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SECURITY *with Dignity*

Washington, D.C., has been known for its public spaces, its openness, and the relative absence of barriers—either physical or psychological—between its citizens and their public servants and institutions. Today, however, guard huts and planters block the street in front of the White House, and Jersey barriers surround the Washington Monument and the Lincoln Memorial. Such fortifications first became part of the Washington landscape following the Oklahoma City bombing in 1995, and since September 11, 2001, their use and visual dominance has escalated to a disturbing degree. While providing a basic line of security by keeping bomb-laden vehicles from jumping curbs and crashing into buildings, they also evoke insecurity, weakened confidence in the public environment, and, perhaps, even fear and retrenchment.

The National Capital Planning Commission (NCPC), the federal government's central planning agency for Washington and the surrounding region, began considering the effects of security measures on the public realm in March 2001, and this past October released the National Capital Urban Design and Security

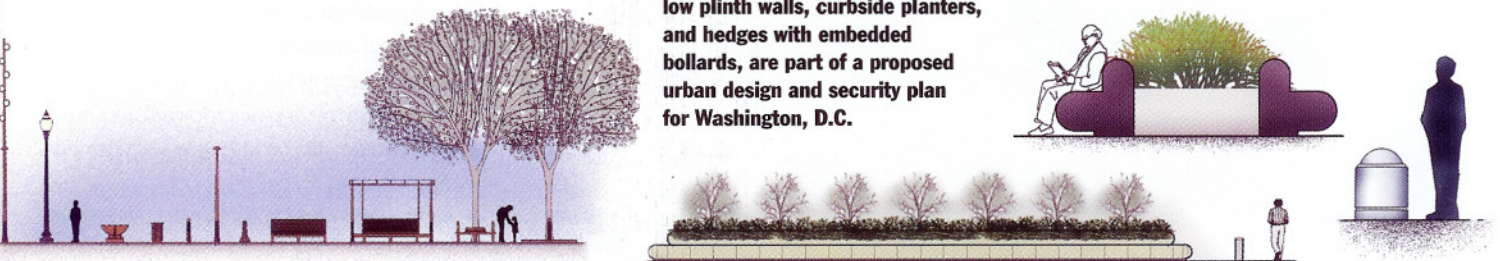
A new security plan seeks to integrate perimeter security into the historic urban fabric of Washington's monument core.

Plan. The commission's initial focus was assessing the long-term necessity of closing Pennsylvania Avenue to automobile traffic in front of the White House, a controversial action in May 1995 that has been widely criticized by city officials and members of Congress. However, soon after the commission's security task force began its investigation, and reinforced by the events of 9/11, it realized that Pennsylvania Avenue was part of a much larger security design problem and expanded its focus to encompass the entire monument core of downtown Washington.

Consultation with security and terrorism experts, local and federal government agencies, planning and design professionals, and the local civic and business communities reinforced the idea that a more thoughtful approach to security design also could yield broader urban design benefits. Virtually any urban street contains an array of features—lights, benches, trees and plants, refuse containers, bus shelters, signs—that can be adapted to enhance curbside security while not looking like barriers. Incorporating these street features into a security plan would reduce the need for a second row of curbside security elements.

A variety of new security solutions, such as hardened street furniture, low plinth walls, curbside planters, and hedges with embedded bollards, are part of a proposed urban design and security plan for Washington, D.C.

NATIONAL CAPITAL PLANNING COMMISSION



The urban design and security plan, which attempts to integrate building perimeter security seamlessly into the historic urban fabric of Washington's monument core, is the product of unprecedented collaboration among local and federal agencies working to improve security around monuments and public buildings that would be likely terrorist targets, while still maintaining a welcoming public realm. "The partnerships we have developed on this project are extraordinary," comments John V. Cogbill III, NCPC chairman. "It has been very gratifying to see the security authorities, the preservation community, federal agencies, and District [of Columbia] officials coming together to make the difficult decisions."

The new plan is built upon an urban design framework that defines prominent districts and streets within Washington's core that share architectural, symbolic, and functional characteristics, such as the national Mall and Federal Triangle. Stating that "one size must not fit all" in security design, it outlines design solutions tailored to those particular design qualities of each district and, in some cases, provides much needed enhancements to streetscape and pedestrian environments.

A variety of security design solutions are presented, such as "hardened" street furniture, walls made up of planters, security bollards embedded within and screened by dense plantings, and sidewalk planters designed to meet security needs. The result will be a less intrusive, more hospitable streetscape that provides security while not giving the impression of a fortified street. Also supported is the proposed Downtown Circulator, a transit system planned for Washington to supplement the existing system by providing low-cost, hop-on/hop-off service facilitating short, quick trips around town. The idea also is to have workers, residents, and visitors leave their cars at home or at hotels and get around without needing on-street parking, thus helping to ease downtown traffic congestion.

The streetscape along Pennsylvania Avenue between the Capitol and the White House was reconceived in the 1970s in one of the first acts of the Pennsylvania Avenue Development Corporation. Today, the benefits of the mature trees and specially designed street furniture have been compromised by the makeshift placement of large planters and other supposedly temporary security devices. The urban design and security plan calls for preservation of the spirit of the 1970s initiative through the design of custom-made, security-grade street furniture with complementary aesthetic features, and the addition of new components where necessary.

On the block of Pennsylvania between Ninth and Tenth streets, N.W., which contains the U.S. Department of Justice and the FBI buildings, the plan proposes hardened versions of street furniture, including new benches, drinking fountains, trash containers, as well as planters and bus shelters. The hardened furniture would be installed only in front of buildings that must be secure; to maintain the continuity of the street experience, unhardened versions of the same furniture would be installed in front of buildings that do not require special security.

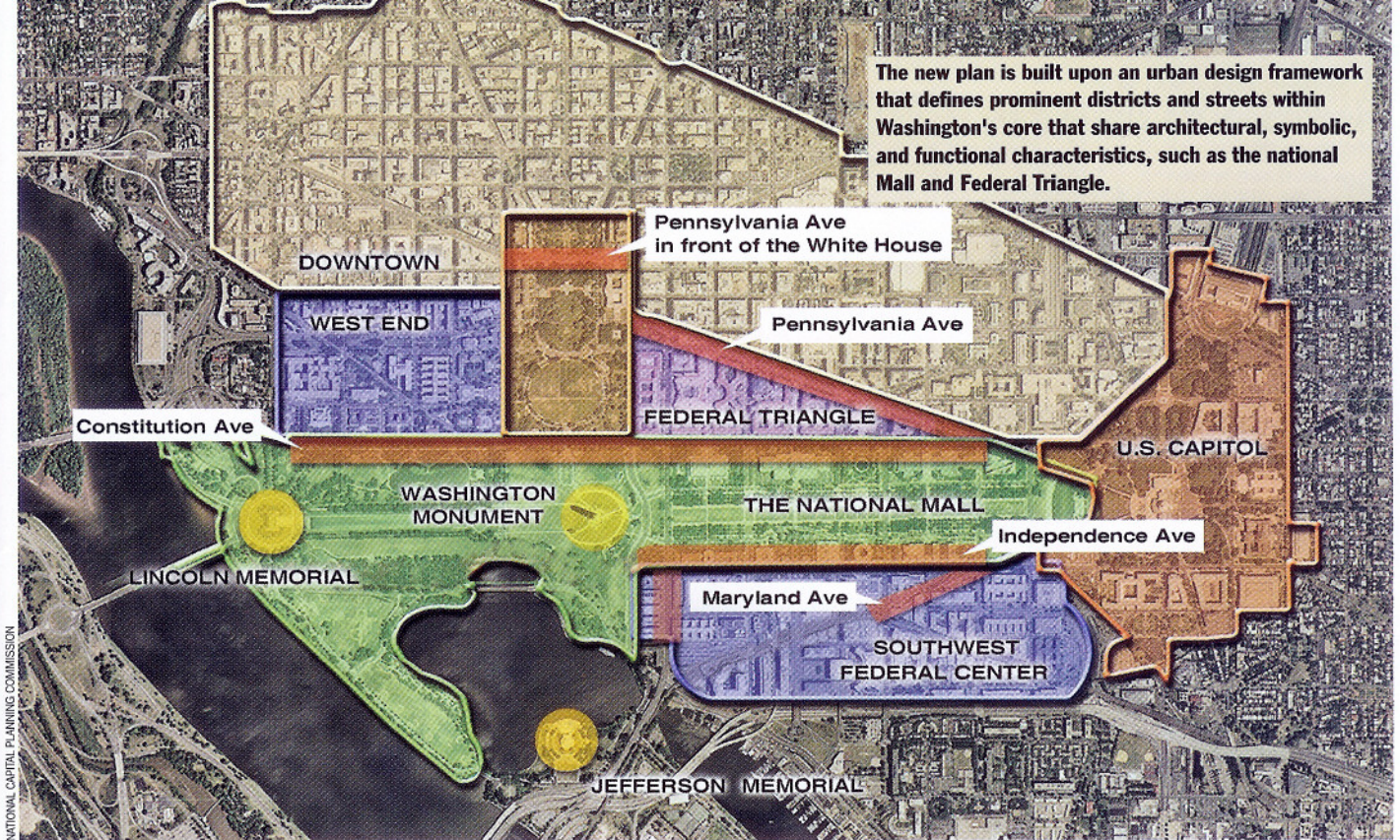
The proposed security design for Federal Triangle, an enclave of federal buildings bounded by Constitution and Pennsylvania avenues and 15th Street, strives to reinforce the historic layout and character of the two ceremonial avenues and the north-south grid streets. Designs for the north-south streetscapes incorporate a fence and a bollard wall located on the curbside of the existing tree planting beds. The fountain in front of the National Archives on Pennsylvania Avenue would be redesigned to provide security, as would the fountain at the intersection of 13th Street and Pennsylvania Avenue. Where they exist, plinth and retaining walls would be incorporated as part of the security system and modified only to make them appropriate heights. The 12th Street hemicycle and the 14th Street plaza in front of the Ronald Reagan Building and International Trade Center would receive custom-designed security solutions.

Washington's downtown is one area where federal facilities are close to private buildings. Because only a few of the federal buildings are likely to require perimeter security, security components are expected to be needed only on some blocks or portions of these blocks, making it important for the streetscape to maintain a unified appearance around both public and private properties, and for the design to conform to the existing standards established by the city and the downtown business improvement district. The broader diagonal avenues would incorporate new elements such as a wall of tree enclosure fences at the back of the planting strips and next to the sidewalks. In some instances, fence segments would be interspersed with bollards.

Perimeter security improvements for the Washington Monument include existing walkways around the monument reconfigured as a series of partial ovals incorporating retaining walls.



The new plan is built upon an urban design framework that defines prominent districts and streets within Washington's core that share architectural, symbolic, and functional characteristics, such as the national Mall and Federal Triangle.



lards and hardened benches. Security along the grid streets, with their narrower sidewalks, would include hardened light poles, benches, bicycle racks, and tree fence enclosures.

Along with Pennsylvania Avenue, the most significant ceremonial streets in Washington's monument core are Constitution, Independence, and Maryland avenues. Constitution and Independence frame the national Mall and are key arteries for crosstown traffic. Landscaped plinth walls and raised planting terraces, already part of the streetscape along portions of these two avenues, can be extended to improve security and to unify the appearance of both thoroughfares. While the height of the plinth walls may vary, they are expected to be 30 inches high in most locations. Stone bollards and benches are called for at building entrances and at intersections. Guardhouses in this area would be custom-designed and compatible with either the associated building architecture or with the surrounding landscape setting. Maryland Avenue, currently in a state of neglect, is designated for a new streetscape design. Bollards would be located between a double allée of street trees, while new landscaping and plantings in the tree beds would be added to soften the appearance and to help conceal the protective bollards.

Three of the most widely recognized icons in the capital—the Washington Monument, the Lincoln Memorial, and the Jefferson Memorial—have special security needs. All are surrounded by expanses of lawn that provide ample space for low stone walls, planters, and subtle grade changes that can provide greater security while retaining the historic nature of their settings. At the Lincoln Memorial, a low wall would enclose the mound on which the memorial sits. Retractable bollards would permit limited access to the circular roadway, and benches and bollards would allow pedestrian movement among the memorials and on the national Mall. At the Jef-

erson Memorial, security needs require that the safety perimeter be located along East Basin Drive at the eastern and southern edges of the memorial grounds. This perimeter would employ low retaining walls, bollards, and site grading. At the Washington Monument, the National Park Service has proposed a security concept in which existing walkways would be reconfigured as a series of partial ovals extending east and west from the monument plaza. The sloped walkways would incorporate visually unobtrusive retaining walls to serve as vehicle barriers.

The area west of the White House was originally planned, although never fully executed, as an enclave of federal buildings. This district contains several monumental and historic public buildings, such as ones housing the U.S. Interior and State departments, along with other institutional structures, such as the U.S. Federal Reserve and the American Red Cross buildings. The security designs proposed for this area, intended to reinforce its green, campuslike setting, include low retaining walls and decorative fences composed of a variety of elements, such as granite pillars, seats, and benches.

Another area, Federal Center Southwest, created in the 1960s by federal and private office development, lacks much of the ambience, aesthetic coherence, and urban design integrity of other parts of Washington's core. Many of the precinct's large modern buildings are set back from the street on plazas, raised roadways, and parking ramps that serve to discourage pedestrian use. Implementation of design-enhanced security measures in this area can help to bring design coherence and pedestrian amenities to the area.

Planning for security in this area of the city is complicated by lines of railroad tracks that cut through it, the high-level security requirements and the narrow setbacks of many of the buildings, and the traffic and parking limitations. Along the Tenth Street prom-

Designing for a More Secure America

For years, Americans have watched from afar as terrorists have struck across the globe. People in other regions of the world—from the Middle East to Europe, from Asia to South America—have learned to live their lives with the knowledge that at any moment they could become victims of terrorists just because they are in the wrong place at the wrong time. September 11, 2001, showed the world that America is now on the front lines in the battle with international terrorists.

When it comes to the nation's development infrastructure—private and public buildings, airports, roads, and bridges—the design community has a significant role to play, yet the task is enormous. As a nation of 280 million people, the United States covers more than 6 million square miles of land with millions of buildings large and small, and thousands of miles of roadways and bridges. Buildings and industrial complexes make attractive targets for terrorists because they offer access to concentrated numbers of people and are vulnerable to attack. Design can play an important part in protecting buildings and their occupants from these threats.

The first line of defense is outside structures. As witnessed in Oklahoma, one does not have to gain entrance to a building to destroy it. Designers should start by limiting access to the general vicinity of buildings whenever possible. Setting buildings away from roadways and parking areas and using a serpentine alignment of approach roads can give security personnel sufficient time to identify attackers and react, eliminating the element of surprise. Distance from roadways and parking areas also can minimize the damage a car

or truck bomb can cause to a building, as can laminated window glazing and strengthened structural building frames. Obstacles such as bollards and pop-up barriers have proven effective in hindering access by vehicles from roadways and pedestrian areas, as have passive tools such as concrete Jersey barriers. In addition, strategic placement of landscape elements, such as trees, shrubs, and rock outcroppings, as well as steep terrain grades can help thwart attackers trying to bypass roadway barriers to attack buildings. Another important passive security feature is enhanced external lighting: bright, all-night lighting can be used to illuminate areas where people can hide, including within the recesses of a building's facade and along landscaped areas that surround many buildings.

Though several high-tech tools such as motion detection equipment and gamma ray vehicle scanners are now being deployed at government and defense installations, their use in private or nonsecure government developments probably is unnecessary. One tool useful in buildings of all types is closed circuit television (CCTV), which can monitor activity both outside and within a building. However, it is important that CCTV systems be constantly monitored: unmonitored systems can undermine security by providing a false sense of security to building visitors, employees, or residents. Technologies that restrict access to a building or complex include badge and card readers that automatically admit only authorized individuals. Additionally, automatic vehicle identification (AVI) and license plate recognition systems can significantly enhance security by monitoring and limiting vehicle access to a complex or a parking area.

Bright lighting should be added to any interior areas where intruders can hide, such as stairwells, lobbies, and storage areas, and sufficient lighting should be added to glass-enclosed areas to improve visibility from outside, thereby making it easier for security per-

sonnel and others to detect nighttime intruders. Video monitors and intercoms at a building's entrance can allow security personnel to track people as they try to gain entrance to a building. Also, computer-based video cameras that transmit images via the Internet can give security personnel a continuous view of a building and its perimeter.

Transportation infrastructure and other public facilities also face significant potential risks. For example, attacks on roads, bridges, or airports could have a major impact on the country, as could a strike on a nuclear power plant or a fuel storage facility. Security tools available to help improve the effectiveness of surveillance at such facilities include monitored security cameras. For air travel, advanced baggage and passenger scanning equipment and AVI technology are playing an important role in improving airport security.

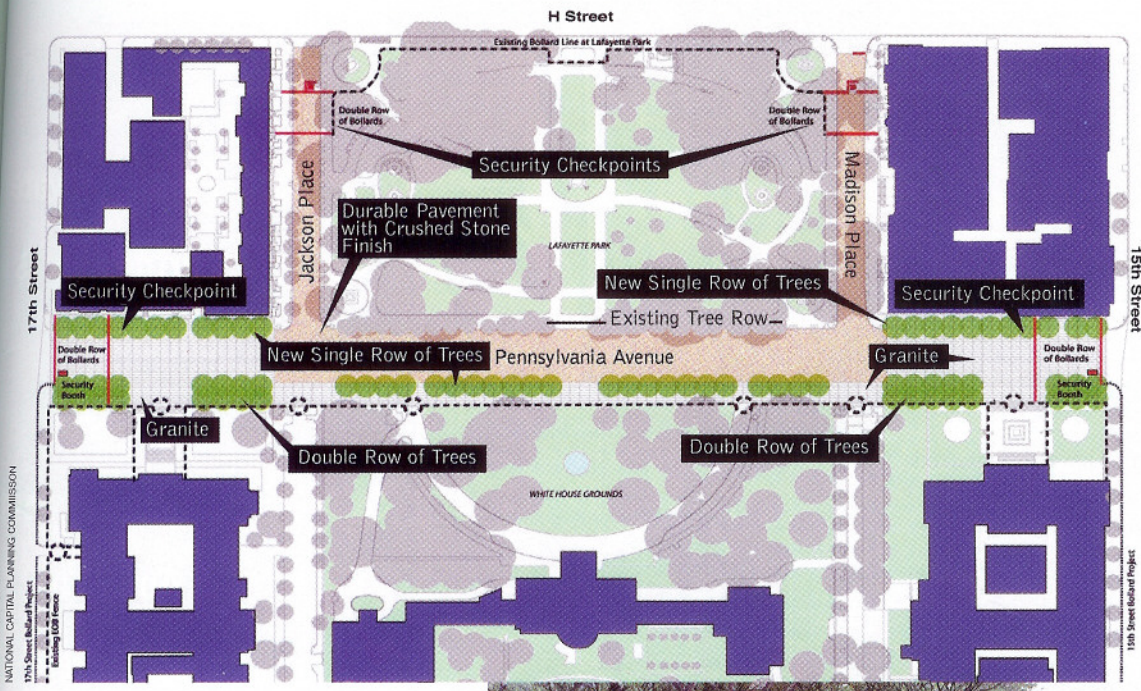
When considering security measures, development owners and their designers should assess the risk of attack and weigh it against the cost of implementing particular security measures. Developments in certain cities, such as New York City, Washington, D.C., and Los Angeles, are likely to face greater risk than those in smaller cities, and certain types of buildings, such as government buildings, water supply facilities, and power plants, probably are more likely targets.

America's brief history with terrorism—both domestic and international—has demonstrated that terrorism can occur in unlikely places and be carried out by unexpected individuals. Ultimately, building owners must work with their designers to fully gauge the individual risk factors facing their developments, and then create security plans that address those factors within a reasonable budgetary framework.—**Michael Roache**, senior vice president, Fay, Spofford, and Thorndike, an engineering firm based in Burlington, Massachusetts

enade, the proposed design concept would use both large round and linear seat planters on both sides of the street to create a pedestrian environment. As part of the plan, existing drop-off or pull-out lanes would be removed and replaced with sidewalk so that these planters would maintain a consistent line at the edge of the street. Because Tenth Street is built on top of underground structures, large trees cannot be introduced; however, large shrubs, such as crape myrtle, could be used to provide some scale. The plan calls for a new green median strip along Tenth Street that might include a future site for a memorial. While the median is not necessary for security, the idea demonstrates how ancillary streetscape improvements undertaken as part of the larger security design program can enhance the look of a city's public realm. Variations on the planter streetscape could be applied to all the grid streets within the Federal Center Southwest area and where custom-designed seat planters and benches have been recommended as the primary security components. Where parking lanes must be removed to accommodate these new components, a program would be initiated to identify a central parking facility.

The White House is one of the most important, symbolically charged, and potentially vulnerable places in the country. The closure of Pennsylvania Avenue from 15th to 17th streets in 1995 had serious consequences, not least of which was the impact on downtown circulation patterns. Following the September 11, 2001, attacks, any hope that Pennsylvania Avenue would reopen to traffic any time soon was lost. In response, NCPD called for the street to be redesigned as a true pedestrian-oriented public space. A new design selected for the area in front of the White House relies primarily on ground treatment and tree planting to reinforce views and vistas, and calls for a subtle transformation of Pennsylvania Avenue that can be easily reversed should security needs change. The design uses familiar materials to create a space that follows a historic American tradition of mediating among the European formality of the L'Enfant Plan of 1791, the naturalism of Andrew Jackson Downing's Lafayette Park, and the informality of the White House grounds.

NCPD is working with Congress, the Administration, and the city of Washington to secure funding and implement the projects outlined in the urban design and security plan. The commission



The proposed security plan for the White House perimeter (left) includes new security checkpoints, rows of new trees, and new crushed-stone pavement for Pennsylvania Avenue. Replanting a tree row in place of the existing concrete bollards along Pennsylvania Avenue is also part of the plan (below). New trees would be planted along 15th and 17th streets on either side of the White House to help create a more welcoming public space, as well as to provide a more dignified view of the grounds.

has recommended that the U.S. Federal Highway Administration serve as the lead agency to oversee the design and construction involved in implementing the plan. To mitigate the traffic impacts of closing Pennsylvania Avenue, and the E Street closure following 9/11, the commission called for federal support in putting the new circulator transit system in service and is even considering constructing a tunnel under either Pennsylvania Avenue or E Street to replace the lost capacity of 48,000 vehicles, including 13 bus lines, that formerly used these streets. The commission has identified Pennsylvania Avenue in front of the White House as a priority for construction by the 2005 inaugural. Other priorities include Pennsylvania Avenue from the White House to the Capitol, Federal Triangle, and Constitution and Independence avenues.



While NCPC's urban design and security plan focuses by mandate on the security and streetscape needs of the nation's capital, it offers several lessons for other American cities:

- Many cities are hastily surrounding—or preparing to surround—their courthouses, city halls, and historic monuments with security components. Enhancing the surrounding environment should govern these efforts; endless lines of Jersey barriers look no more attractive outside of Washington, D.C., than they do in it.
- Security measures should be pursued in the context of district-wide urban design rather than on a building-by-building basis so that the results are better public streets, not just conspicuously fortified buildings.
- The palette of elements that can provide curbside security can be expanded creatively to avoid the monotony of using one kind of bollard or planter, which adds no grace, much less amenity, to the sidewalk.

Ultimately, it may be more cost efficient to combine curbside security and streetscape improvements rather than to do each independently or sequentially. It seems particularly inefficient, not to mention unattractive, to invest in elaborate streetscape features and then add a parallel—and redundant—line of security elements.

Today, Americans live with an awareness of how fragile public safety can be—how faith in the stability of the public realm can be shaken as security is breached or threatened. They want increased protection for themselves and for their cherished and most vulnerable institutions. Yet, one should not guard against terror, or the possibility of terror, at the expense of such longstanding American values as openness, accessibility, and comfort in the public domain. The need to enhance street and curbside security offers an opportunity to make streets more attractive, thus avoiding the need to convert them into fortified, unpleasant, visibly threatened environments that instead send a message of insecurity.

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