Chapter 16: Project Alternatives

A. INTRODUCTION

This chapter considers alternatives to the proposed project. The purpose of an analysis of alternatives, as set forth in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, is to provide the decision makers with the opportunity to consider reasonable alternatives to the proposed project that could potentially reduce or eliminate significant adverse environmental impacts identified in the Environmental Impact Statement (EIS) and that are feasible, considering the objectives and capabilities of the project sponsor.

As described in Chapter 1, "Project Description," the American Museum of Natural History (AMNH or the Museum) is proposing the construction of a new building, the Richard Gilder Center for Science, Education, and Innovation (the Gilder Center). The Museum is located in Theodore Roosevelt Park, which is City-owned parkland under the jurisdiction of the New York City Department of Parks and Recreation (NYC Parks). The Gilder Center would be an approximately 203,000 gsf addition on the west side of the Museum complex facing Columbus Avenue. In addition to new construction, the proposed project would include approximately 42,000 gsf of renovations to existing Museum space and improvements to approximately 75,000 square feet of adjacent public open space in Theodore Roosevelt Park.

This chapter considers eight alternatives to the proposed project:

- Alternative 1: No Action Alternative, which is mandated by the State Environmental Quality Review Act (SEQRA) and CEQR, and is intended to provide the lead and involved agencies with a baseline assessment of the consequences of not approving the proposed project. The No Action Alternative assumes the Museum remains in its current condition.
- Alternative 2: Reuse of Administrative Space Alternative, in which some of the project's proposed program elements are located within existing administrative space rather than within newly constructed areas. In this alternative, a portion of the Museum's administrative functions would have to be moved off-site.
- Alternative 3: Expanded Footprint Alternative, which avoids the demolition of Building 15 (a contributing building to the State and National Register [S/NR]-listed Museum complex) by extending the development area farther into Theodore Roosevelt Park, beyond the proposed project's development footprint.
- Alternative 4: Infill Alternative, which would avoid the demolition of Building 15 (a contributing building to the S/NR-listed Museum complex) and the loss of open space in Theodore Roosevelt Park by constructing above Building 17 and abutting Building 15.
- Alternative 5: Reduced Footprint Alternative A, which would avoid the loss of open space in Theodore Roosevelt Park by limiting new construction to the area occupied by existing Museum buildings; this alternative includes the demolition of Building 15.

- Alternative 6: Reduced Footprint Alternative B, which would avoid the loss of open space in Theodore Roosevelt park by limiting new construction to the area occupied by existing Museum buildings; this alternative includes the demolition of Building 15. It would have the same footprint but would be two levels taller than Alternative 5, above, with only one below-grade level.
- Alternative 7: Ross Terrace Alternative, which would avoid the demolition of Building 15 and the loss of open space in Theodore Roosevelt Park by moving the development site to the Ross Terrace above the AMNH garage; the existing publicly accessible open space at the Ross Terrace would be eliminated.
- Alternative 8: Off-Site Alternative, in which the proposed project is constructed at an off-site location. This alternative is assumed to have a similar size and program as the proposed project. Since the Museum does not own or own a right to such a property, the location and characteristics of an alternative site are unknown.

The physical characteristics of these alternatives are summarized in **Table 16-1**.

Table 16-1
Physical Characteristics of Project Alternatives

Scenario	Additional Gross Square Feet (Approx.)	Height	Levels Above Grade	Levels Below Grade
Proposed Gilder Center	200,000	105’	5	1
Alternative 1	-	-	-	-
Alternative 2	-	-	-	-
Alternative 3	200,000	77’	4	1
Alternative 4	190,000	115’	6	1
Alternative 5	200,000	105’	5	2
Alternative 6	200,000	128’	7	1
Alternative 7	200,000	125’	6	-
Alternative 8	0 on-site, 200,000 off-site	TBD (off-site)	TBD (off-site)	TBD (off-site)

Note: Heights shown are above grade to the roof and do not include any mechanical space.
Source: Studio Gang Architects

Alternatives 3 through 7 have been developed to provide an assessment of alternative plans with the same or similar square footage and program elements (to the extent possible) as the proposed project. These alternatives show different arrangements of bulk, but are not architectural designs. Any alternative built over and into the existing service and delivery yard would necessitate a replacement of the Museum’s existing below-grade service and delivery area, which is undersized and outdated and could not remain operational with the addition of foundations and structure for a new building above. The evaluation of these alternatives considers whether they would meet the project goals and objectives, described in Chapter 1, “Project Description,” and whether they would avoid or minimize the significant adverse impacts of the proposed project.

Alternatives 1, 2, 3, 4, 7, and 8 would avoid the demolition of Building 15, a significant adverse impact of the proposed project on architectural resources. As a result, these alternatives were reviewed by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) to evaluate the potential for avoiding the adverse impact in a manner that would allow the Museum to meet its program goals.

Alternative 4 has been developed to show an arrangement of bulk that would avoid the loss of public open space in the west side of Theodore Roosevelt Park and the demolition of Building 15. Alternatives 5 and 6 have been developed to show an arrangement of bulk that would avoid the loss of public open space in the west side of Theodore Roosevelt Park, but would include the demolition of Building 15. This would require more levels in a smaller footprint than the proposed project. Thus, Alternatives 5 and 6 include additional levels, with one putting the extra space below grade and the other putting the extra space at the top of the building. With the comparison of Alternatives 3, 4, 5, and 6, this chapter studies whether the inclusion of a theater and/or central exhibition hall necessitates the removal of Building 15 or the loss of existing public open space. A detailed discussion of these alternatives, their likely impacts, and the extent to which they are consistent with the objectives and capabilities of the Museum is provided below.

B. PROJECT GOALS AND OBJECTIVES

As described in Chapter 1, "Project Description," the goals and objectives of the proposed project are:

- Accommodate growth in science and education programming and exhibits: provide immersive exhibition space, new and modernized classrooms, labs, and other learning environments that use technology to relay complex scientific concepts relevant to today's highly complex and science-based societal issues, as well as space for hands-on, interactive learning aligned with national educational standards.
- Improve the Museum's circulation and connections: improve the Museum's overall circulation and flow for the growing number of visitors by creating new, well-organized, and easily accessible north-south and east-west connections among buildings, eliminating dead end pathways, and designing entries and spaces that are accessible to children, strollers and the mobility-impaired.
- Enhance and integrate the Museum's science, exhibition, and educational programming: connect new and existing galleries in ways that highlight and reinforce intellectual links among different scientific disciplines and place educational experiences in the context of current scientific practice by creating adjacencies among classrooms, laboratories, collections, and library resources.
- Provide greater access to the Museum's scientists and scientific resources: provide opportunities for family and general learning and structured school visits led by the Museum's scientists and educators, leveraging Museum collections and resources to situate science learning in the context of current research by providing hands-on access to the advanced tools and methods for gathering data and making scientific observations.
- Provide greater access to library resources: reveal a key scholarly asset for the Museum's scientific staff and for visiting scholars from all over the world by making library resources more accessible to visitors, including new access, assistance in navigating printed and digital information, and opportunities for public programming.
- Improve and expand collections storage and visibility: provide new, state-of-the-art space to display actual specimens and artifacts that scientists use to investigate and answer fundamental questions, identify new species, and formulate new research questions and directions, and to accommodate continuing growth in the Museum's collections.

- Enhance the sustainability features of the Museum: consistent with the Museum's commitment to reducing energy usage and carbon footprint in its existing facilities, address sustainability and the efficient use of energy, water and space as an integrated part of the design process.
- Provide multi-disciplinary and flexible spaces for science and education: support customized programs and curricula while exposing learners to constantly developing research tools and initiatives by providing spaces that are flexible in both use and physical arrangement, and that can draw on the full spectrum of the Museum's multi-disciplinary resources.
- Provide a new Columbus Avenue entrance: provide a new entrance that activates the Columbus Avenue side of the Museum and welcomes visitors and neighborhood residents into a high-quality civic setting that uses design, scale, and proportionality to create an inspiring visitor experience and sense of place.
- Upgrade visitor and operational services: provide space in the new building for visitor services, such as restrooms, elevators, a restaurant and a gift shop, to accommodate growth in Museum attendance, and upgrade and modernize operational services, including loading, storage, food service, utility connections, and service areas.

C. ALTERNATIVE 1: NO ACTION ALTERNATIVE

DESCRIPTION

In the earlier chapters of this EIS, the No Action Alternative is considered under the "Future without the Proposed Project," as the baseline the proposed project is compared to for the purpose of determining impacts.

Under the No Action Alternative, the proposed project would not be pursued, and, therefore, it is assumed the existing buildings and uses on the project site would remain without alteration in design, circulation, or programming, except for other installations, maintenance, and projects that the Museum may undertake independent of the proposed project, as described in Chapter 1, "Project Description." The No Action Alternative would not accomplish any of the objectives of the proposed project. The following section compares the potential effects of the No Action Alternative to those of the proposed project.

NO ACTION ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

The effects of the No Action Alternative in comparison to those of the proposed project are summarized below.

LAND USE, ZONING, AND PUBLIC POLICY

Under the No Action Alternative, it is assumed the project site would remain as in existing conditions. Unlike the proposed project, the Gilder Center would not be constructed and Theodore Roosevelt Park would retain its current design. Separate from the proposed project, other improvements are expected to be made over time in the Museum. These could include restoration of exhibition halls, elevator upgrades, rehabilitation of existing roofs and facades, and various infrastructure improvements. The goals and objectives of the proposed project, as described in Chapter 1, "Project Description," would not be achieved. Unlike the proposed project, substantial new spaces for education, research, exhibition, and collections would not be created, and constrained circulation within the Museum would not be improved. Neither the

proposed project nor the No Action Alternative would result in significant adverse impacts to land use, zoning, or public policy.

OPEN SPACE

Under the No Action Alternative, no changes are expected to Theodore Roosevelt Park within the proposed development area. The 11,600 square feet of existing open space that would be occupied by the Gilder Center would instead remain open space and the proposed improvements to approximately 75,010 square feet of adjacent area of Theodore Roosevelt Park would not be implemented. The portion of the Park within and adjacent to the proposed development area would continue to be utilized by visitors of all age groups, especially for access to the Museum, passing through the area on the path network, and for gathering and respite. Compared to the proposed project, there would be fewer new users of the Park, since the project-generated increase in Museum attendance and utilization would not occur. Like the proposed project, the No Action Alternative would not result in any significant adverse impacts to open space; unlike the proposed project, the No Action Alternative would not provide landscaping modifications that would improve the overall quality of the rebuilt portion of the Park.

SHADOWS

Under the No Action Alternative, the proposed project would not be implemented and shadows associated with the Gilder Center would not occur. Neither the No Action Alternative nor the proposed project would result in significant adverse shadow impacts.

HISTORIC AND CULTURAL RESOURCES

Under the No Action Alternative, no demolition or construction would occur, and, therefore, there would be no significant adverse impacts to historic and cultural resources. Thus, unlike the proposed project, the No Action Alternative would not result in a significant adverse impact on architectural resources associated with the demolition of Building 15, a contributing building to the State and National Register (S/NR)-listed Museum complex. This alternative was reviewed by OPRHP, which determined that it would not be prudent and feasible and would not meet the goals and objectives of the proposed project.

URBAN DESIGN

Under the No Action Alternative, the project site is expected to remain substantially the same as in existing conditions. As with the proposed project, the No Action Alternative would not have adverse effects on the urban design, view corridors, or visual resources of the project site or study area. Unlike the proposed project, the No Action Alternative would not result in improvements to Theodore Roosevelt Park's landscaping or amenities, which would enhance the visual quality of this area. In addition, the No Action Alternative would not fill in a gap in the Museum's west frontage or result in a more visible entrance to the Museum from Columbus Avenue. Neither the No Action Alternative nor the proposed project would result in a significant adverse urban design impact.

NATURAL RESOURCES

Under the No Action Alternative, there would be no construction at the project site and no changes with respect to natural resources. Under the No Action alternative, the project disturbance of mowed lawn with trees, and urban structure exterior habitat, and paved road/path

communities would not occur. Overall, neither the No Action Alternative nor the proposed project would result in significant adverse impacts to natural resources.

HAZARDOUS MATERIALS

Under the No Action Alternative, the project site will remain in its current condition and construction associated with the proposed project would not occur. As there are no known significant health risks associated with the project site or the remainder of the Museum, there would be no significant health risks at the project site under the No Action Alternative or with the proposed project. Project impacts would be avoided by performing a number of measures noted in Chapter 8, "Hazardous Materials," including implementation of a New York City Department of Environmental Protection (DEP)-approved Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP). Therefore, neither the No Action Alternative nor the proposed project is expected to result in any significant adverse impacts related to hazardous materials.

TRANSPORTATION

The proposed project is expected to generate approximately 745,000 additional annual visitors to the Museum; this incremental attendance increase and its associated trips would not occur under the No Action Alternative, although attendance and utilization is estimated to grow at approximately 1 percent per year without the proposed project. The No Action Alternative would not result in the significant adverse traffic impacts identified for the proposed project, which would occur at three intersections; nor would this alternative result in any significant adverse pedestrian impacts, which would occur at one location. Mitigation has been identified for the proposed project's impacts.

AIR QUALITY

As with the proposed project, under the No Action Alternative, heating, ventilation, and air conditioning (HVAC) systems serving the Museum would continue to be steam and/or electrically powered. Neither the No Action Alternative nor the proposed project would result in significant adverse air quality impacts.

GREENHOUSE GAS EMISSIONS

The No Action Alternative would not result in development of additional floor area and would therefore have lower energy use and local greenhouse gas (GHG) emissions than the proposed project. Neither the proposed project nor this alternative would result in a significant adverse impact. Sustainability strategies under consideration for the proposed project include a commitment to seeking the US Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold certification level.

NOISE

Like the proposed project, the No Action Alternative would not result in a significant adverse noise impact. Neither scenario would generate sufficient traffic to cause a significant adverse noise impact. The proposed project's mechanical systems 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.

PUBLIC HEALTH

Like the proposed project, the No Action Alternative would not result in any significant adverse public health impacts, as neither would result in unmitigated significant adverse impacts on a technical area related to public health.

NEIGHBORHOOD CHARACTER

Like the proposed project, the No Action Alternative would not result in significant adverse impacts with respect to neighborhood character. The No Action Alternative would not result in any of the project changes, including demolition of three Museum buildings (the Weston Pavilion, Building 15, and Building 15A), a decrease in 11,600 square feet at grade of open space in Theodore Roosevelt Park, a more visible and accessible entrance to the Museum from Columbus Avenue, and landscaping improvements in Theodore Roosevelt Park.

CONSTRUCTION

Under the No Action Alternative, unlike the proposed project, no building construction would occur on the project site. Therefore, the No Action Alternative would avoid the temporary construction effects attributable to the proposed project, such as increases in truck traffic and construction-related noise. However, the construction impacts of the proposed project would be addressed to the extent practicable (e.g., through health and safety measures, dust-control, and noise reduction measures) and would not result in significant adverse impacts, with the exception of a traffic impact at one intersection, which would be mitigated.

CONCLUSION

The No Action Alternative would not accomplish any of the objectives of the proposed project. The Gilder Center would not be constructed and the portion of the Park in front of the Weston Pavilion would retain its current design. Substantial spaces for science and education programming, exhibits, and collections would not be created, and constrained circulation within the Museum would not be improved.

D. ALTERNATIVE 2: REUSE OF ADMINISTRATIVE SPACE ALTERNATIVE

DESCRIPTION

Considering the objectives and capabilities of the Museum, this Alternative 2 (Reuse of Administrative Space Alternative) evaluates the feasibility and reasonableness of relocating certain existing AMNH administrative functions off-site in order to convert this space to elements of the proposed project. This alternative would not result in construction beyond the existing Museum footprint; therefore, under this alternative, Theodore Roosevelt Park would retain its current design, and the service and delivery yard would not be modified. In addition, no buildings would be demolished under this alternative, thus avoiding the removal of Building 15, a contributing building to the S/NR-listed Museum complex. Existing administrative spaces are spread throughout each of the six floors of the Museum, including some located behind the exhibit walls in the Museum's existing exhibition halls. Many are located on the Museum's lower or upper levels, or in out of the way sections of the campus, without appropriate connections for visitor circulation. Some of the program elements could fit into these spaces, but

the integrated arrangement of project elements could not be achieved because they would be dispersed throughout the Museum complex and not appropriately configured or co-located. Overall, this alternative would fail to provide any of the added square footage, programmatic or physical connectivity, or circulation improvements of the proposed project.

Since the Museum does not own or have rights to an off-site property for administrative use, the Museum would need to locate and purchase an appropriate new site for administrative uses. According to the *CEQR Technical Manual*, sites which a private applicant like the Museum does not own or does not have a right to use are not required to be considered as alternative sites, rendering this alternative not applicable on that basis alone under SEQRA and CEQR.

The following section compares the potential effects of Alternative 2 to those of the proposed project.

ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

Since this alternative would not result in a new building or any changes to the exterior of the Museum or to Theodore Roosevelt Park, its effects would be substantially the same as Alternative 1 (the No Action Alternative) with regard to open space, shadows, urban design and visual resources, air quality, greenhouse gas emissions, noise, public health, and neighborhood character.

LAND USE, ZONING, AND PUBLIC POLICY

This alternative would change the configuration of the Museum's existing administrative and programmatic functions, but would not result in a physical expansion of the Museum. Like the proposed project, Alternative 2 would continue to be compatible with surrounding residential, commercial, institutional, and open space uses. Unlike the proposed project, this alternative would result in a relocation of administrative Museum functions to an undetermined off-site location.

HISTORIC AND CULTURAL RESOURCES

No buildings would be demolished under this alternative, and, therefore, it would avoid the significant adverse impact associated with the demolition of Building 15, a contributing building to the S/NR-listed Museum complex. This alternative was reviewed by OPRHP, which determined that it would not be prudent and feasible and would not meet the goals and objectives of the proposed project.

NATURAL RESOURCES

Unlike the proposed project, no trees would be removed with Alternative 2.

HAZARDOUS MATERIALS

Under Alternative 2, there would be repurposing of existing Museum spaces. There are no known significant health risks associated with the project site or the remainder of the Museum. If warranted, appropriate measures would be implemented with this alternative to avoid the potential for any significant adverse impacts due to interior disturbance.

TRANSPORTATION

Since some of the programmatic elements associated with the proposed project would not be implemented, including a Theater and Central Exhibition Hall, it is expected that total Museum attendance and utilization under this alternative would be approximately 25 percent of the increase anticipated with the proposed project. Therefore, this alternative would result in fewer trips than the proposed project. Locations where traffic impacts are expected to occur already experience congested conditions and are highly sensitive methodologically to future increases in traffic volumes, even if incremental traffic volumes are low. Therefore, even with fewer trips than the proposed project, this alternative would be expected to result in significant adverse traffic impacts.

CONSTRUCTION

This alternative would result in substantially less construction activity than the proposed project and would be largely limited to interior areas. While there may be some exterior disturbance associated with this alternative, the proposed project's construction effects to Theodore Roosevelt Park and the surrounding neighborhood would not occur. As implementation of this alternative at one time would be unreasonably disruptive to Museum exhibitions and operations, construction would be phased. Activities would likely be staged from the existing service drive but would use all entrances so that construction impacts would be dispersed. Therefore, unlike the proposed project, Alternative 2 would be unlikely to result in significant adverse construction traffic ~~or noise~~ impacts.

CONCLUSION

Alternative 2 would not achieve the objectives of the proposed project. As described in Chapter 1, "Project Description," the space planning effort for the proposed project identified the need for the construction of an addition to the Museum to address the key deficiencies within the Museum. This alternative would exacerbate the existing problem of spaces that are fragmented and difficult to access, and would not improve circulation or the connectivity, spatial logic, and function of the Museum's interior spaces, as navigation through the Museum would continue to be confusing and complex. Important program elements of the proposed project, such as the cohesive design of exhibition and education spaces, the Collections Core and the Invisible Worlds Theater, would not be accommodated under this alternative, since adequately sized and -located space would not be available. Without improvements to circulation and the added space of the proposed project, this alternative would not address the attendance growth expected to occur with or without the proposed project, leading to additional crowding in the Museum. Under this alternative, while some additional visitor services (such as restrooms and restaurant space) could be provided, they would not likely be located where most useful to Museum visitors, due to the dispersed nature and inconvenient locations of many existing administrative spaces, away from the predominant areas of visitor activity. The Museum's service and delivery yard would remain undersized and outdated. Therefore, compared to the proposed project, there would be a loss of connectivity of scientific, exhibition, and education programs.

Compared to the proposed project, this alternative would not result in a significant adverse impact to historic resources or construction-related impacts. However, like the proposed project it would continue to result in a significant adverse transportation impact.

As stated above, according to the *CEQR Technical Manual*, sites which a private applicant like the Museum does not own or does not have a right to use are not required to be considered as

alternative sites, rendering this alternative not applicable on that basis alone under SEQRA and CEQR. Further, as described above, this alternative would not fulfill many of the proposed project's goals and objectives.

E. ALTERNATIVE 3: EXPANDED FOOTPRINT ALTERNATIVE

DESCRIPTION

Considering the objectives and capabilities of the Museum, Alternative 3 (Expanded Footprint Alternative) evaluates the feasibility and reasonableness of developing the Gilder Center and retaining Building 15. As described in Chapter 5, "Historic and Cultural Resources," the proposed project would result in a significant adverse architectural resources impact due to the demolition of Building 15, a contributing building to the S/NR-listed Museum complex. In order to retain Building 15 and accommodate the project's program elements, this alternative would extend the area of new development beyond the existing footprint of the Museum (see **Figures 16-1 and 16-2**). The footprint of this alternative in Theodore Roosevelt Park would be 23,300 square feet, compared to 11,600 square feet with the proposed project. Therefore, this alternative would result in the additional loss of 11,700 square feet of public open space in Theodore Roosevelt Park, compared to the proposed project. Under this alternative, the Gilder Center would provide a new central entrance on the Museum's western façade, with approximately 200,000 gross square feet (gsf) of space in four levels above grade (and one level below grade) and a height above grade of approximately 77 feet (not including any rooftop mechanical space), compared to 105 feet for the proposed project. This alternative would accommodate all of the proposed project's programmatic elements. This alternative was considered by the Museum as part of its initial planning process, prior to the decision to remove Building 15 and Building 15A. There were community concerns regarding the amount of open space that would be affected, resulting in revisions to the proposed project to reduce the loss of open space. The following section compares the potential effects of Alternative 3 to those of the proposed project.

ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Similar to the proposed project, this alternative would result in a new building and improvement to the Museum's existing cultural, educational, and scientific research uses, and would not introduce any new or incompatible uses. Under both the proposed project and Alternative 3, the types of uses would be the same as currently exist at the project site and in the study area, and would continue to be compatible with surrounding residential, commercial, institutional, and open space uses. Unlike the proposed project, Building 15 would be retained as part of the Gilder Center. Under both this alternative and the proposed project, the Museum is a well-established permitted use, as an 1876 State statute set aside the entire site of Manhattan Square (now Theodore Roosevelt Park) for the Museum uses. Neither the proposed project nor this alternative would result in a significant adverse land use impact.

OPEN SPACE

While the proposed project would result in a reduction in available open space in Theodore Roosevelt Park of approximately 0.27 acres (approximately 11,600 square feet), the reduction

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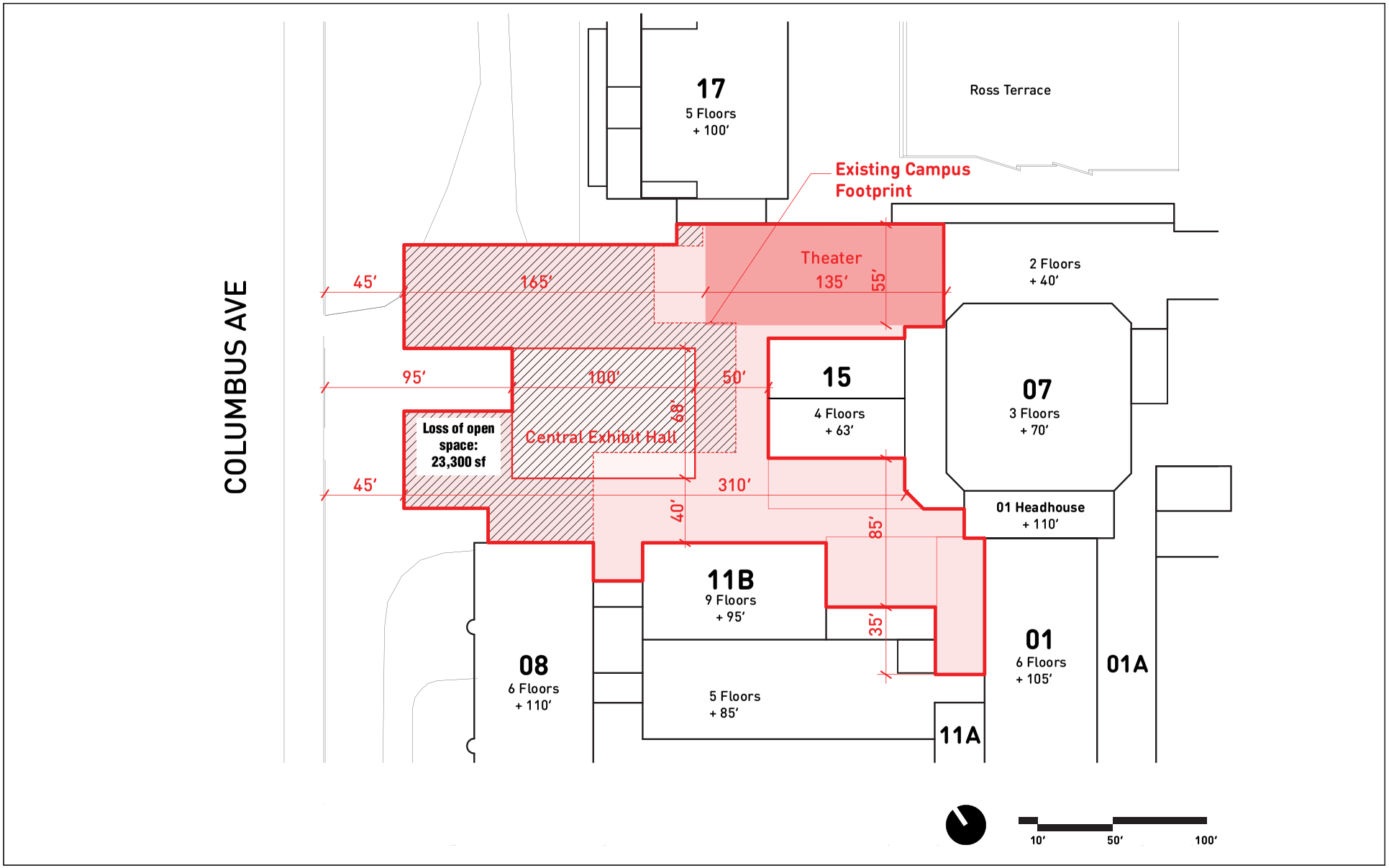
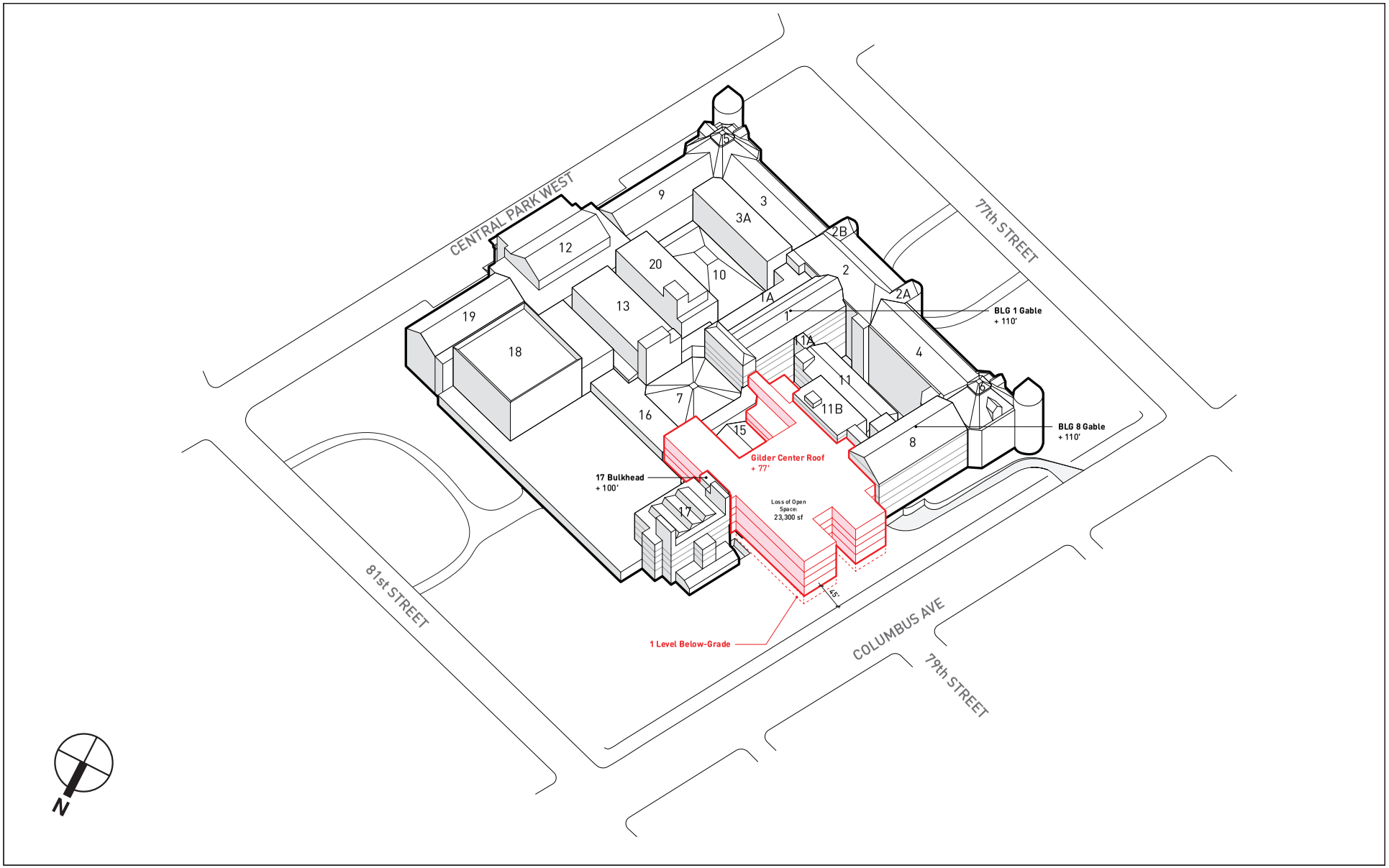


Alternative 3 Building Footprint

Loss of Open Space

AMNH Gilder Center for Science, Education, and Innovation

Alternative 3
Conceptual Site Plan
Figure 16-1



Alternative 3 Building Footprint

Below- Grade Footprint

Alternative 3
Conceptual View of AMNH Campus
Figure 16-2

with Alternative 3 would be larger, at approximately 0.53 acres (approximately 23,300 square feet). This alternative would be expected to result in the removal of up to 4 more trees than the proposed project. Like the proposed project, it is expected that this alternative would result in landscaping improvements in Theodore Roosevelt Park that would accommodate the uses of the 23,200 square feet eliminated by this alternative. With these modifications and improvements, park users would continue to have access to areas for gathering, play, and respite, as well as pathways for Museum entry and traversing the Park. Compared to the proposed project, Alternative 3 would result in a greater loss of public open space in Theodore Roosevelt Park. However, in part because of the landscaping improvements and because the study area is well-served by open space resources, the loss of open space under this alternative would not be considered a significant adverse impact.

SHADOWS

With Alternative 3, the development footprint would occupy more of Theodore Roosevelt Park, resulting in incremental shadows reaching more areas of the Park. However, the building height would be lower, resulting in some shorter incremental shadows compared with the proposed project. Durations of incremental shadows cast by this alternative on adjacent park areas would be similar to the proposed project. The overall effects of shadows cast by this alternative would therefore be similar to those cast by the proposed project and no significant adverse impacts would occur.

HISTORIC AND CULTURAL RESOURCES

Alternative 3 would avoid the demolition of Building 15, a contributing building to the S/NR-listed Museum complex. However, as Building 15 would be surrounded on all sides, thereby blocking visibility of its facades, there would be limited preservation value in retaining the building. This alternative was reviewed by OPRHP, which determined that it would not be prudent and feasible and would not meet the goals and objectives of the proposed project.

URBAN DESIGN AND VISUAL RESOURCES

The height of Alternative 3 (77 feet to the roof) would be lower than the proposed project (105 feet to the roof). While this alternative would not be as tall as the proposed project, it would extend farther into Theodore Roosevelt Park. The architectural design elements of this alternative have not been determined, however the building massing and footprint would provide for a more notable presence on the western side of the Museum than the proposed project, as the Gilder Center would extend closer to Columbus Avenue.

NATURAL RESOURCES

Compared to the proposed project, this alternative would result in a greater loss of trees and open space in Theodore Roosevelt Park. As noted above, while the proposed project would result in a reduction in available open space in Theodore Roosevelt Park of approximately 0.27 acres (approximately 11,600 square feet), the reduction with Alternative 3 would be approximately 0.53 acres (approximately 23,300 square feet). The required tree removal would be increased by four trees.

HAZARDOUS MATERIALS

This alternative would result in similar effects related to hazardous materials as the proposed project. Under both scenarios, there are no known significant health risks associated with the project site or the remainder of the Museum. In accordance with relevant laws and regulations, appropriate measures would be taken to handle any hazardous materials, avoiding the potential for any significant hazardous materials impacts.

TRANSPORTATION

Since Alternative 3 would result in the same programming as the proposed project, it would be expected to result in a similar increase in attendance and utilization. Therefore, the transportation impacts would be expected to be largely the same as the proposed project.

GREENHOUSE GAS EMISSIONS

Alternative 3 would have an expanded exterior envelope compared to the proposed project, reducing energy efficiency and self-shading. As a result, other steps or elements that contribute credits would be needed to achieve the LEED certification level planned for the proposed project. For example, the use of geothermal energy would contribute credits, but has been ruled out for the proposed project due to limited benefits, extended (more than 30 year) payback period, and the expected impact on the Park.

CONSTRUCTION

The overall construction phasing, logistics, and construction activities under Alternative 3 would be similar to those for the proposed project except that the Museum footprint would be expanded and the construction work area would be expanded somewhat to the north. The proximity of construction activity to surrounding receptors would not change substantially, nor would the types, number, or duration of the construction noise sources. Consequently, the ~~significant adverse~~ noise ~~impacts~~ levels from construction of Alternative 3 would be comparable to those identified for construction of the proposed project. Since peak construction activities under this Alternative are expected to be similar to the proposed project, Alternative 3 would also result in significant adverse traffic impacts at one study area intersection during peak construction. As noted above, this alternative would result in a greater loss of public open space due to the footprint of the new building. Staging activities would need to be located in additional areas of the Park or on Columbus Avenue to accommodate construction. As compared to the proposed project, construction under this alternative would have more pronounced open space effects on the surrounding community. However, as with the proposed project, nearby sections of Theodore Roosevelt Park and other resources in the area such as Central Park would accommodate the largely passive recreation activities temporarily displaced from the affected area during construction under Alternative 3.

OTHER TECHNICAL AREAS

This alternative would result in similar effects related to air quality, noise, public health, and neighborhood character as the proposed project. Significant adverse impacts are not anticipated for any of these environmental areas.

CONCLUSION

Alternative 3 would generally meet the goals and objectives of the proposed project, but would require a greater loss of public open space. It is expected that, as in the past, there would be community concerns regarding this alternative, due to the additional loss of open space and trees compared to the proposed project. Alternative 3 would address key deficiencies within the Museum as well as the need for additional space, as described in Chapter 1, "Project Description." Like the proposed project, this alternative would integrate scientific research, collections, and exhibition with its educational programming. This alternative would also provide for a more notable presence on the western side of the Museum than the proposed project, as the Gilder Center would extend closer to Columbus Avenue. However, retaining Building 15 would result in a less efficient layout than the proposed project, with fewer visual connections among project elements and existing Museum uses.

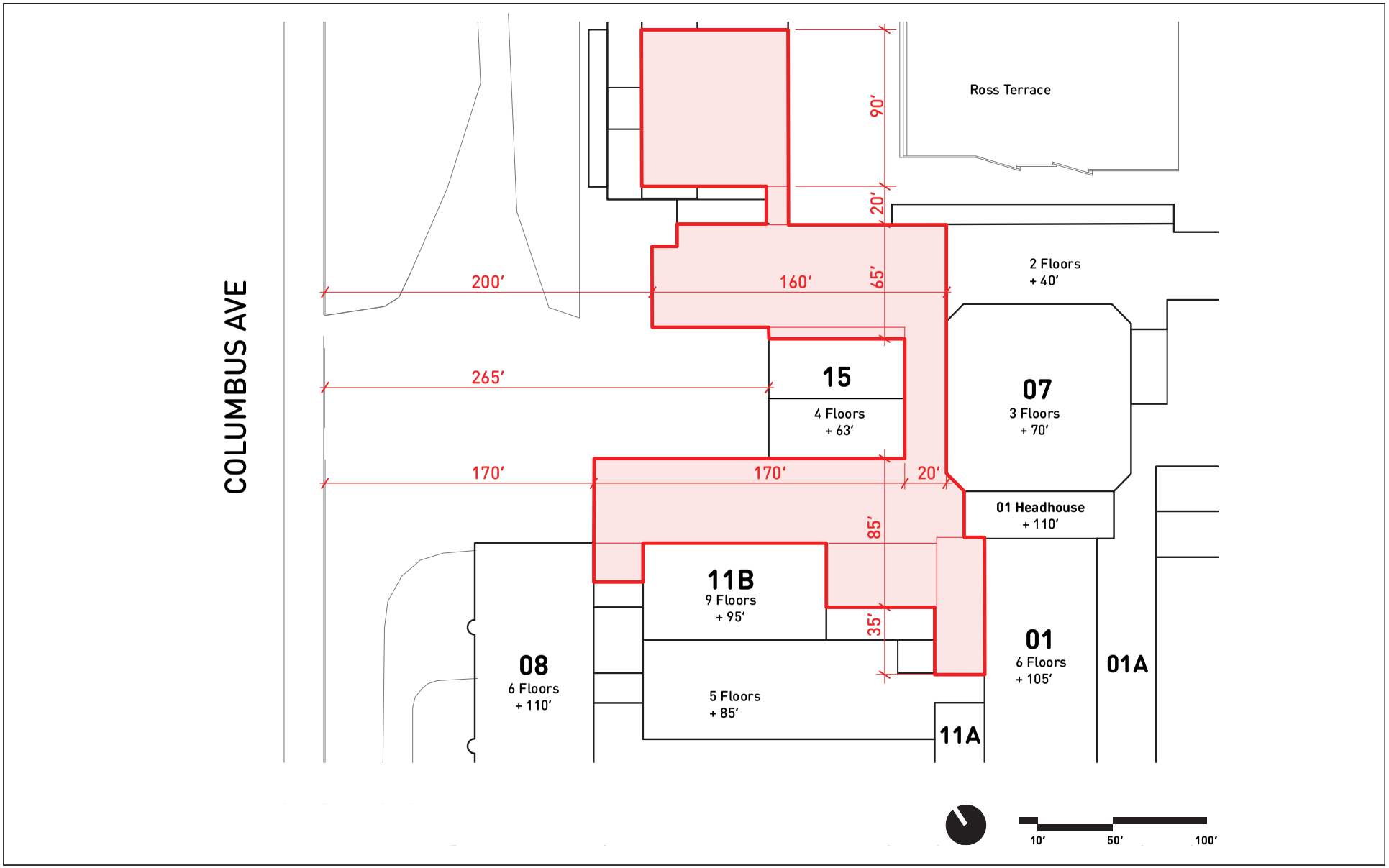
The proposed project's significant adverse transportation impacts would not be expected to be reduced or avoided with this alternative, nor would the significant adverse construction-period traffic ~~and noise~~ impacts identified for the proposed project be avoided.

F. ALTERNATIVE 4: INFILL ALTERNATIVE

DESCRIPTION

Considering the objectives and capabilities of the Museum, Alternative 4 (Infill Alternative) evaluates the feasibility and reasonableness of developing the Gilder Center within the Museum's existing footprint in spaces between or above existing Museum buildings, while avoiding the demolition of Building 15 (a contributing building to the S/NR-listed Museum complex) and encroaching on Theodore Roosevelt Park. To avoid the demolition of Building 15 and any loss of public open space in Theodore Roosevelt Park, Alternative 4 would include construction abutting Building 15 and above Building 17 (see **Figures 16-3 and 16-4**). The height of Alternative 4 would be up to 115 feet above grade, not including mechanical space, compared to 105 feet with the proposed project, with six levels above grade and one level below grade. Because Alternative 4 would be built over the existing service and delivery yard, replacement service and loading space would need to be provided, requiring the same below-grade footprint as the proposed project. With 190,000 gsf located in infill spaces and an inefficient layout, Alternative 4 would exacerbate the existing problem of spaces that are fragmented and difficult to access, and would not improve circulation or the connectivity, spatial logic, and function of the Museum's interior spaces. Important program elements of the proposed project, such as the cohesive design of exhibition and education spaces and the Collections Core would not be accommodated, since adequately sized or located space would not be available.

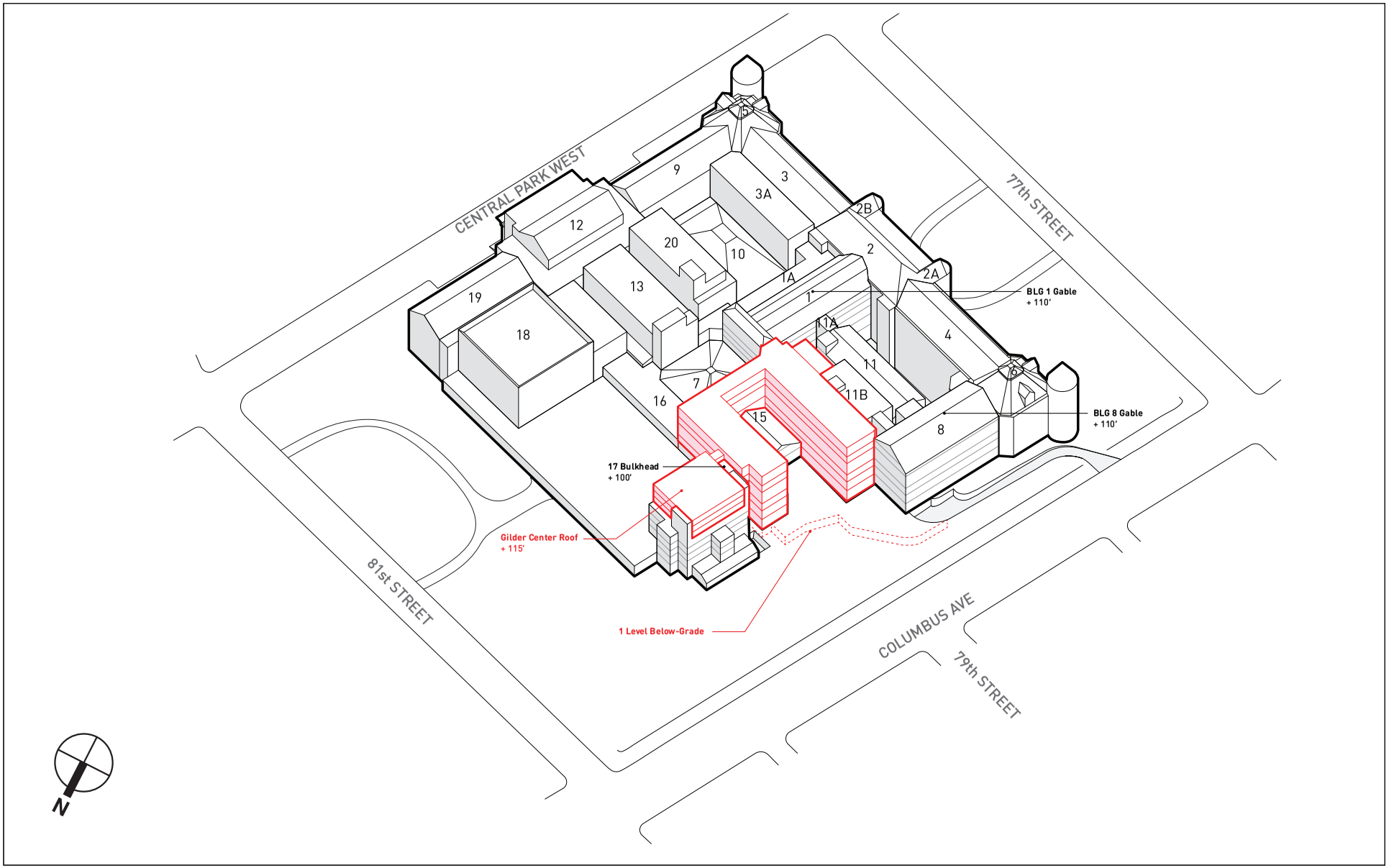
Connections with this alternative would be inferior to those of the proposed project, as they would feature sharp turns, without clear sightlines for visitor wayfinding. Sightlines are important to visitor navigation through the extensive Museum complex because they allow visitors to see where they are going and anticipate their route of travel. Without clear sightlines, navigation is confusing for visitors, resulting in increased congestion. In addition, the sharp turns of the connection and corridor in this Alternative would create additional points of crowding and delay. Without a central exhibition hall, circulation corridors would displace program space that would otherwise be located in the north and south wings of the building. Repeating a shortcoming associated with the Weston Pavilion, there would be a long connector corridor



Alternative 4 Building Footprint

Alternative 4
Conceptual Site Plan
Figure 16-3

9.22.17



Alternative 4 Building Footprint

Below- Grade Footprint

Alternative 4
Conceptual View of AMNH Campus
Figure 16-4

between Building 15 and Building 7 without programming along its sides. Since this connection would not incorporate other uses and programs, serving only a circulation function, it would be an inefficient use of space. Due to its inefficient use of space and complex circulation, Alternative 4 would not address the attendance growth expected to occur with or without the proposed project, leading to additional crowding in the Museum. Overcrowding reduces visitor access to programs and exhibits, undercutting the Museum's ability to fulfill its mission of disseminating scientific knowledge. The following section compares the potential effects of Alternative 4 to those of the proposed project.

ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Like the proposed project, this alternative would result in a new building and improvement to the Museum's existing cultural, educational, and scientific research uses, and would not introduce any new or incompatible uses. Under both the proposed project and Alternative 4, the types of uses would be the same as currently exist in the project site and in the study area, and would continue to be compatible with surrounding residential, commercial, institutional, and open space uses. Unlike the proposed project, Building 15 would not be demolished. Under both this alternative and the proposed project, the Museum is a well-established permitted use, as an 1876 State statute set aside the entire site of Manhattan Square (now Theodore Roosevelt Park) for the Museum uses. Neither the proposed project nor this alternative would result in a significant adverse land use impact.

OPEN SPACE

Alternative 4 would include the same below-grade space as the proposed project. Due to construction of this below-grade space, Alternative 4 is expected to result in the same removal of existing trees as the proposed project. Unlike the proposed project, this alternative would not result in a reduction in available open space in Theodore Roosevelt Park of approximately 0.27 acres (approximately 11,600 square feet). Areas disturbed by construction of this alternative would be restored, with path adjustments to the new building entrance. With the proposed project, the loss of open space is not a significant adverse impact in part due to improvements that are expected to improve the overall quality of the rebuilt portion of the Park, including widened paths, new plantings, and new areas for gathering and respite away from the Museum entry. Even without these improvements, Alternative 4 would not result in a significant adverse impact on open space.

SHADOWS

Alternative 4 could cast additional shadows in Theodore Roosevelt Park, since the height of the new 115-foot tall building would be taller than the proposed project (105 feet above grade, not including mechanical space). The extent of the added shadow that could result from the additional ten feet of height with Alternative 4 would vary, based on the date and time of day, but could range between approximately 3 feet at noon in the summer and 43 feet at the end of the winter analysis day.[1] Under this alternative, there would be more bulk at the rear of the new

[1] Based on shadow length factors listed in Table A2, *CEQR Technical Manual, Appendix: Shadows*, pages 17-21.

building than the proposed project, as well as an addition on the top of Building 17, which would cast shadows on the Ross Terrace and the north side of Theodore Roosevelt Park. Because the footprint of Alternative 4 would not extend farther into Theodore Roosevelt Park than the current Museum footprint, shadows cast by Alternative 4 would not extend as far west as would occur with the proposed project. Some of the shadows cast by Alternative 4 would instead fall on areas of the Park within the building site footprint of the proposed project. Neither the proposed project nor Alternative 4 would result in significant adverse shadow impacts.

HISTORIC AND CULTURAL RESOURCES

Alternative 4 would avoid the demolition of Building 15, a contributing building to the S/NR-listed Museum complex. However, the height and massing of the proposed new building under Alternative 4 would also be out of scale with the Museum's historic complex on both the western side and in the interior north/eastern portion, and would result in a large three-story addition above an existing historic five-story building (Building 17). While the 105-foot tall proposed project (not including mechanical equipment) has been designed to relate to the Museum's west side context in scale and massing, with deferential at-grade setbacks to ensure the prominence of historical Museum buildings, Alternative 4 (115 feet tall above grade) would be taller than Building 8 (110 feet tall) and Building 17 (100 feet tall). The western portion of Alternative 4 would rise 52 feet above Building 15. While the proposed project would respect the prominence of Building 8 by keeping its highest point five feet lower, Alternative 4 would be five feet taller than Building 8. The height of the new building would not be contextual with Building 15 (and other surrounding Museum buildings). The plain, stuccoed west façade of Building 15 would continue to be visible from the Park but the north facade would be covered. As this alternative would likely also result in an adverse impact due to the large size and massing of the Alternative 4 building and the overbuild of Building 17, there would be limited preservation value in retaining Building 15. This alternative would include substantially more bulk at the rear of the new building, which would be visible from Ross Terrace and the north side of Theodore Roosevelt Park. Overall, the height and massing of Alternative 4 is out of scale with the Museum's historic complex on both the western side and in the interior north/eastern portion. This alternative was reviewed by OPRHP, which determined that it would not be prudent and feasible and would not meet the goals and objectives of the proposed project.

URBAN DESIGN AND VISUAL RESOURCES

While the architectural design elements of this alternative have not been determined, compared to the proposed project Alternative 4 would provide a less prominent new entrance facing Columbus Avenue, since it would be set back farther from the street in a side wing. At 115 feet tall to the roof, this alternative would also be taller than the proposed project (105 feet tall to the roof). As noted above, the height of the new building would not be contextual with Building 15 (and other surrounding Museum buildings). In addition, under this alternative there would be substantially more bulk at the rear of the new building than the proposed project, as well as an addition on the top of Building 17, which would affect pedestrian views from the adjacent Ross Terrace and from the north side of Theodore Roosevelt Park.

NATURAL RESOURCES

In order to accommodate new below grade service and delivery areas necessary for Museum operations, Alternative 4 would have the same below-grade footprint as the proposed project.

Therefore, this alternative would result in similar effects related to natural resources as the proposed project, including the same removal of existing trees.

HAZARDOUS MATERIALS

This alternative would result in similar effects related to hazardous materials as the proposed project. Under both scenarios, there are no known significant health risks associated with the project site or the remainder of the Museum and appropriate measures would be taken to handle any hazardous materials and avoid the potential for any significant hazardous materials impacts.

TRANSPORTATION

Since Alternative 4 would not include a theater or central exhibition hall, it is expected that total Museum attendance and utilization under this alternative would be approximately 25 percent of the increase anticipated with the proposed project. Therefore, this alternative would result in fewer trips than the proposed project. Locations where traffic impacts are expected to occur already experience congested conditions and are highly sensitive methodologically to future increases in traffic volumes, even if incremental traffic volumes are low. Therefore, even with fewer trips than the proposed project, this alternative would be expected to result in significant adverse traffic impacts.

GREENHOUSE GAS EMISSIONS

Alternative 4 would have an expanded exterior envelope compared to the proposed project, reducing energy efficiency and self-shading. As a result, other steps or elements that contribute credits would be needed to achieve the LEED certification level planned for the proposed project. For example, the use of geothermal energy would contribute credits, but has been ruled out for the proposed project due to limited benefits, extended (more than 30 year) payback period, and the expected impact on the Park.

OTHER TECHNICAL AREAS

This alternative would result in similar effects related to air quality, noise, public health, construction, and neighborhood character, as the proposed project.

CONCLUSION

Alternative 4 would not meet the objectives of the proposed project. Unlike the proposed project, Alternative 4 would exacerbate existing problems with the Museum's congested and confusing circulation. Since the footprint of Alternative 4 would be reduced compared to the proposed project, connections cannot be made to Building 8's north façade, and would instead be made to its east façade. When Building 8 was constructed, it was intended to connect to a future Museum building to its north. As a result, Building 8 already has penetrations on its north side for future connections to a new building. Utilizing these existing penetrations, the proposed project would connect efficiently and as originally intended with Building 8, enhancing circulation and connectivity. The connections made with this alternative to Building 8 would have sharp turns, without clear sightlines for visitor wayfinding, resulting in visitor confusion and crowding.

Retaining Building 15 would also result in a less efficient layout than the proposed project, accommodating less program space, with fewer visual connections among project elements and

existing Museum uses. With respect to programming, Alternative 4 would not include some of the proposed project's important features, including the Collections Core, a theater, and central exhibition hall. The dispersed arrangement of space in this alternative would not provide visual and physical integration of science, education, and exhibition programming. The scale of the hall is intended to inspire visitors and encourage exploration inside the Museum and in the world. This objective requires a large civic space that showcases the Museum's offerings, similar to the Museum's Roosevelt Rotunda or the Rose Center for Earth and Space. Opening onto Theodore Roosevelt Park and creating an important circulation route through the Museum to Central Park West, the central exhibition hall would orient visitors and invite the public to experience the Museum.

Without a central exhibition hall and given the long connector corridor and dispersed, infill nature of this alternative, Alternative 4 would fail to achieve the visual, physical and intellectual links between exhibits, learning spaces, and collections that would be achieved by the proposed project.

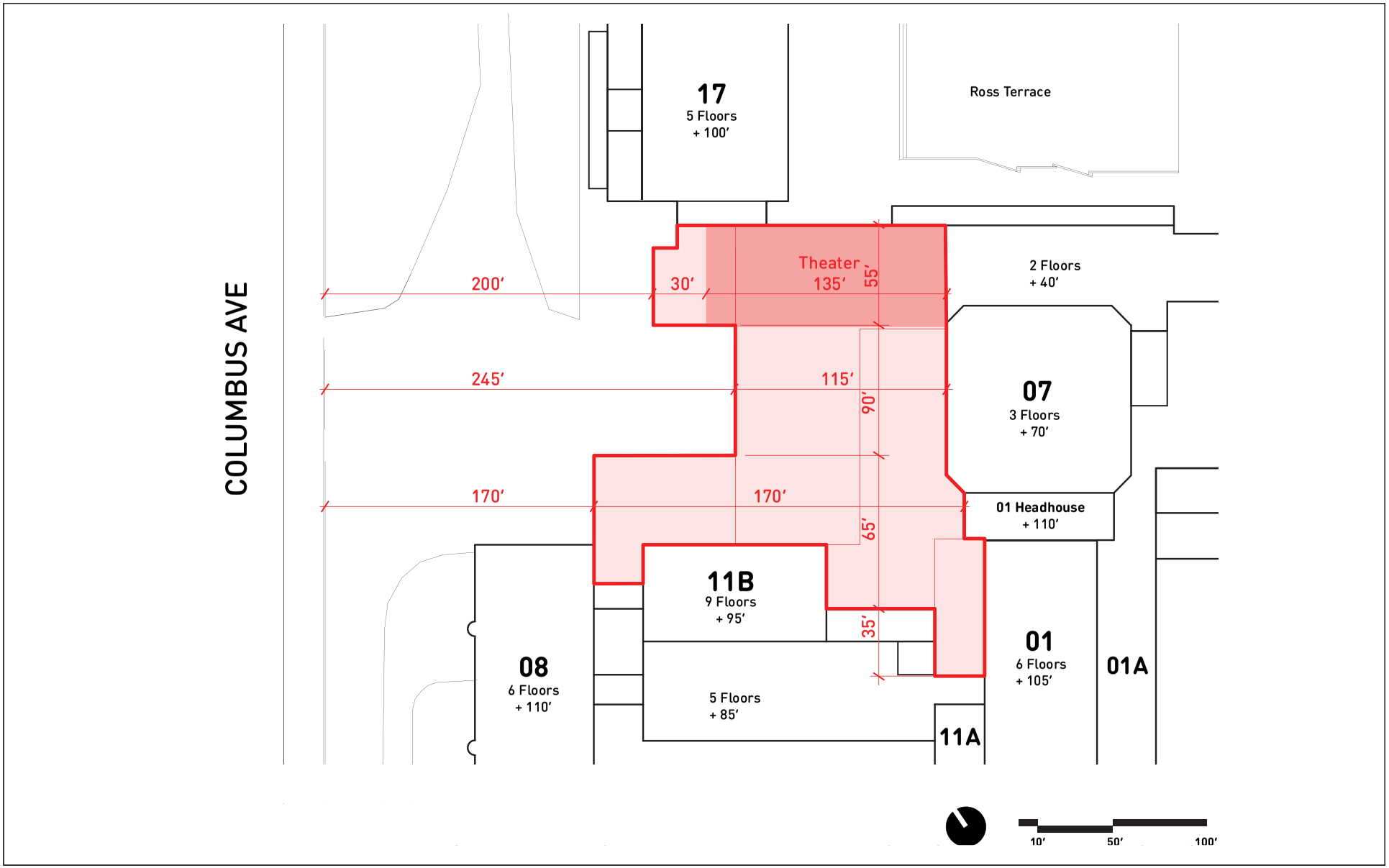
While the proposed project has been designed to relate to the Museum's west side context in scale and massing, with deferential at-grade setbacks to ensure the prominence of historical Museum buildings, Alternative 4 would be taller than adjacent historic buildings, with a large addition above Building 17. There would be substantially more bulk at the rear of the new building; Alternative 4 would therefore affect pedestrian views from the Ross Terrace and the north side of Theodore Roosevelt Park and be less compatible with this area of the Museum's form, scale, and massing than the proposed project.

While it would avoid the demolition of Building 15 (a contributing building to the S/NR-listed Museum complex) and the loss of public open space, Alternative 4 does not meet the project objectives, as it would fail to achieve the critical circulation improvements of the proposed project, needed to address current and future increased attendance. Alternative 4 would also not include important components of the proposed project with respect to connectivity and programming and its building massing would be less contextual. Similar to the proposed project, Alternative 4 would result in significant adverse impacts related to transportation, historic resources, and construction-period traffic ~~and noise~~.

G. ALTERNATIVE 5: REDUCED FOOTPRINT ALTERNATIVE A

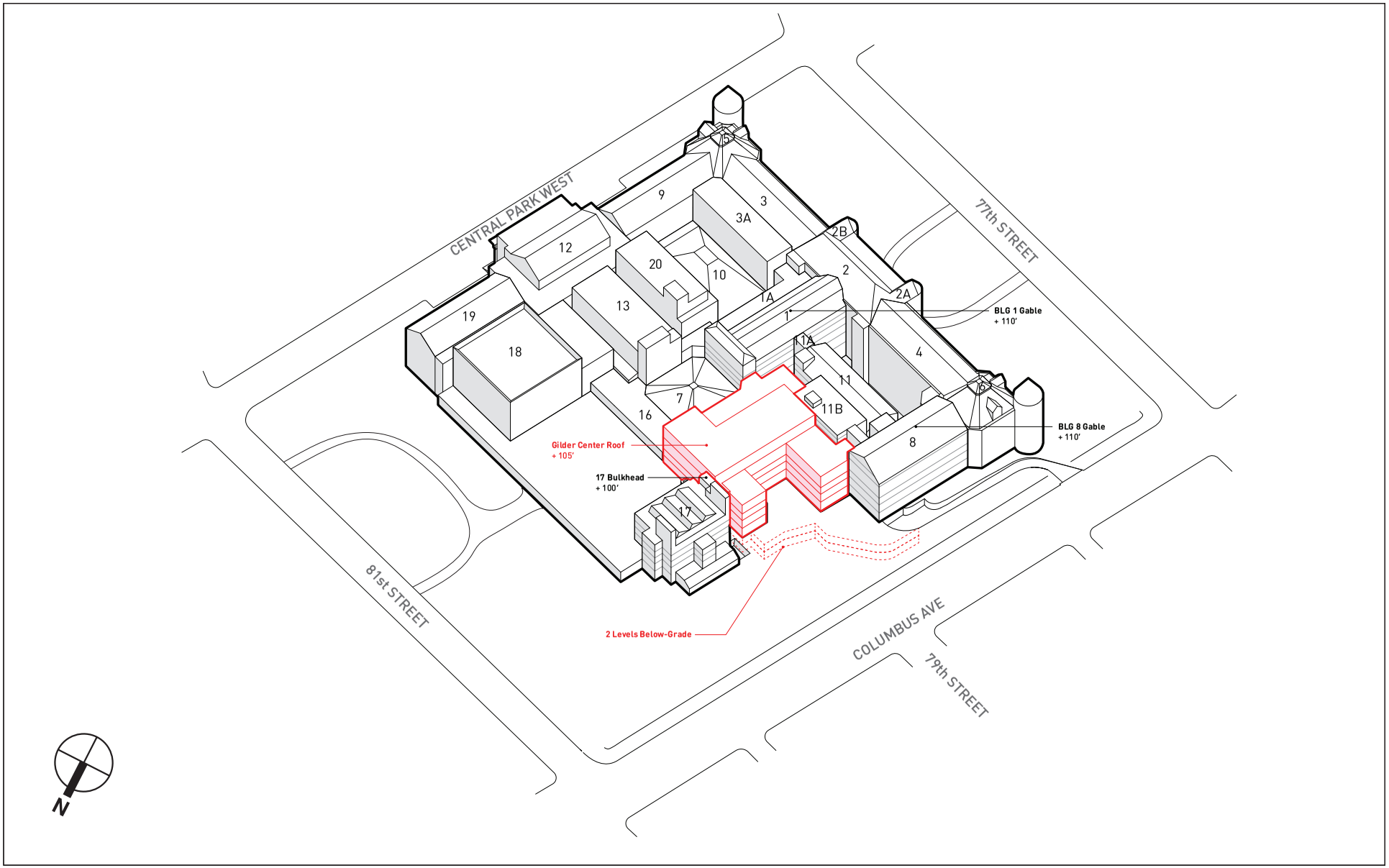
DESCRIPTION

Considering the objectives and capabilities of the Museum, Alternative 5 (Reduced Footprint Alternative A) evaluates the feasibility and reasonableness of developing the Gilder Center within the Museum's existing footprint, thereby avoiding encroaching on public open space. As with the proposed project, Alternative 5 would result in the demolition of Building 15, a contributing building to the S/NR-listed Museum complex. Alternative 5 would contain approximately 200,000 gsf of space and would be the same height as the proposed project (approximately 105 feet above grade, not including rooftop mechanical space, compared to 105 feet for the proposed project) (see **Figures 16-5 and 16-6**). It would also be built over the existing service and delivery yard, and, therefore service and loading space must be replaced, requiring the same below-grade footprint as the proposed project. In order to keep Alternative 5 the same height as the proposed project in a reduced footprint, it would have three major design differences from the proposed project: it would not have a central exhibition hall; it would have substantially more bulk at the rear of the building, above the Ross Terrace; and it would include



Alternative 5 Building Footprint

Alternative 5
Conceptual Site Plan
Figure 16-5



Alternative 5 Building Footprint

Below- Grade Footprint

AMNH Gilder Center for Science, Education, and Innovation

Alternative 5
Conceptual View of AMNH Campus
Figure 16-6

a second below-grade level, increasing the total below-grade space by 35,000 gsf. Thus, this alternative would have five levels above grade, with no setbacks from the Ross Terrace, and two levels below grade. However, the additional below-grade space would not be appropriate for most programs uses, as it would have no natural lighting and poor connections to the rest of the Museum. Even use for collections storage is substandard due to the risk of water infiltration.

Connections with this alternative would be inferior to those of the proposed project, as they would feature sharp turns, without clear sightlines for visitor wayfinding. Sightlines are important to visitor navigation through the extensive Museum complex because they allow visitors to see where they are going and anticipate their route of travel. Without clear sightlines, navigation is confusing for visitors, resulting in increased congestion. In addition, the sharp turns of the connection and corridor in this alternative would create additional points of crowding and delay. Without a central exhibition hall, circulation corridors would displace program space. The space two levels below grade would have no visual or physical connection to the above-grade program space, with only an elevator providing vertical circulation. It also would not connect to any existing Museum buildings, creating new dead end pathways. Due to its complex circulation, Alternative 5 would not address the attendance growth expected to occur with or without the proposed project, leading to additional crowding in the Museum. Overcrowding reduces visitor access to programs and exhibits, undercutting the Museum's ability to fulfill its mission of disseminating scientific knowledge. The following section compares the potential effects of Alternative 5 to those of the proposed project.

ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Like the proposed project, this alternative would result in a new building and improvement to the Museum's existing cultural, educational, and scientific research uses. However, unlike the proposed project, it would not result in the loss of 0.27 acres of open space in Theodore Roosevelt Park. Under both the proposed project and Alternative 5, the types of uses would be the same as currently exist at the project site and in the study area, and would continue to be compatible with surrounding residential, commercial, institutional, and open space uses. As with the proposed project, Building 15 would be demolished. Under both this alternative and the proposed project, the Museum is a well-established permitted use, as an 1876 State statute set aside the entire site of Manhattan Square (now Theodore Roosevelt Park) for the Museum uses. Neither the proposed project nor this alternative would result in a significant adverse land use impact.

OPEN SPACE

Alternative 5 would include the same below-grade footprint as the proposed project and therefore is expected to result in the same removal of existing trees. Unlike the proposed project, this alternative would not result in a reduction in available open space in Theodore Roosevelt Park of approximately 0.27 acres (approximately 11,600 square feet). Areas disturbed by construction of this alternative would be restored, with path adjustments to the new building entrance. With the proposed project, the loss of open space is not a significant adverse impact in part due to improvements that are expected to improve the overall quality of the rebuilt portion of the Park, including widened paths, new plantings, and new areas for gathering and respite away from the Museum entry.

SHADOWS

Because the footprint of Alternative 5 would not extend farther into Theodore Roosevelt Park than the current Museum footprint, shadows cast by Alternative 5 would not extend as far west as would occur with the proposed project. Some of the shadows cast by Alternative 5 would instead fall on areas of the Park within the building site footprint of the proposed project. However, under this alternative, there would be more bulk at the rear of the new building than the proposed project. As a result, Alternative 5 would cast longer shadows on the Ross Terrace because it would not be set back from the Terrace, compared with the proposed project. The additional length of incremental shadow would vary depending on the date and time; for example, at 3:30 PM on the June 21 analysis day, incremental shadow from Alternative 5 on Ross Terrace would be approximately 50 feet longer compared to the proposed project, and on March 21 (and September 21) at 3:30 PM the incremental shadow would be approximately 65 feet longer. The overall effects of shadows cast by this alternative would be similar to those cast by the proposed project and significant adverse impacts would not occur.

HISTORIC AND CULTURAL RESOURCES

Like the proposed project, this alternative would require the demolition of Building 15, a contributing building to the S/NR-listed Museum complex, and, therefore, would result in the same significant adverse impact to architectural resources. Under this alternative there would be substantially more bulk at the rear of the new building, which would be visible from Ross Terrace and the north side of Theodore Roosevelt Park. Therefore, the height and massing of this alternative is out of scale with the Museum's historic complex in the interior north/eastern portion.

URBAN DESIGN AND VISUAL RESOURCES

The height of this alternative would be the same as the proposed project (105 feet to the roof). This alternative would not occupy any additional portion of Theodore Roosevelt Park and would provide a less prominent new entrance facing Columbus Avenue, compared to the proposed project, since it would be set back farther from the street. Although the architectural design elements of this alternative have not been determined, under this alternative there would be more bulk at the rear of the new building than the proposed project, which would affect pedestrian views from the adjacent Ross Terrace and from the north side of Theodore Roosevelt Park.

NATURAL RESOURCES

In order to accommodate new below grade service and delivery areas necessary for Museum operations, Alternative 5 would have the same below-grade footprint as the proposed project. Therefore, this alternative would result in similar effects related to natural resources as the proposed project, including the same removal of existing trees.

HAZARDOUS MATERIALS

This alternative would result in similar effects related to hazardous materials as the proposed project. Under both scenarios, there are no known significant health risks associated with the project site or the remainder of the Museum and appropriate measures would be taken to handle any hazardous materials and avoid the potential for any significant hazardous materials impacts.

TRANSPORTATION

Since Alternative 5 would not include a central exhibition hall, it is expected that total Museum attendance and utilization under this alternative would be approximately 70 percent of the increase anticipated with the proposed project. Therefore, this alternative would result in fewer trips than the proposed project. Locations where traffic impacts are expected to occur already experience congested conditions and are highly sensitive methodologically to future increases in traffic volumes, even if incremental traffic volumes are low. Therefore, even with fewer trips than the proposed project, this alternative would be expected to result in significant adverse traffic impacts.

CONSTRUCTION

The overall construction phasing, logistics, and construction activities under Alternative 5 would be similar to those for the proposed project except that the expanded below-grade space would require additional excavation activities (i.e., rock excavation), increasing the duration of construction by approximately 6 to 8 months (from approximately 36 months to 42-44 months). Excavation work is one of the most noise-sensitive construction activities and involves the use of impact hammers, which emit high levels of noise. Therefore, compared to the proposed project, Alternative 5 would result in extended construction noise effects and have the potential for temporary construction noise impacts not identified with the proposed project. Furthermore, most noise control measures have limited effectiveness in reducing the noise from rock excavation, because rock excavation results in ground-borne and structure-borne noise, which cannot be shielded by barriers or enclosures. The nature of the noise produced by hydraulic break rams is very distinct, making it more readily audible even when the magnitude of the noise level from rock excavation may not be particularly high.

Since the peak worker and truck trips during construction under Alternative 5 are expected to be similar to those for the proposed project, the construction traffic impacts associated with Alternative 5 would also be expected to occur at one study area intersection. As noted above, the Gilder Center under this alternative would be developed within the Museum's existing footprint, thereby likely resulting in a lesser temporary loss of public open space during construction.

OTHER TECHNICAL AREAS

This alternative would result in similar effects related to air quality, greenhouse gas emissions, noise, public health, and neighborhood character as the proposed project. Significant adverse impacts are not anticipated for any of these environmental areas.

CONCLUSION

This alternative would not meet the project objectives. Unlike the proposed project, Alternative 5 would replicate existing problems with the Museum's congested and confusing circulation. Since the footprint of Alternative 5 would be reduced compared to the proposed project, connections cannot be made to Building 8's north façade, and would instead be made to its east façade. When Building 8 was constructed, it was intended to connect to a future Museum building to its north. As a result, Building 8 already has penetrations on its north side for future connections to a new building. Utilizing these existing penetrations, the proposed project would connect efficiently and as originally intended with Building 8, enhancing circulation and connectivity. In contrast, ~~T~~the connections made with Alternative 5 to Building 8 would have sharp turns, without clear sightlines for wayfinding, resulting in visitor confusion and crowding.

By creating below-grade space that would not connect to any existing Museum buildings, this alternative would exacerbate the Museum's congested circulation, creating new dead end pathways. In addition, the additional below-grade space would not be appropriate for most programs uses or collections storage.

With respect to programming, Alternative 5 would not include some of the proposed project's important features, including a central exhibition hall. The central exhibition hall is an important element of the proposed project, as it would advance the Museum's mission by visually and physically integrating science, education, and exhibition. The scale of the hall is intended to inspire visitors and encourage exploration inside the Museum and in the world. This objective requires a large civic space that showcases the Museum's offerings, similar to the Museum's Roosevelt Rotunda or the Rose Center. Opening onto Theodore Roosevelt Park and creating an important circulation route through the Museum to Central Park West, the central exhibition hall would orient visitors and invite the public to experience the Museum. Without a central exhibition hall, Alternative 5 would fail to achieve the visual, physical, and intellectual links between exhibits, learning spaces, and collections that would be achieved by the proposed project.

While the building height would be the same as the proposed project, under this alternative there would be more bulk at the rear of the new building than the proposed project, which would affect the pedestrian experience on and views from the adjacent Ross Terrace and from the north side of Theodore Roosevelt Park, as well as causing additional shadows on the Ross Terrace. In order to keep this Alternative 5 the same height as the proposed project, there would be an additional level below-grade, increasing the total below-grade space by 35,000 gsf. However, this additional below-grade space would not be appropriate for most programs uses, as it would have poor connections to the rest of the Museum, resulting in new dead ends that limit circulation. If the second below grade level were not built, that space would be added in two additional above grade levels, with similar impacts as described below for Alternative 6.

While it would avoid the loss of public open space, Alternative 5 does not meet the project objectives, as it would fail to achieve the critical circulation improvements of the proposed project, needed to address current and future increased attendance, and would instead create additional dead-end spaces with no connectivity to surrounding buildings. Compared to the proposed project, there would also be a loss of program connectivity and key design features that would help address the objectives of the proposed project. Like the proposed project, Alternative 5 would result in significant adverse impacts related to transportation, historic resources, and construction-period traffic ~~and noise~~. Alternative 5 also has the potential for temporary construction noise impacts not identified with the proposed project, due to the need for increased excavation activities.

H. ALTERNATIVE 6: REDUCED FOOTPRINT ALTERNATIVE B

DESCRIPTION

Considering the objectives and capabilities of the Museum, Alternative 6 (Reduced Footprint Alternative B) evaluates the feasibility and reasonableness of developing the Gilder Center within the Museum's existing footprint. Similar to Alternative 5 (Reduced Footprint Alternative A), Alternative 6 would be constructed with a reduced footprint compared to the proposed project, avoiding the loss of publicly accessible open space in Theodore Roosevelt Park. As with the proposed project and Alternative 5, Alternative 6 would result in the demolition of Building

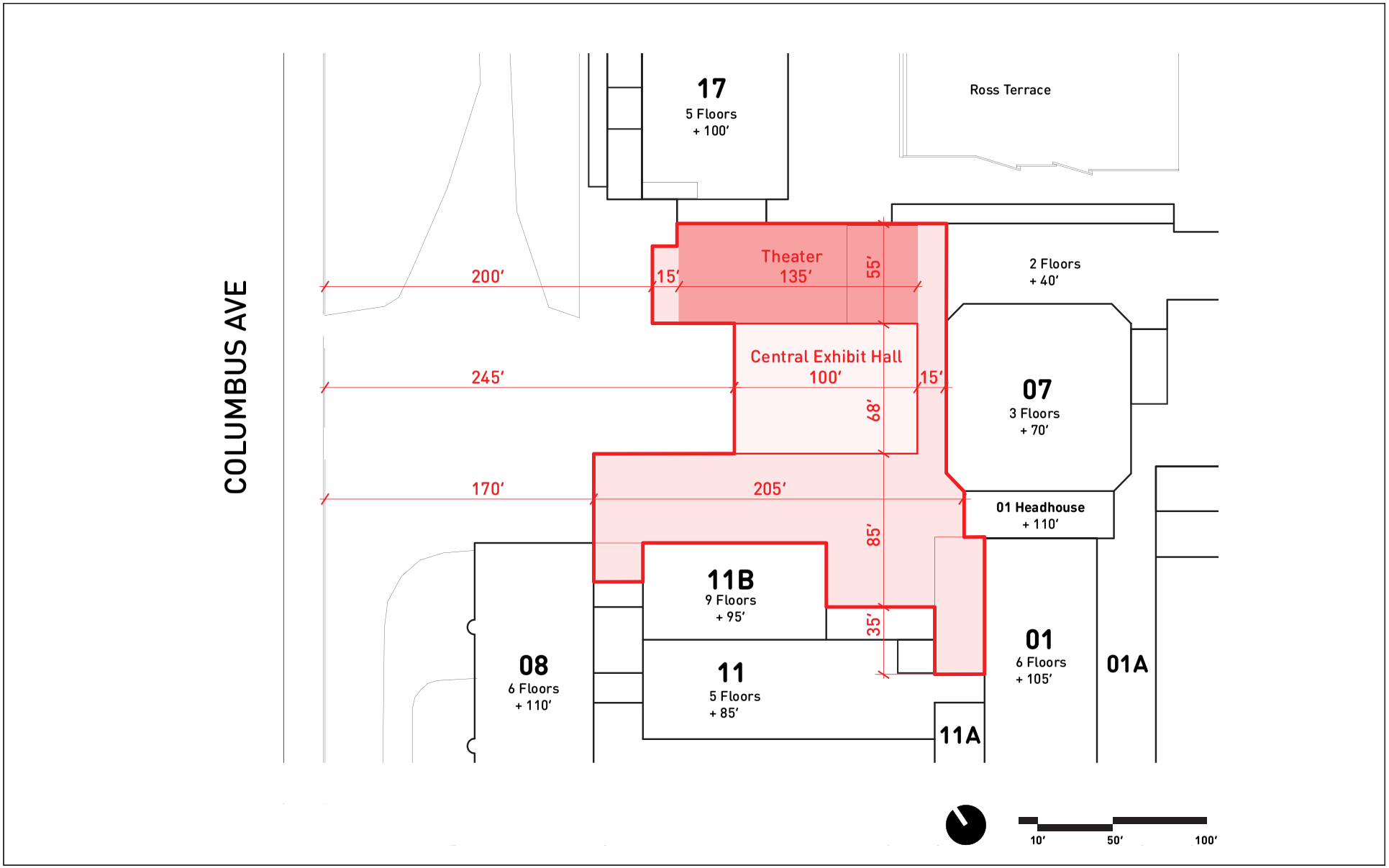
15, a contributing building to the S/NR-listed Museum complex. This alternative would also be built over the existing service and delivery yard, and, therefore, service and loading space must be replaced, requiring the same below-grade footprint as the proposed project. Like Alternative 5, Alternative 6 in a reduced footprint would have major design differences compared to the proposed project. Unlike Alternative 5, Alternative 6 would have only one level below grade, requiring two additional levels above grade and the building height to be increased to 128 feet, not including mechanical equipment (compared to 105 feet for the proposed project). Thus, this alternative would have 7 levels above grade, without setbacks from the Ross Terrace, and one level below grade. The top two levels would not connect to any existing Museum buildings and would only connect vertically within the new building, resulting in new dead ends that limit circulation.

Consistent with Alternative 5 and the proposed project, Alternative 6 would have approximately 200,000 gsf. Alternative 6 would accommodate the proposed project's education and exhibition program space. Unlike Alternative 5, Alternative 6 with the additional above-grade floor would accommodate a central exhibition hall (see **Figures 16-7 and 16-8**); however, the hall would have a reduced footprint and correspondingly reduced visual and physical access to and integration of the other program elements (see **Figure 16-9**). Connections to Building 8 and to the visitor elevators would be inferior to those of the proposed project, as they would feature sharp turns, without clear sightlines for visitor wayfinding, resulting in visitor confusion and crowding. **Figures** ~~**16-9** illustrate~~illustrates how the connection to Building 8 could be achieved on the ground floor (Level 1) and an illustrative upper floor (Level 3). In addition to the challenges created for wayfinding, there would be insufficient space for queuing at the elevators on the ground floor, creating additional points of crowding and delay. See Figures **16-10** and **16--11** for photographs of existing crowding in a corridor of similar width adjacent to elevators at the Theodore Roosevelt Rotunda corridor. Like the elevators in the Theodore Roosevelt Rotunda corridor, the elevators in the Gilder Center—on the opposite side of the campus—would serve a critical vertical circulation function at a major entry point, while also relieving congestion at other locations by drawing visitors to the west side of the complex. Unlike Alternative 6, however, the Gilder Center design provides the necessary space to avoid re-creating the overcrowded conditions currently experienced at the Theodore Roosevelt Rotunda. These inefficient circulation corridors would displace program space that would otherwise be located in the south wing of the building and reduce the size and prominence of the Collections Core. Prominent space along the west façade exterior wall would be used for a corridor and elevator rather than taking advantage of this space for program uses. Overall, this alternative would replicate some of the existing problems with the Museum's congested and confusing circulation, which the proposed project is intended to address. The following section compares the potential effects of Alternative 6 to those of the proposed project.

ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

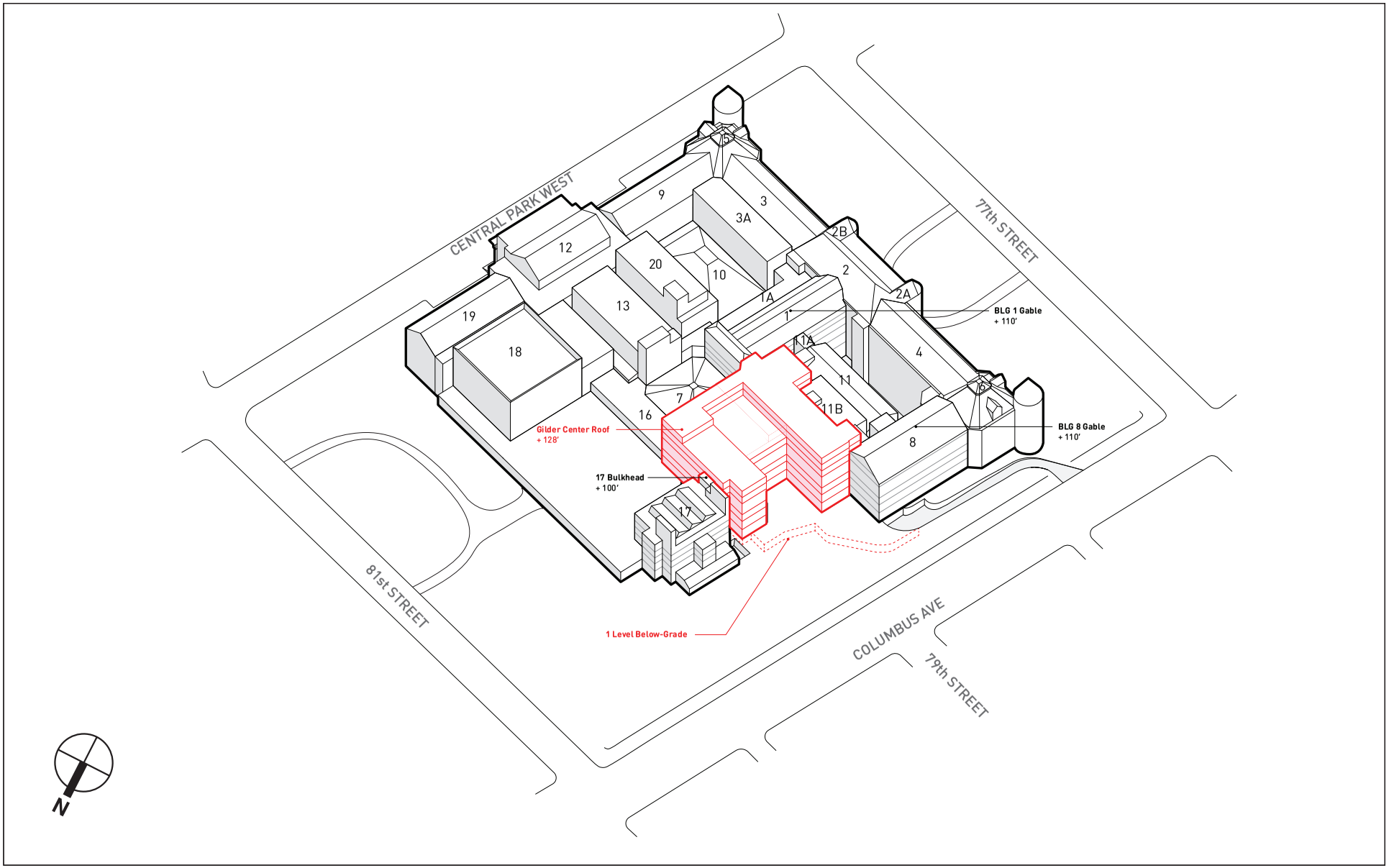
Similar to the proposed project, this alternative would result in a new building and improvement to the Museum's existing cultural, educational, and scientific research uses. Under both the proposed project and Alternative 6, the types of uses would be the same as currently exist at the project site and in the study area, and would continue to be compatible with surrounding residential, commercial, institutional, and open space uses. As with the proposed project, Building 15 would be demolished. Under both this alternative and the proposed project, the



Alternative 6 Building Footprint

Alternative 6
Conceptual Site Plan
Figure 16-7

9.22.17

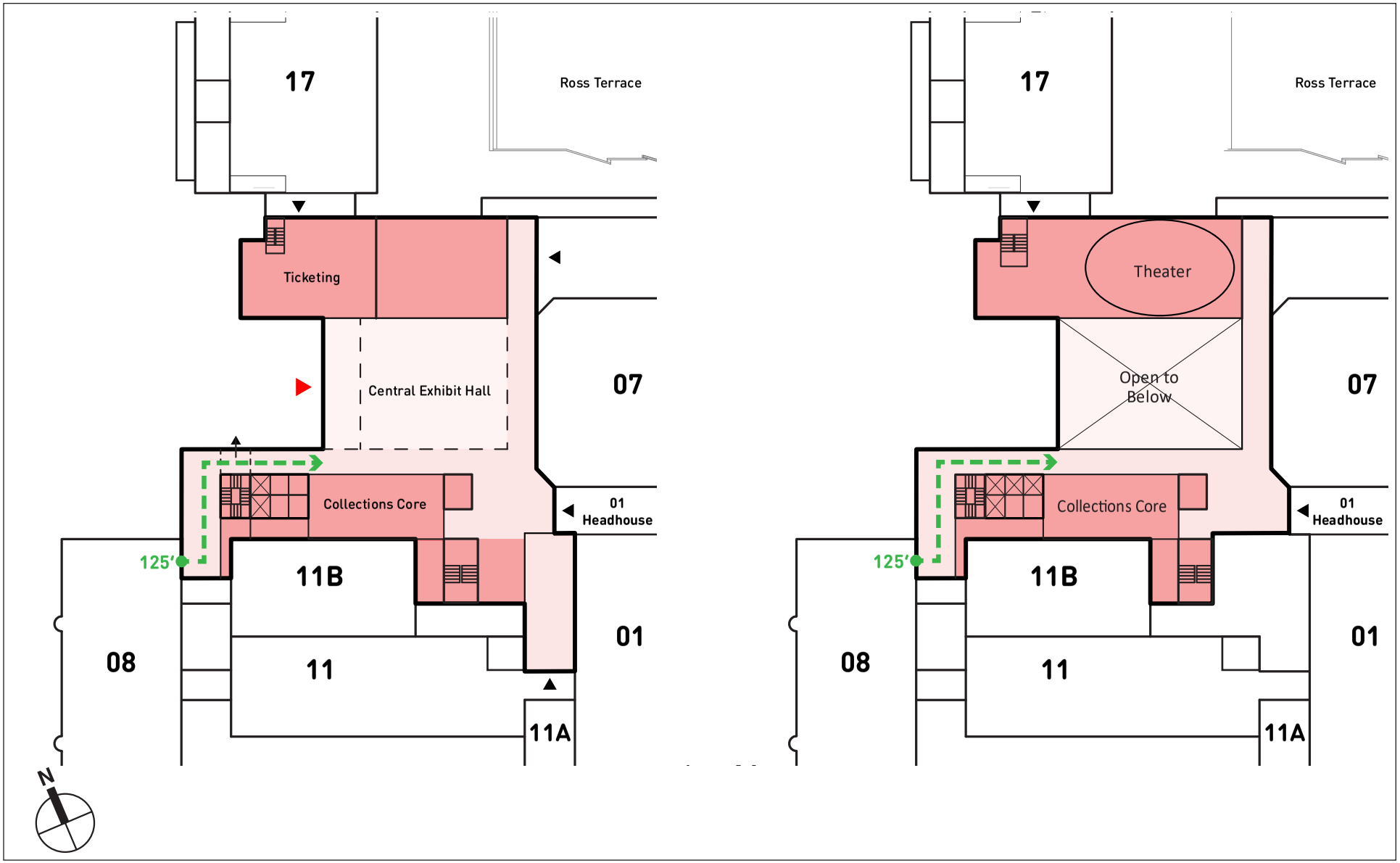


Alternative 6 Building Footprint

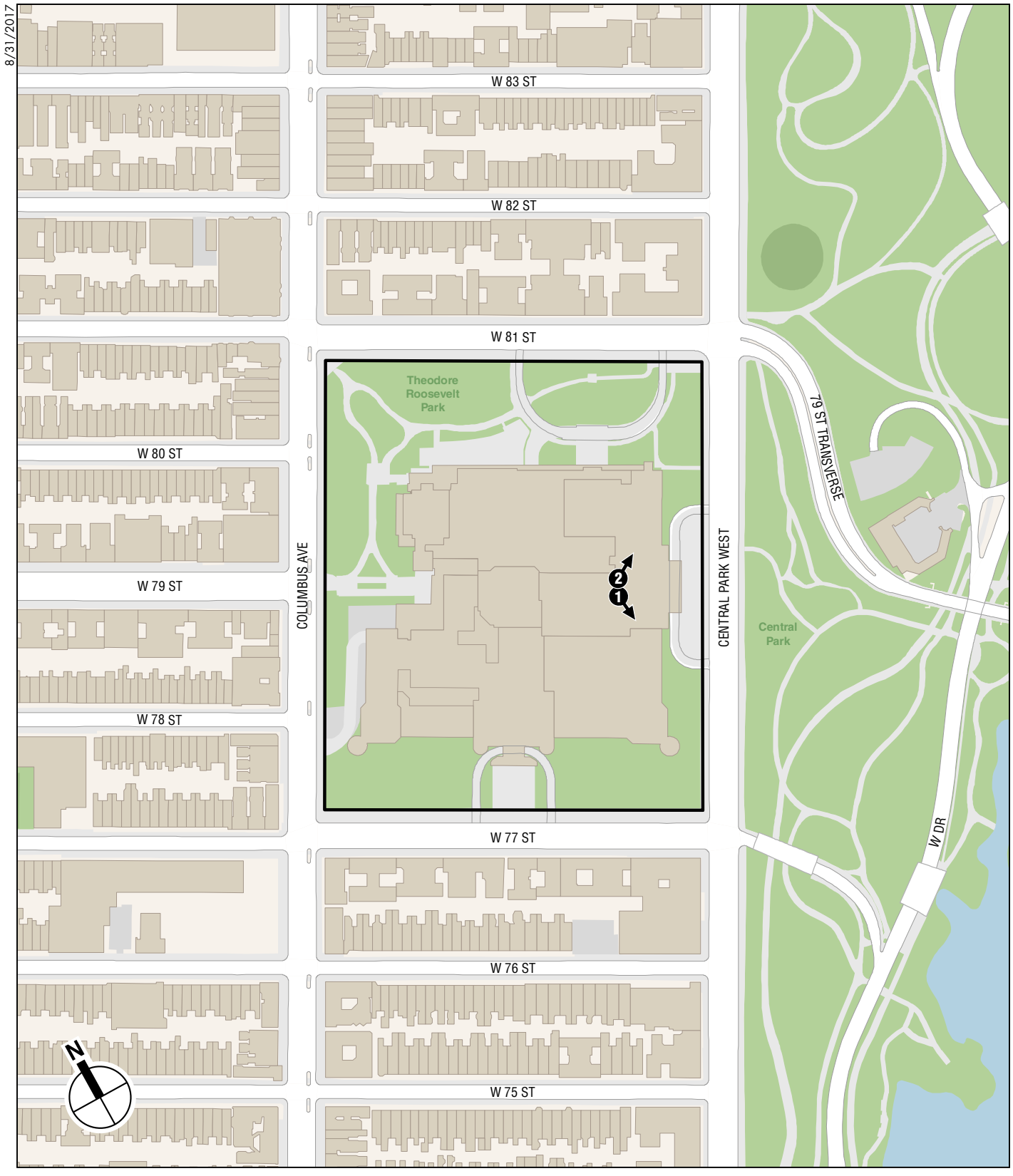
Below- Grade Footprint

Alternative 6
Conceptual View of AMNH Campus
Figure 16-8

AMNH Gilder Center for Science, Education, and Innovation



Alternative 6
Conceptual Layout of Levels 1 and 3
Figure 16-9



Theodore Roosevelt Park

Photograph View Direction and Reference Number

0 400 FEET

AMNH Gilder Center for Science, Education, and Innovation

Key to Photographs
Figure 16-10

View of south Theodore Roosevelt Rotunda 14' wide corridor (overcrowding in front of elevator) **1**

View of north Theodore Roosevelt Rotunda 14' wide corridor (overcrowding in front of elevator and stairs) **2**

Museum is a well-established permitted use, as an 1876 State statute set aside the entire site of Manhattan Square (now Theodore Roosevelt Park) for the Museum uses. Neither the proposed project nor this alternative would result in a significant adverse land use impact.

OPEN SPACE

Alternative 6 would include the same below-grade space as the proposed project. Due to construction of this below-grade space, Alternative 6 is expected to result in the same removal of existing trees as the proposed project. Unlike the proposed project, this alternative would not result in a reduction in available open space in Theodore Roosevelt Park of approximately 0.27 acres (approximately 11,600 square feet). Areas disturbed by construction of this alternative would be restored, with path adjustments to the new building entrance. With the proposed project, the loss of open space is not a significant adverse impact in part due to improvements that are expected to improve the overall quality of the rebuilt portion of the Park, including widened paths, new plantings, and new areas for gathering and respite away from the Museum entry. Even without these improvements, Alternative 6 would not result in a significant adverse impact on open space.

SHADOWS

Alternative 6 would cast additional shadows in Theodore Roosevelt Park, since the height of the new building (128 feet to the roof) would be taller than the proposed project (105 feet to the roof). The extent of the added shadow that could result from the additional 23 feet of height with Alternative 6 would vary, based on the date and time of day, but could range between approximately 7 feet at noon in the summer and 98 feet at the end of the winter analysis day.[2] Because the footprint of Alternative 6 would not extend farther into Theodore Roosevelt Park than the current Museum footprint, shadows cast by Alternative 6 would not extend as far west as would occur with the proposed project. Some of the shadows cast by Alternative 6 would instead fall on areas of the Park within the building site footprint of the proposed project. Under this alternative, there would be substantially more bulk at the rear of the new building than the proposed project. As a result, Alternative 6 would cast longer shadows on the Ross Terrace because it would be higher and not set back from the Terrace, compared with the proposed project. The additional length of incremental shadow would vary depending on the date and time; for example, at 3:30 PM on the June 21 analysis day, incremental shadow from Alternative 6 on Ross Terrace would be approximately 74 feet longer compared to the proposed project, and on March 21 (and September 21) at 3:30 PM the incremental shadow would be approximately 107 feet longer. Neither the proposed project nor Alternative 6 would result in significant adverse shadow impacts.

HISTORIC AND CULTURAL RESOURCES

Like the proposed project, this alternative would require the demolition of Building 15, a contributing building to the S/NR-listed Museum complex, and, therefore, would result in a significant adverse impact to architectural resources. This alternative would have a less contextual relationship with the existing Museum complex than the proposed project. While the 105-foot tall proposed project (not including mechanical equipment) has been designed to relate

[2] Based on shadow length factors listed in Table A2, *CEQR Technical Manual, Appendix: Shadows*, pages 17-21.

the Museum's west side context in scale and massing, with deferential at-grade setbacks to ensure the prominence of historical Museum buildings, Alternative 6 (128 feet tall above grade) would be substantially taller than Building 8 (110 feet tall) and Building 17 (100 feet tall). Alternative 6 would result in two stories more than the proposed project, increasing its scale and bulk in relation to the north and west sections of the Museum complex. While the proposed project would respect the prominence of Building 8 by keeping its highest point five feet lower, Alternative 6 would be 18 feet taller than Building 8, creating an inappropriate relationship to the roof and gables of Building 8. In addition, under this alternative there would be no setbacks and substantially more bulk at the rear of the new building, which would be visible from Ross Terrace and the north side of Theodore Roosevelt Park. There would also be no setbacks along the north side of the new building, thereby creating a tall wall that would be taller than Building 17 and would loom over Ross Terrace. Overall, the height and massing of Alternative 6 is out of scale with the Museum's historic complex on both the western and northern sides and in the interior north/eastern portion, potentially resulting in additional adverse impacts to the historic Museum complex.

URBAN DESIGN AND VISUAL RESOURCES

Although the architectural design elements of this alternative have not been determined, compared to the proposed project Alternative 6 would provide a less prominent new entrance facing Columbus Avenue, since it would be set back farther from the street. At 128 feet tall to the roof, this alternative would be taller than the proposed project (105 feet tall to the roof). As noted above, since this alternative would be taller than surrounding existing buildings, it would be less contextual than the proposed project. In addition, under this alternative there would be substantially more bulk at the rear of the new building than the proposed project, which would affect pedestrian views from the adjacent Ross Terrace and from the north side of Theodore Roosevelt Park.

NATURAL RESOURCES

In order to accommodate new below grade service and delivery areas necessary for Museum operations, Alternative 6 would have the same below-grade footprint as the proposed project. Therefore, this alternative would result in similar effects related to natural resources as the proposed project, including the same removal of existing trees.

HAZARDOUS MATERIALS

This alternative would result in similar effects related to hazardous materials as the proposed project. Under both scenarios, there are no known significant health risks associated with the project site or the remainder of the Museum and appropriate measures would be taken to handle any hazardous materials and avoid the potential for any significant hazardous materials impacts.

TRANSPORTATION

Since Alternative 6 would result in the same programming as the proposed project, it would be expected to result in a similar increase in attendance and utilization. Therefore, the transportation impacts would be expected to be largely the same.

CONSTRUCTION

The overall construction schedule, logistics, and construction activities under Alternative 6 would be similar to those for the proposed project. Therefore, the construction impacts associated with Alternative 6 would be similar to the proposed project where significant adverse traffic impacts during peak construction would be expected at one study area intersection~~, and significant adverse construction noise impacts would also be expected~~.

OTHER TECHNICAL AREAS

This alternative would result in similar effects related to air quality, greenhouse gas emissions, noise, public health, and neighborhood character as the proposed project. Significant adverse impacts are not anticipated for any of these environmental areas.

CONCLUSION

Alternative 6 would not meet the objectives of the proposed project. Unlike the proposed project, Alternative 6 would replicate existing problems with the Museum's congested and confusing circulation. Since the footprint of Alternative 6 would be reduced compared to the proposed project, connections cannot be made to Building 8's north façade, and would instead be made to its east façade. When Building 8 was constructed, it was intended to connect to a future Museum building to its north. As a result, Building 8 already has penetrations on its north side for future connections to a new building. Utilizing these existing penetrations, the proposed project would connect efficiently and as originally intended with Building 8, enhancing circulation and connectivity.

The connections made with Alternative 6 to Building 8 would be inferior to the proposed project, as they would feature sharp turns, without clear sightlines for visitor wayfinding. Sightlines are important to visitor navigation through the extensive Museum complex because they allow visitors to see where they are going and anticipate their route of travel. Without clear sightlines, navigation is confusing for visitors, resulting in increased congestion. There would be insufficient space for queuing at the elevators on the ground floor, creating additional points of crowding and delay. Inefficient connector corridors would be required for visitor circulation, displacing program space. In addition, by creating two floors that would not connect to any existing Museum buildings, this alternative would create new dead end pathways. Overcrowding reduces visitor access to programs and exhibits, undercutting the Museum's ability to fulfill its mission of disseminating scientific knowledge. Overall, this alternative would replicate some of the existing problems with the Museum's congested and confusing circulation, which the proposed project is intended to address.

This alternative would be out of scale with the existing Museum complex, as compared to the proposed project. While the proposed project has been designed to relate the Museum's west side context in scale and massing, with deferential at-grade setbacks to ensure the prominence of historical Museum buildings, Alternative 6 would be taller than adjacent historic buildings. The added two stories create an inappropriate relationship to the lower-height roof and gables of Building 8. In addition, under this alternative there would be substantially more bulk at the rear of the new building, with no setbacks above the Ross Terrace. Alternative 6 would therefore affect pedestrian views from the Ross Terrace and the north side of Theodore Roosevelt Park and be less compatible with this area of the Museum's form, scale, and massing than the proposed project, potentially resulting in additional adverse impacts to the Museum complex. If

the two additional above grade levels were not built, that space would be added in a second below grade level, with similar impacts as described for Alternative 5.

While it would avoid the loss of public open space, Alternative 6 does not meet the project objectives, as it would fail to achieve the critical circulation improvements of the proposed project, needed to address current and future increased attendance, and would instead create additional dead-end spaces with no connectivity to surrounding buildings. The height and bulk of Alternative 6 would be out of scale with the historic Museum complex and, like the proposed project, Alternative 6 would result in significant adverse impacts related to transportation, historic resources, and construction-period traffic ~~and noise~~.

I. ALTERNATIVE 7: ROSS TERRACE ALTERNATIVE

DESCRIPTION

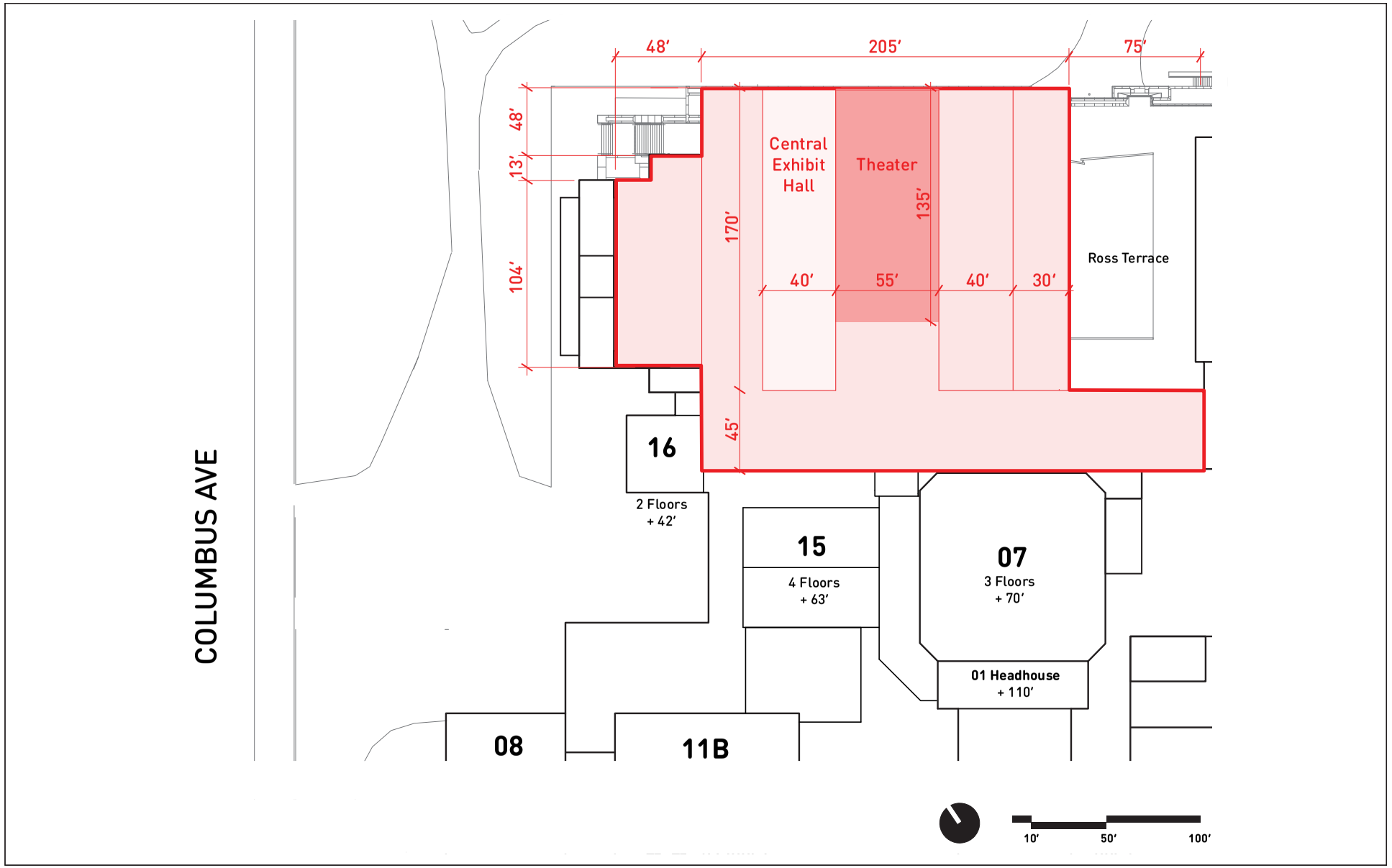
Considering the objectives and capabilities of the Museum, Alternative 7 (Ross Terrace Alternative) evaluates the feasibility and reasonableness of developing the Gilder Center in a different location from the proposed project, thereby avoiding the demolition of Building 15 and the loss of public open space in Theodore Roosevelt Park. However, this alternative would eliminate a substantial portion of the Ross Terrace, displacing approximately 30,745 square feet of existing public open space adjacent to the Rose Center for Earth and Space, developed with extensive community consultation as part of the Planetarium and North Side Project. Because this alternative does not affect the existing service and delivery yard, there would be no need for a new below-grade service and delivery area. Columns to support this alternative project would be required within the existing parking garage, resulting in a loss of parking spaces and impacting garage operations. Alternative 7 would contain approximately 200,000 gsf and would be taller than the proposed project (approximately 125 feet above grade to the roof, not including rooftop mechanical space, compared to 105 feet for the proposed project) (see **Figures 16-12 and 16-~~11~~13**). This alternative would have 6 levels above grade and none below grade. It would include a theater and a smaller exhibition hall than the proposed project. Connection improvements to Building 8, dead end pathways, and a new visitor connection to the library would not be addressed with this alternative, which would not be well-connected with the rest of the Museum complex. As shown in **Figure 16-~~10~~12**, there would be a long, narrow, five-story east-west wing abutting Building 15 and Building 7; the upper floors of this wing would not connect to any existing Museum buildings, resulting in new dead ends that limit circulation. Inefficient circulation through this wing would displace program space. A portion of the smaller rooftop(s) of Alternative 7 could possibly be used as a green roof and/or public open space; however, such space would be less accessible to the public than the Ross Terrace. This alternative would require an accessible entrance from Theodore Roosevelt Park, perhaps using the area of the existing terrace access stair and/or part of Building 17. The following section compares the potential effects of Alternative 7 to those of the proposed project.

ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

LAND USE, ZONING, AND PUBLIC POLICY

Similar to the proposed project, this alternative would result in a new building and improvement to the Museum's existing cultural, educational, and scientific research uses. Under both the proposed project and Alternative 7, the types of uses would be the same as currently exist at the

8.30.17



Alternative 7 Building Footprint

Ross Terrace Alternative 7
Conceptual Site Plan
Figure 16-12

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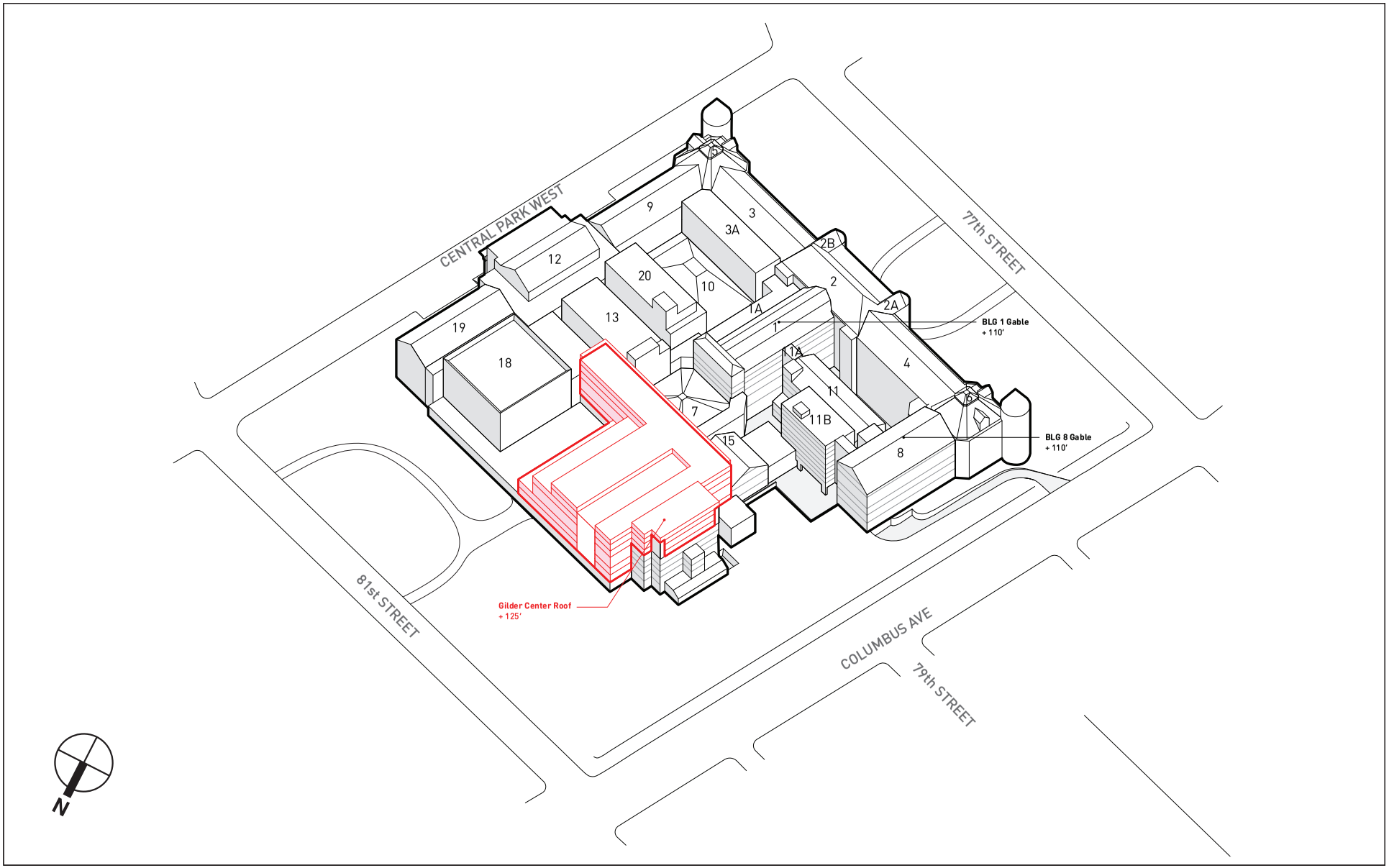

Alternative 7 Building Footprint

Ross Terrace Alternative 7
Conceptual View of AMNH Campus
Figure 16-13

AMNH Gilder Center for Science, Education, and Innovation

project site and in the study area, and would continue to be compatible with surrounding residential, commercial, institutional, and open space uses. Unlike the proposed project, no existing Museum buildings would be demolished and the footprint of the Museum would not be extended into Theodore Roosevelt Park towards Columbus Avenue. Under both this alternative and the proposed project, the Museum is a well-established permitted use, as an 1876 State statute set aside the entire site of Manhattan Square (now Theodore Roosevelt Park) for the Museum uses. Neither the proposed project nor this alternative would result in a significant adverse land use impact.

OPEN SPACE

Compared to the proposed project, this alternative would result in the elimination of 30,745 square feet of open space on Ross Terrace, but would not result in the removal of 11,600 square feet of existing open space and trees on the west side of the Museum in Theodore Roosevelt Park. Some of the displaced open space on the Ross Terrace could be replaced by new rooftop open space(s) on the new building. These rooftop open space(s) would be smaller and less accessible than the large expanse of the Ross Terrace that would be eliminated. With the proposed project, the loss of open space is not a significant adverse impact in part due to improvements that are expected to improve the overall quality of the rebuilt portion of the Park, including widened paths, new plantings, and new areas for gathering and respite away from the Museum entry. This alternative would not result in a significant adverse impact on open space in part because of the substantial amount of public open space available in the surrounding area, particularly if rooftop open space is provided on the new building. Upon completion, this alternative would not include any changes to Theodore Roosevelt Park outside of the Museum footprint; open space impacted by construction logistics would be restored.

SHADOWS

At 125 feet above grade (not including mechanical equipment), this alternative would be taller than the 105-foot tall proposed project. Compared to the proposed project, this alternative would cast fewer shadows on the west side of Theodore Roosevelt Park and more shadows on the northern side of Theodore Roosevelt Park, due to the relocation of the development site. The greater height of this alternative and its location atop Ross Terrace would result in new incremental shadows in areas of the Park not affected by the proposed project.

HISTORIC AND CULTURAL RESOURCES

Alternative 7 would avoid the demolition of Building 15, a contributing building to the S/NR-listed Museum complex. However, it would potentially adversely affect the historic character of the Museum by developing a new building that is out of scale with the Museum's historic complex on both the western side and the interior north section, and by constructing a four-story addition above Building 17, a historic building of five stories. While the 105-foot tall proposed project (not including mechanical equipment) has been designed to relate to the Museum's west side context in scale and massing, with deferential at-grade setbacks to ensure the prominence of historical Museum buildings, this alternative (125 feet tall above grade) would be substantially taller than Building 17 (100 feet tall). In addition, under this alternative there would be substantially more building bulk adjacent to the north side of Theodore Roosevelt Park and in close proximity to the Rose Center for Earth and Space. This alternative was reviewed by OPRHP, which determined that it would not be prudent and feasible and would not meet the goals and objectives of the proposed project.

URBAN DESIGN AND VISUAL RESOURCES

Although the architectural design elements of this alternative have not been determined, compared to the proposed project Alternative 7 would not provide a new entrance facing Columbus Avenue. Instead, it would result in substantial building mass in close proximity to the Rose Center, which would adversely affect the context of that building. The Rose Center only has two exposed faces; this alternative would be set back from its west face and would reduce the sense of expansiveness and connectivity to the outdoors and sky that the Rose Center currently provides. At 125 feet above grade (not including mechanical equipment), this alternative would be taller than the 105-foot tall proposed project, and have a different location, primarily over the Ross Terrace and Building 17. As noted above, since this alternative would be taller than surrounding existing buildings, it would be less contextual than the proposed project.

NATURAL RESOURCES

Since this alternative would not include new below grade service and delivery areas, it would not result in the proposed project's removal of trees and open space on the west side of Theodore Roosevelt Park. However, this alternative would result in the removal of 30,745 square feet of open space on the Ross Terrace (which includes a mix of paved and grassy areas) and up to 25 trees, as well as additional tree removal in other areas of the Park to accommodate construction logistics.

HAZARDOUS MATERIALS

This alternative would result in similar effects related to hazardous materials as the proposed project. Under both scenarios, there are no known significant health risks associated with the project site or the remainder of the Museum and appropriate measures would be taken to handle any hazardous materials and avoid the potential for any significant hazardous materials impacts.

TRANSPORTATION

Alternative 7 would include substantially the same programming as the proposed project, although it would include a smaller central exhibition hall. Therefore, this alternative would be expected to result in a similar increase in attendance and utilization. Compared to the proposed project, fewer visitors would access the Museum from Columbus Avenue and more visitors would be expected to use the main entrance on Central Park West, and the existing Rose Center entrance. Overall, the transportation impacts would be expected to be largely the same as the proposed project.

NEIGHBORHOOD CHARACTER

Compared to the proposed project, the Alternative 7 would change neighborhood character by relocating the development site from the west side of the Museum facing Columbus Avenue to the north side of the Museum facing West 81st Street. While this alternative would avoid the loss of open space and trees in Theodore Roosevelt Park, it would adversely affect neighborhood character by displacing 30,745 square feet of public open space on the Ross Terrace. While some of the eliminated public open space could be replaced with new rooftop open space(s), any replacement space(s) would be smaller and less accessible than the large expanse of the Ross Terrace that would be removed.

GREENHOUSE GAS EMISSIONS

Alternative 7 would have an expanded exterior envelope compared to the proposed project, reducing energy efficiency and self-shading. As a result, other steps or elements that contribute credits would be needed to achieve the LEED certification level planned for the proposed project. For example, the use of geothermal energy would contribute credits, but has been ruled out for the proposed project due to limited benefits, extended (more than 30 year) payback period, and the expected impact on the Park.

CONSTRUCTION

This alternative would result in less disruption associated with construction activities to the Columbus Avenue side of Theodore Roosevelt Park, but would result in greater disruption to the north side of Theodore Roosevelt Park towards West 81st Street. Access to the construction area would need to be provided from either Columbus Avenue near West 81st Street or West 81st Street. As a result, certain features of the park, including the dog run, would need to be temporarily closed to accommodate construction logistics. Construction activities would also be different, since there would not be any new below-grade disturbance with this alternative. Instead, there would be greater disturbance to the Museum, since there would be development atop Ross Terrace and adjacent to numerous Museum buildings. Since the parking garage and Ross Terrace building was not designed to accommodate the weight of this alternative, the garage would need to be temporarily closed during construction for approximately 12 to 14 months to allow new footings and support beams to be constructed. The Museum's weekday school bus loading, unloading and layover operations, and daily auto parking function, would have to be temporarily relocated, creating operational disruptions to the Museum's educational program as well as potential additional traffic impacts compared to the proposed project. This alternative could potentially result in the removal of up to 25 trees, as well as additional tree removal in other areas of the Park to accommodate construction logistics. The proposed project and this alternative are expected to result in significant adverse construction traffic impacts at one study area intersection during peak construction, and possibly other intersections due to the temporary closing of the garage and relocation of its functions.

OTHER TECHNICAL AREAS

This alternative would result in similar effects related to air quality, greenhouse gas emissions, public health, and possibly noise as the proposed project. Significant adverse impacts are not anticipated for any of these environmental areas.

CONCLUSION

Alternative 7 would not meet the project objectives. This alternative would not address key circulation deficiencies within the Museum, including connection improvements to Building 8 and the library, and dead end pathways. Instead, this alternative would repeat some of the Museum's current circulation issues by constructing a long, narrow wing with upper floors that would not connect to any existing Museum buildings, resulting in new dead ends that limit circulation.

While this alternative would include a central exhibition hall, it would be smaller than with the proposed project and would not achieve some of the project's objectives. With the proposed project, the central exhibition hall would open onto Theodore Roosevelt Park and create an important circulation route through the Museum to Central Park West, orienting visitors and

inviting the public to experience the Museum. Compared to the proposed project, this alternative would not achieve that function, and would support physical and visual links between Museum spaces to a lesser extent. This alternative would also not provide the Museum with an upgraded and modernized service and delivery area.

While Alternative 7 would avoid the loss of open space and trees in Theodore Roosevelt Park, it would displace 30,745 square feet of public open space on the Ross Terrace and could replace some of it with new rooftop open space(s). Certain features of the park, including the dog run, would need to be temporarily closed to accommodate construction logistics. The height of this alternative and its location atop Ross Terrace would result in new incremental shadows in additional areas of the Park not affected by the proposed project's shadows. Compared to the proposed project, this alternative would not create a new entrance on the Columbus Avenue side of the Museum. Instead, it would result in substantial building mass in close proximity to the Rose Center, which would adversely affect the context of that building. While Alternative 7 would avoid the demolition of Building 15, it would potentially adversely affect the historic character of the Museum due to the large size and massing of the Alternative 7 building and inappropriate overbuild of Building 17.

While Alternative 7 would avoid using parkland in Theodore Roosevelt Park, it would result in a loss of publicly accessible open space on the Ross Terrace; would not include important components of the proposed project with respect to programming and circulation; and would adversely affect the historic character of the Museum. Compared to the proposed project, construction of this alternative would result in greater disturbance to the Museum and the neighborhood, due to temporary disruption of the north side of Theodore Roosevelt Park (including the dog run), the Museum parking garage, and other Museum operations. Similar to the proposed project, Alternative 7 would result in significant adverse impacts related to transportation, historic resources, and construction-period traffic~~, and possibly noise~~. This alternative has the potential to result in construction-related noise impacts and additional construction-related traffic impacts due to the temporary closing of the garage and relocation of its functions, including school bus operations.

J. ALTERNATIVE 8: OFF-SITE ALTERNATIVE

DESCRIPTION

Considering the objectives and capabilities of the Museum, Alternative 8 (Off-Site Alternative) evaluates the feasibility and reasonableness of developing the Gilder Center at an off-site location. Under the Off-Site Alternative, the project site in Theodore Roosevelt Park would remain unchanged compared to existing conditions and some of the proposed project elements, as well as school and camp group service facilities, necessary building and program operations space, and a small amount of administrative space, would instead be located at an undetermined site within New York City. Given the program needs and access required, this relocation site would likely need to accommodate at least 200,000 gsf and provide for good public transportation access, safe school and coach bus unloading and loading facilities, taxi and auto drop-off and pick-up space, and a loading and service area. This alternative would avoid the significant adverse impacts identified for the proposed project in this EIS related to historic resources and transportation in the study area surrounding the Museum. The Off-Site Alternative would also avoid the loss of open space and removal of trees in Theodore Roosevelt Park. However, due to its off-site location, this alternative would not achieve most of the proposed project's objectives.

Since the Museum does not own or have rights to an off-site property, the Museum would need to locate and purchase an appropriate new site. According to the *CEQR Technical Manual*, sites which a private applicant like the Museum does not own or does not have a right to use are not required to be considered as alternative sites, rendering this alternative not applicable on that basis alone under SEQRA and CEQR.

ALTERNATIVE COMPARED WITH THE PROPOSED PROJECT

The Museum does not own nor does it have rights to an off-site property for this facility. If such an off-site property could be found, depending on its location and characteristics, the project's relocation to such a property could result in new significant adverse impacts. Since a project location and building plan have not been determined for this conceptual alternative, a specific assessment of its effects on the categories of environmental analysis considered in this EIS cannot be provided. Depending on the relocation site, impacts similar to those of the Gilder Center could occur and the associated visitation would place demands on local transportation services that could result in significant adverse impacts. In addition, for almost any alternative development site, construction of this character would be disruptive to nearby uses and residences. An alternative site is unlikely to have equivalent transit access and consequently could have substantially higher auto usage. This alternative was reviewed by OPRHP, which determined that it would not be prudent and feasible and would not meet the goals and objectives of the proposed project.

CONCLUSION

Alternative 8 would not meet the project objectives. This alternative would not address the key circulation deficiencies within the Museum, including connection improvements to Building 8 and the library, and dead end pathways. While the proposed project would result in connections with clear sightlines that would improve visitor flow and circulation, under this alternative Museum circulation would continue to be confusing and congested, resulting in crowding and delay. Overcrowding reduces visitor access to programs and exhibits, undercutting the Museum's ability to fulfill its mission of disseminating scientific knowledge.

By locating some exhibition, collections, and classroom space off-site, this alternative would create a small new museum of limited scope, without addressing any of the existing on-site deficiencies. The off-site location would not offer access to the bulk of the Museum's collections, library materials, exhibition spaces, and other on-site scientific resources for students, teachers, families, and other visitors. This is completely contrary to the project objective of creating adjacencies among classrooms, exhibits, collections, and library resources. Operational services would not be upgraded and the Museum's service and delivery yard would remain undersized and outdated. Further, there would be no improvements to the Museum's on-site visitor services or Columbus Avenue entrance.

The proposed project has been designed to enable more visitors to experience an aspect of the Museum's active, discovery-based scientific study and instruction. Unlike the proposed project, the Off-Site Alternative would not integrate the behind-the-scenes work of the Museum with the visitor experience, connect scientific facilities and collections to innovative exhibition and learning spaces, or co-locate collection storage spaces and the research library with immersive galleries and interactive education spaces. Overall, as compared to the proposed project, this alternative does not meet the project's goals and objectives and would not necessarily minimize impacts, but instead relocate them. ✷