately 495 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 495 feet, the longest shadow (in December) that would be cast by the proposed modified development would be approximately 2,114 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 4. Each of these resources is also identified in Table 5 below.

Location of Buildings Relative to Resources Within Shadow Area

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

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



Legend

- Development Site
- Modified Proposed Development
- Shadow Radius (2,114 feet)
- (2) Open Space Resources (see Table 5)
- (B) State/National Register Historic Resource and/or NYC Landmark
- Area Not Affected by Modified Proposed Development's Shadow
- Historic Districts

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 4). These resources are therefore excluded from further shadows assessment (refer to Table 5 for list of excluded resources).

Resources of Concern

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 2,144-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 14 resources listed in Table 5, for four representative days of the year: March 21/September 21, the equinoxes; May 6, the midpoint between the vernal equinox and the summer solstice (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 5 and discussed below.

TABLE 5

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	7:36-11:17	8:29-11:19	9:12-11:26	8:51-10:45
2	Sixteen Sycamores Playground	7:36-9:05	6:33-8:48	7:18-8:42	n/a
3	P.S. 735K at 806/Secret Garden	7:36-9:42	6:27-9:10	5:57-8:53	n/a
4	Fowler Square	14:31-16:29	13:18-14:52	n/a	13:04-14:53
5	Fort Greene Park	n/a	n/a	n/a	13:51-14:53
6	University Plaza	n/a	n/a	n/a	n/a
7	North Pacific Playground	n/a	6:40-7:11	5:57-6:45	n/a
9	P.S. 38/The Pacific School Playground	n/a	n/a	5:57-6:38	n/a
15	Brooklyn Bears Carlton Avenue Garden	n/a	n/a	n/a	n/a
16	Cuyler Gore	n/a	n/a	n/a	n/a
17	Edmunds/J.H.S. 294 Playground	n/a	n/a	n/a	n/a
18	Greene Garden	n/a	n/a	n/a	14:19-14:53
19	DOE Playground	7:36-8:03	n/a	n/a	n/a
22	Macomber Square	n/a	n/a	n/a	8:51-9:12
E	Baptist Temple	7:36-9:05	6:33-8:48	7:18-8:42	n/a
Resources Within Area Not Affected By Development Shadows (Area between -108 and 108 degrees)					
8	200 Bergen Block Community Garden	n/a	n/a	n/a	n/a
10	Friends of Pacific Street Garden	n/a	n/a	n/a	n/a
11	Warren Street/St. Mark's Community Garden	n/a	n/a	n/a	n/a
12	P.S. 133 DOE Playground/Baltic Street Community Garden	n/a	n/a	n/a	n/a
13	Dean Playground	n/a	n/a	n/a	n/a
14	South Oxford Playground	n/a	n/a	n/a	n/a
20	Wyckoff Gardens Open Space	n/a	n/a	n/a	n/a
21	Police Athletic League	n/a	n/a	n/a	n/a
23	Atlantic Terminal Plaza	n/a	n/a	n/a	n/a
24	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	Loesser's Department Store (former)				
K	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				
	Boerum Hill Historic District				

(1) Refer to Screening discussion in Technical Memorandum

Times shown are eastern standard time (EST)

March 21/September 21

On the equinoxes, incremental shadows from the proposed modified development would reach five of the resources shown in Table 5, mostly in the early morning hours. Incremental shadows would be cast on the Brooklyn Bears Rockwell Garden for a duration of approximately 3 hours and 41 minutes, and would exit this garden entirely by 11:17 AM. Incremental shadows would also be cast on Sixteen Sycamores Playground and the Baptist Temple immediately to its east (7:36 AM to 9:05 AM, for a duration of approximately 1 hour and 29 minutes), P.S. 735K/ Secret Garden (duration of approximately 2 hours and 6 minutes), and the DOE playground on Schermerhorn Street (from 7:36 AM to 8:03 AM, for a duration of approximately 27 minutes). In the afternoon, the proposed modified development would cast incremental shadows on Fowler

Square for a duration of approximately 1 hour and 58 minutes. No incremental shadows would be cast on any of the other resources in Table 5 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 5, 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 2 hours and 50 minutes, and would exit this garden entirely by 11:19 AM. Incremental shadows would also be cast on Sixteen Sycamores Playground and the Baptist Temple (6:33 AM to 8:48 AM, for a duration of approximately 2 hours and 15 minutes), P.S. 735K/ Secret Garden (duration of approximately 2 hours and 43 minutes), and North Pacific Playground (6:40 AM to 7:11 AM, for a duration of approximately 31 minutes). In the afternoon, the proposed modified development would cast incremental shadows on Fowler Square for a duration of approximately 1 hour and 34 minutes. No incremental shadows would be cast on any of the other resources in Table 5 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 9:12 AM and exiting at 11:26 AM, for a duration of 2 hours and 14); Sixteen Sycamores Playground and the Baptist Temple (entering at 7:18 AM and exiting at 8:42 AM, for a duration of 1 hour and 24 minutes); P.S. 735K/ Secret Garden (entering at 5:57 AM and exiting at 8:53 AM, for a duration of 2 hours and 56 minutes); North Pacific Playground (entering at 5:57 AM and exiting at 6:45 AM, for a duration of 48 minutes); and P.S. 38 Playground (entering at 5:57 AM and exiting at 6:38 AM, for a duration of 41 minutes). No incremental shadows would be cast on any of the other resources in Table 5 on this analysis day.

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. The analysis shows that incremental shadows would be cast on Fort Greene Park only on this analysis day, with shadows entering in the afternoon at 1:51 PM, and exiting at 2:53 PM (end of the analysis period), for a duration of 1 hour and 2 minutes. Incremental shadows cast by the proposed modified development would also reach the Brooklyn Bears Rockwell Garden (entering at 8:51 AM and exiting at 10:45 AM, for a duration of 1 hour and 54 minutes); Fowler Square (entering at 1:04 PM and exiting at 2:53 PM, for a duration of 1 hour and 49 minutes); Greene Garden (entering at 2:19 PM and exiting at 2:53 PM, for a duration of 34 minutes); and Macomber Square (entering at 8:51 AM and exiting at 9:12 AM, for a duration of 21 minutes). No incremental shadows would be cast on any of the other resources in Table 5 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 5 and discussed above, the proposed modified development would cast incremental shadows on several resources in one or more of the analysis periods. 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. In addition, the *CEQR Technical Manual* indicates that winter shadows, although longest, move the most quickly along their paths and do not affect the growing season of outdoor trees and plants. 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, similar to the adjacent Sixteen Sycamores Playground, those shadows would be cast mostly in the early morning hours (exiting no later than 9:05 AM on any of the analysis days), and would be of relatively short duration (less than two hours and 15 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 of the proposed building, it is expected to be cast in shadow during some periods in all of the four analysis days. However, 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), and would therefore not be expected to be adversely impacted by such incremental shadows. Further, because the creation of this open space is part of the proposed modified action, these shadows are not considered a significant adverse impact.

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 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.

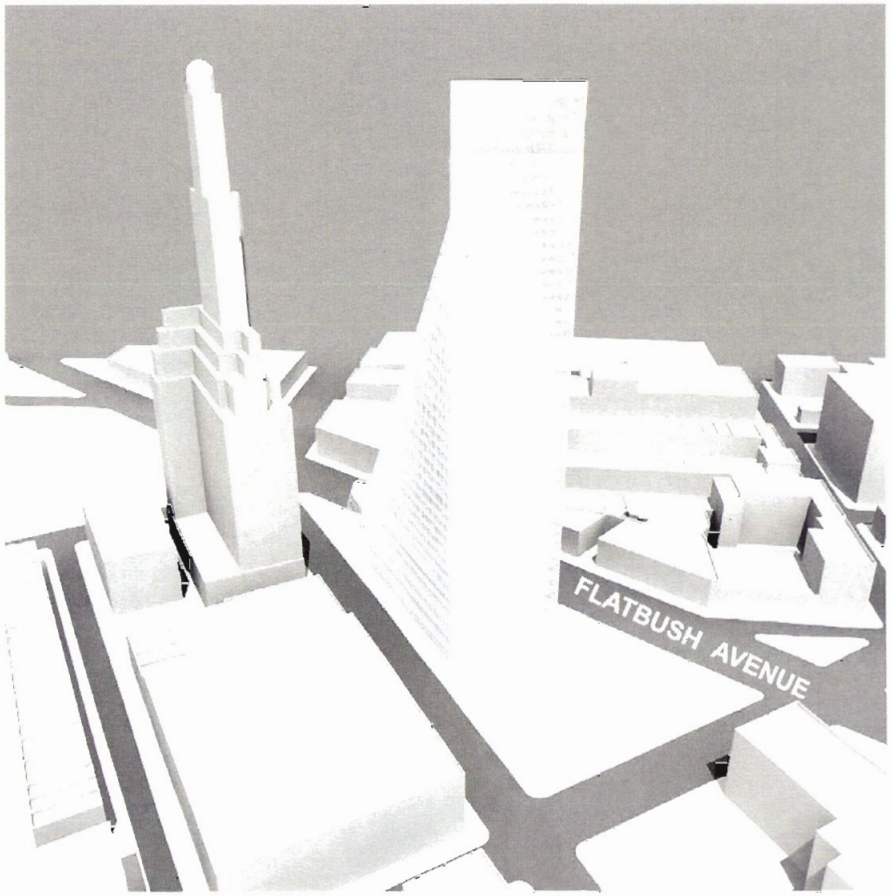
As described in the 2004 FEIS, the new, modern development that was projected to occur as a result of the proposed actions were expected to alter the context of the surrounding architectural resources, changing it from a mixed context of low-, medium-, and high-rise structures on lots of varied size 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 much taller structure, with a maximum height of 495 feet, which would be in close proximity to the Williamsburgh Savings Bank building, Brooklyn's most iconic structure, which is approximately 512 feet tall.

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, Ashland, and Lafayette Avenues in Downtown Brooklyn. 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 lobbies to the hotel and residential uses. An entry/exit ramp would provide access to the public parking garage on the lower levels. The upper portion of the building would contain a hotel, which would make use of the south-facing deck for amenities and public functions. A large interior atrium would bring light into the middle of the deep floor plates and would be a dramatic component of the hotel interior. Above the hotel would be residential condominiums. The building would be clad in a continuous glass and metal curtain wall that, as it transitions down from the tower, would expose the building structure at the base. The base would also be glazed in part, to correspond to the retail and lobby uses (see Figure 5).

Responding to the geometry of the block, the building would have a curved front that would follow the edge of the street, yet gradually would angle back in sections to offset from the adjacent Williamsburgh Saving Bank (see illustrative massing studies in Figure 5). With such a design, the building would be deferential to its context while bringing a new urban order and visual identity to the site. The proposed building's north façade would be a dramatic shear plane



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Source: TEN ARQUITECTOS

Figure 5
BAM South Proposed Modified Development - Massing Studies

that extends the entire height of the building. This face would frame the public plaza to the north, and thus would help define the gateway to BAM and the new cultural district. Moreover, the urban design character of the area immediately surrounding the site would be enhanced by the streetscape improvements, including the 25,590 sf public plaza on the northern portion of the block.

With its increased height, 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 6). Although the proposed structure would be only 17 feet shorter than the adjacent Williamsburgh Savings Bank, its tallest portion would be the farthest away from this historic resource, thereby minimizing 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 by the analysis year of 2013, as a result of the first phase of the Atlantic Yards Arena and Redevelopment project. That 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 495 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 to 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, hotel 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

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Source: TEN ARQUITECTOS

Modification Technical Memorandum for BAM South Development **Figure 6**

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

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 Downtown Brooklyn Development project site does not encompass nor is 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 Office of Environmental Planning and Assessment (OEPA), 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 DEP for review and approval. After receiving such tests results, a determination will be made by DEP 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 DEP for review and approval.

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 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 described in the 2004 FEIS, the previously approved Downtown Brooklyn Development project would generate increased demands for water and treatment of sewage. As shown in Table 6 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 88,794 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 6
Expected Water Demand on Site EE – 2004 FEIS Vs. 2008 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***
2008 Proposed modified Development	Residential	190 DU	44,688	31,663	76,351
	Hotel	220 rooms 125,928 zsf	33,000	21,408	54,408
	Retail	12,681 zsf	2,156	2,156	4,312
	Cinema	600 seats 15,000 zsf	3,000	2,550	5,550
	Community Facility	35,000 zsf	5,950	5,950	11,900
		Total	***88,794***	***63,727***	***152,521***
Net Difference: 2004 FEIS Vs. 2008 Modified Development			**55,644**	**30,577**	**86,221**

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, 1,000 gsf per unit). Retail use: 0.17 gpd per square foot, plus 0.17 gpd per sf for air conditioning. Hotel use: 150 gpd per room, 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 55,644 gpd, 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.

Solid Waste and Sanitation Services

As described in the 2004 FEIS, the previously approved project would generate increased demands for solid waste and sanitation services. As shown in Table 7 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 6,514 pounds of solid waste per week (lbs/wk), of which 250 lbs/wk would be handled by DSNY and 6,264 lbs/wk by private carters. As the additional amount of solid waste that would be handled by DSNY would be negligible, 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.

TABLE 7
Expected Solid Waste Generation on Site EE – 2004 FEIS Vs. 2008 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***
2008 Proposed modified Development	Residential	190 DU	7,790	0	7,790
	Hotel	220 rooms 125,928 zsf	0	5,500	5,500
	Retail	12,681 zsf	0	2,504	2,504
	Cinema	600 seats 15,000 sf	0	3,000	3,000
	Community Facility	35,000 sf	1,820	0	1,820
		Total	***9,610***	***11,004***	***20,614***
Net Difference: 2004 FEIS Vs. 2008 Modified Development			**250**	**6,264**	**6,514**

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. Hotel use: 75 lbs/wk per employee, and 1 employee per 3 rooms. 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, hotel) and reduce the square footage of the uses previously projected for this site (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.

The general conclusion is that the modification of the project to add a new residential use would also result in the potential for significant traffic impacts in the vicinity of Site EE. Since these impacts have already been disclosed in the 2004 EIS, there would still be the potential for significant adverse traffic impacts, but the level of impact could be greater. Mitigation measures for impacts disclosed in the 2004 EIS and approved by NYCDOT would be re-examined and, as appropriate, could be modified to address any additional level of impact.

Traffic

Table 8 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 9 shows the total net travel demand for the proposed modified development and compares it to the 2004 travel demand for Site EE.

As shown in Table 9, the proposed modified development would generate a total of approximately 61, 87, and 95 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. Therefore, as shown in Table 8, the incremental increase resulting from the proposed modified development

would be 46, 18, and 42 vph during the AM, midday and PM peak hours, respectively. 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 FEIS and for which mitigation measures were approved by NYCDOT.

Parking

Similar to the approved project, the proposed modified development would include a new public parking garage with approximately 450 spaces. The anticipated hourly parking demand

TABLE 8
Proposed Modified Development on Site EE - Transportation Planning Assumptions

Land Use:	Local Retail/ Public Market	Residential	Cinema	Cultural Uses	Hotel
Size/Units:	12,681 zsf	190 DU	600 seats	35,000 zsf	220 rooms
Trip Generation:	(1)	(4)	(6)	(8)	(10)
Weekday	205 per 1,000 sf	8 075 per 1,000 sf	3 26 per seat	40 24 per 1000 sf	5 82 per room
Temporal Distribution:	(2)	(4)	(6)	(8)	(10)
AM	3 1%	9 1%	0 0%	0 6%	6 6%
MD	19.0%	4 7%	3 0%	11.5%	8.3%
PM	9 6%	10.7%	8 0%	10 3%	7.7%
Modal Splits:	(1) AM/PM/SAT	(5) AM/MD/PM	(7) AM/MD/PM	(9) AM/MD/PM	(10)
Auto	2 0%	13 0%	32.0%	15 0%	30 1%
Taxi	3 0%	1 0%	4.0%	0 0%	12.3%
Subway	4.0%	65.0%	22 0%	30.0%	18.8%
Bus	6.0%	4 0%	20.0%	15.0%	5.5%
Walk/Ferry/Other	85 0%	17 0%	22.0%	40.0%	33.3%
	100.0%	100 0%	100 0%	100 0%	100 0%

In/Out Splits:	(1) In	Out	(5) In	Out	(6) In	Out	(8) In	Out	(10) In	Out
AM	50%	50%	20 0%	80 0%	50%	50%	100%	0%	41%	59%
MD	50%	50%	51 0%	49 0%	62%	38%	71%	29%	68%	32%
PM	50%	50%	65 0%	35 0%	54%	46%	24%	76%	59%	41%

Vehicle Occupancy:	(2)	(5)	(6)	(9)	(10)
Auto	2.00	1 19	2.3	2 7	1 6
Taxi	2.00	1 4	2.4	2.7	1 4
Truck Trip Generation:	(3) 0.35 per 1,000 sf	(3) 0 07 per DU	(7) 0.10 per seat	(3) 0 29 per 1000 gsf	(3) 0.06 per room
	(3)	(3)	(3)	(3)	(3)
AM	7.7%	12.0%	7 7%	10.0%	12.2%
MD	11 0%	8.7%	11 0%	11.0%	8 7%
PM	1 0%	1 0%	1.0%	2.0%	0.0%

	In	Out	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%	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.
(10) Renaissance Plaza Expansion EAS, March 2003 and data from Marriott Hotel Transportation Survey, AKRF, August 1999.

TABLE 9
Proposed Modified Development on Site EE - Trip Forecast Summary

Land Use:		Local Retail/ Public Market		Residential		Cinema		Cultural Uses		Hotel	
Size/Units:		12,681	zsf	190	DU	600	seats	35,000	zsf	220	rooms
Peak Hour Trips:											
	AM	81		140		0		8		85	
	MD	494		72		59		162		106	
	PM	250		164		156		145		99	
Person Trips:											
		In	Out	In	Out	In	Out	In	Out	In	Out
AM	Auto	1	1	4	15	0	0	1	0	10	15
	Taxi	1	1	0	1	0	0	0	0	4	6
	Subway	2	2	18	73	0	0	3	0	7	9
	Bus	2	2	1	4	0	0	1	0	2	3
	Walk/Ferry/Other	34	34	5	19	0	0	3	0	12	17
	Total	40	40	28	112	0	0	8	0	35	50
		In	Out	In	Out	In	Out	In	Out	In	Out
MD	Auto	5	5	5	5	12	7	17	7	22	10
	Taxi	7	7	0	0	1	1	0	0	9	4
	Subway	10	10	24	23	8	5	34	14	14	6
	Bus	15	15	1	1	7	4	17	7	4	2
	Walk/Ferry/Other	210	210	6	6	8	5	46	19	24	11
	Total	247	247	36	35	36	22	114	47	73	33
		In	Out	In	Out	In	Out	In	Out	In	Out
PM	Auto	2	2	14	7	27	23	5	17	18	12
	Taxi	4	4	1	1	3	3	0	0	7	5
	Subway	5	5	69	37	19	16	10	33	11	8
	Bus	7	7	4	2	17	14	5	17	3	2
	Walk/Ferry/Other	106	106	18	10	19	16	14	44	19	13
	Total	124	124	106	57	85	72	34	111	58	40
Vehicle Trips :											
		In	Out	In	Out	In	Out	In	Out	In	Out
AM	Auto (Total)	1	1	3	13	0	0	0	0	6	9
	Taxi	1	1	0	1	0	0	0	0	3	4
	Taxi Balanced	2	2	1	1	0	0	0	0	6	6
	Truck	0	0	1	1	2	2	1	1	1	1
	Total	3	3	5	15	2	2	1	1	13	16
		In	Out	In	Out	In	Out	In	Out	In	Out
MD	Auto (Total)	3	3	4	4	5	3	6	3	14	6
	Taxi	4	4	0	0	0	0	0	0	6	3
	Taxi Balanced	6	6	0	0	0	0	0	0	6	6
	Truck	0	0	1	1	3	3	1	1	1	1
	Total	9	9	5	5	8	6	7	4	21	13
		In	Out	In	Out	In	Out	In	Out	In	Out
PM	Auto (Total)	1	1	12	6	12	10	2	6	11	8
	Taxi	2	2	1	1	1	1	0	0	5	4
	Taxi Balanced	2	2	2	2	2	2	0	0	7	7
	Truck	0	0	0	0	0	0	0	0	0	0
	Total	3	3	14	8	14	12	2	6	18	15

	Proposed Project			Downtown Brooklyn FEIS	Net Difference - FEIS Vs. Proposed Project
Total Vehicle	In	Out	Total	Total	Difference <50
AM	24	37	61	15	46
MD	50	37	87	69	18
PM	51	44	95	53	42

associated with all the different components of the proposed modified development is presented in Table 10. As shown in the table, the maximum parking demand associated with the proposed modified development would be approximately 95 spaces in the 8-9 AM peak hour, 109 spaces in the 12-1 PM peak hour, and 116 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). With a 450-public parking facility on-site, the demand generated by the proposed modified development would be readily accommodated by this facility. Therefore, the proposed modifications would not result in any significant adverse parking impacts, and the findings of the 2004 FEIS relative to off-street parking would not change.

TABLE 10
Proposed Modified Development on Site EE - Hourly Parking Demand - Weekday

	Neigbourhood Retail trips/day		Residential trips/day		Cinema trips/day		Cultural Uses trips/day		Hotel trips/day		Accmulation
Overnite demand	0		76		0		0		44		120
	In	Out	In	Out	In	Out	In	Out	In	Out	
12-1 AM	0	0	0	0	0	0	0	0	0	0	120
1-2	0	0	0	0	0	0	0	0	0	0	120
2-3	0	0	0	0	0	0	0	0	0	0	120
3-4	0	0	0	0	0	0	0	0	0	0	120
4-5	0	0	0	0	0	0	0	0	0	0	120
5-6	0	0	1	2	0	0	0	0	0	1	118
6-7	0	0	1	5	0	0	0	0	1	1	114
7-8	0	0	2	5	0	0	0	0	1	4	108
8-9	1	1	3	13	0	0	0	0	6	9	95
9-10	0	0	3	5	0	0	1	0	5	10	89
10-11	1	1	3	5	0	0	6	1	5	5	92
11-12	1	1	3	4	2	0	6	2	5	6	96
12-1 PM	3	3	4	4	5	3	6	3	14	6	109
1-2	1	1	4	4	7	4	6	3	12	14	113
2-3	1	1	4	4	8	6	4	4	7	18	104
3-4	1	1	6	4	8	9	6	7	9	8	105
4-5	1	1	11	6	10	6	2	6	10	11	109
5-6	1	1	12	6	12	10	2	6	11	8	116
6-7	1	1	8	5	22	11	1	4	11	8	130
7-8	1	1	9	5	18	11	0	4	9	6	140
8-9	0	0	6	3	22	19	0	0	6	4	148
9-10	0	0	2	2	17	23	0	0	4	1	145
10-11	0	0	1	1	4	24	0	0	4	1	128
11-12	0	0	1	1	2	11	0	0	1	0	120
	13	13	84	84	137	137	40	40	121	121	

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 9 above, the proposed modified development is expected to generate a total of approximately 114, 148 and 213 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 82 subway trips in the AM peak hour, but a net decrease of 178 and 48 subway trips in the midday and PM peak periods, respectively. As the net increments in subway transit resulting from the proposed modifications fall well 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 9 above, the proposed modified development is expected to generate a total of approximately 15, 73 and 78 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 6 bus trips in the AM peak hour, but a net decrease of 55 and 25 bus trips in the midday and PM peak periods, respectively. As the net increments in bus transit resulting from the proposed modifications 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 124, 545 and 365 trips during the AM, midday, and PM peak hours, respectively (refer to Table 9). 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 46 pedestrian trips in the AM peak hour, but a net decrease of 123 and 77 pedestrian trips in the midday and PM peak periods, respectively. As the net increments in pedestrian trips resulting from the proposed modifications fall well below the threshold of 200 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.

Therefore, 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 46 vehicle trips in any peak hour compared to the Site EE program analyzed in the 2004 FEIS. This would not trigger 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

Compared to the Site EE program analyzed in the 2004 FEIS, the proposed modified development is significantly taller, with an overall height of approximately 495 feet. The proposed mixed-use development would consist of a total of approximately 386,110 gross square feet. In accordance with CEQR guidelines, the stack height for the emissions vent was estimated at three feet higher than the building height of 495 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 7). 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 proposed modified development rises in a triangular shape, with the tallest point 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 7 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 46 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. As such, 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. The (E) designation stated that in order to ensure an acceptable interior noise environment at these sites, future uses on each site must provide a minimum window/wall attenuation of 25, 30, 35, or 40 dBA, depending on the site. 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* (August 2002) 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. According to the *CEQR Technical Manual*, it is generally best to use the descriptors of $L_{eq(1)}$ or $L_{10(1)}$ for purposes of vehicular traffic noise analysis. $L_{eq(1)}$ captures an hour's total noise energy at the location, and $L_{10(1)}$ represents the level exceeded 10 percent of the time. The $L_{10(1)}$ descriptor can be considered an average of the peak noise levels at a given location. The following provides the L_{eq} and L_{10} noise levels monitored on 4th Avenue between Atlantic Avenue and Pacific Street as part of the *Atlantic Yards Arena and Redevelopment Project FEIS*:

TABLE 11
2006 Noise Levels (in dBA)

Location	L_{eq} (dBA)			L_{10} (dBA)		
4th Avenue between Atlantic Avenue and Pacific Street	**AM**	**MD**	**PM**	**AM**	**MD**	**PM**
	72.7	72.3	70.3	75.6	75.8	71.8
Source: *Atlantic Yards Arena and Redevelopment Project FEIS*; November 2006.						

The above noise measurements indicate that the surrounding area's existing noise levels are mostly in the marginally unacceptable range for residential uses according to CEPO-CEQR Exterior Noise Standards. The *CEQR Technical Manual* has set noise attenuation quantities for buildings based on exterior noise levels, as shown in Table 12 below. Recommended noise attenuation values for buildings are designed to maintain interior noise levels of 45 dBA or lower, and are determined based on exterior L_{10} noise levels.

TABLE 12
Required Attenuation Values To Achieve Acceptable Interior Noise Levels

	Marginally Acceptable	Marginally Unacceptable		Clearly Unacceptable		
Noise level with proposed action	$65<L_{10}<70$	$70<L_{10}<75$	$75<L_{10}<80$	$80<L_{10}<85$	$85<L_{10}<90$	$90<L_{10}<95$
Attenuation	25 dB(A)	(I) 30 dB(A)	(II) 35 dB(A)	(I) 40 dB(A)	(II) 45 dB(A)	(III) 50 dB(A)
Source: New York City Department of Environmental Protection						

As indicated in Table 12, with exterior $L_{10(1)}$ noise levels ranging from 75 to 80 dBA, the proposed modified development on Site EE would 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 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 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.

Construction Impacts

The 2004 FEIS construction impacts assessment concluded that, for the most part, the potential impacts of the development associated with the Downtown Brooklyn Development project would be temporary and similar to those experienced elsewhere in the City's business districts. Impacts specific to conditions in the study area would relate mainly to the potential physical effects to historic resources and potential effects on traffic conditions, particularly on Flatbush Avenue and Adams Street, where congestion exists currently.

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 Downtown Brooklyn Development 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 changes to the proposed program for development on Site EE would not result in any significant adverse environmental impacts that were not identified in the 2004 FEIS. No additional analysis or supplemental environmental impact statement is warranted for the proposed changes to the project.

This Technical Memorandum was prepared in accordance with Article 8 of the New York State Environmental Conservation Law.

Robert R. Kulikowski
Assistant to the Mayor

July 14, 2008
Date