Chapter 3
The Site Security Design Process

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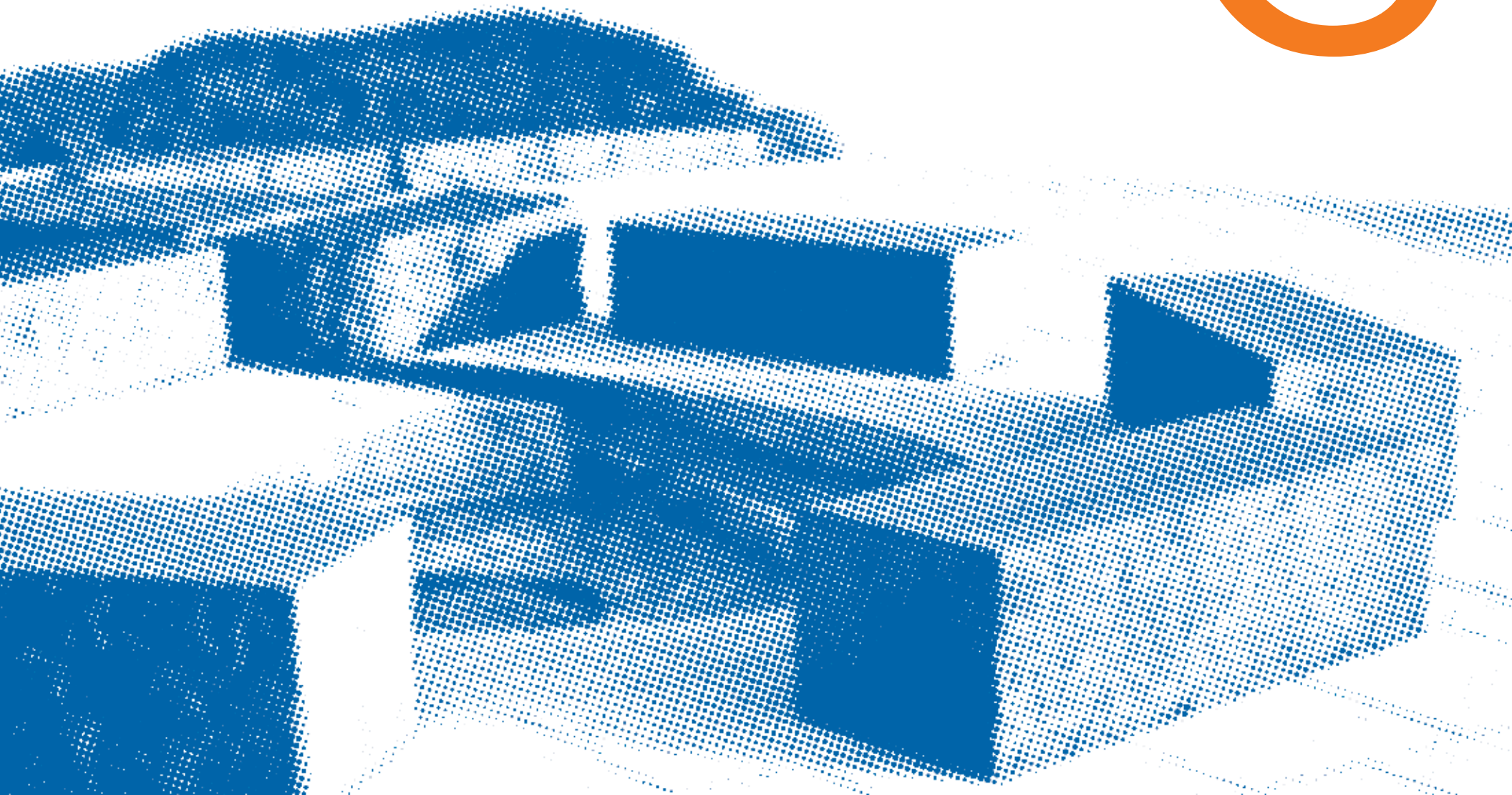

Chapter 3
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INTRODUCTION

Successful site security design is particularly process dependent because countermeasures can be resource intensive, controversial, or ancillary to a project's original purpose. A careful and calculated process ensures that security concerns receive early and informed consideration and are integrated throughout planning, design, and construction. Such a process puts the Project Team in a strong position to achieve effective risk reduction while meeting budget, schedule, and public space design objectives.

Previous chapters discussed the underlying principles that guide every security design project and the elements and tools available to the designer. This chapter describes how to apply these principles and tools. A hypothetical test case illustrates the recommended process throughout the chapter.

This test case, "Building Renovation/Urban Location: Single Building," involves typical issues and opportunities arising during the planned security renovation of a large mid-20th century era federal building, located on a compact downtown site, but the procedural steps addressing the conditions of this case are similar to any site security design project. Chapter 4 presents additional test cases of other federal building types.

The process discussion includes detailed descriptions of the unique nature of security decision-making, how security decisions fit into the capital funding process, the roles and responsibilities of Project Team members, and the principles that guide the entire site security design process.

Chapter 1 described the hallmarks that must form the foundation of a successful and well-balanced security project:

- **Strategic Reduction of Risk**
- **Comprehensive Site Design**
- **Collaborative Participation**
- **Long-Term Development Strategy**

At every stage of the process, team members are expected to consider identified risks, operational requirements, and local impacts, to balance safety with cost, aesthetics, public use, and accessibility. Although each person on the Project Team brings unique technical skills, perspectives, and interests to the table, everyone should understand each of the hallmarks and their role in achieving them.

Creative problem solving—and successful projects—are the result when Project Team members share the responsibility to achieve each and every hallmark: when the blast expert understands how his or her recommendations affect comprehensive site design strategies, when the designer understands how his or her scheme supports long-term development of the area, and when the community stakeholder understands how his or her actions can support risk reduction at the federal facility.

OVERVIEW OF THE SITE SECURITY DESIGN PROCESS

Successful site security design comprises eight phases, each an important step toward a design that exceeds the hallmarks of a great project. These phases are summarized below:

1. **Project Start** focuses on the roles and responsibilities of the Project Team, communication and information sharing, and the decision-making process. The team begins this stage with a sound understanding of the completed risk assessment and its outputs.

2. **Multidisciplinary Assessment** involves the Project Team using the *zone approach* to assess existing conditions on-site, including security vulnerabilities, context, and design opportunities.

3. **Site Concept Investigation** involves the Project Team developing, studying, and refining *multiple* alternative concepts for the entire site, in response to their findings from the Multidisciplinary Assessment. For large projects, the team may hold a peer review at this stage to help evaluate the alternatives.

4. **Site Concept Selection** (Conceptual Strategy Plan) entails the Project Team forming a *single* alternative for the entire site, which comprises the best elements from the Site Concept Investigation. The team may hold a peer review in order to help select the site concept.

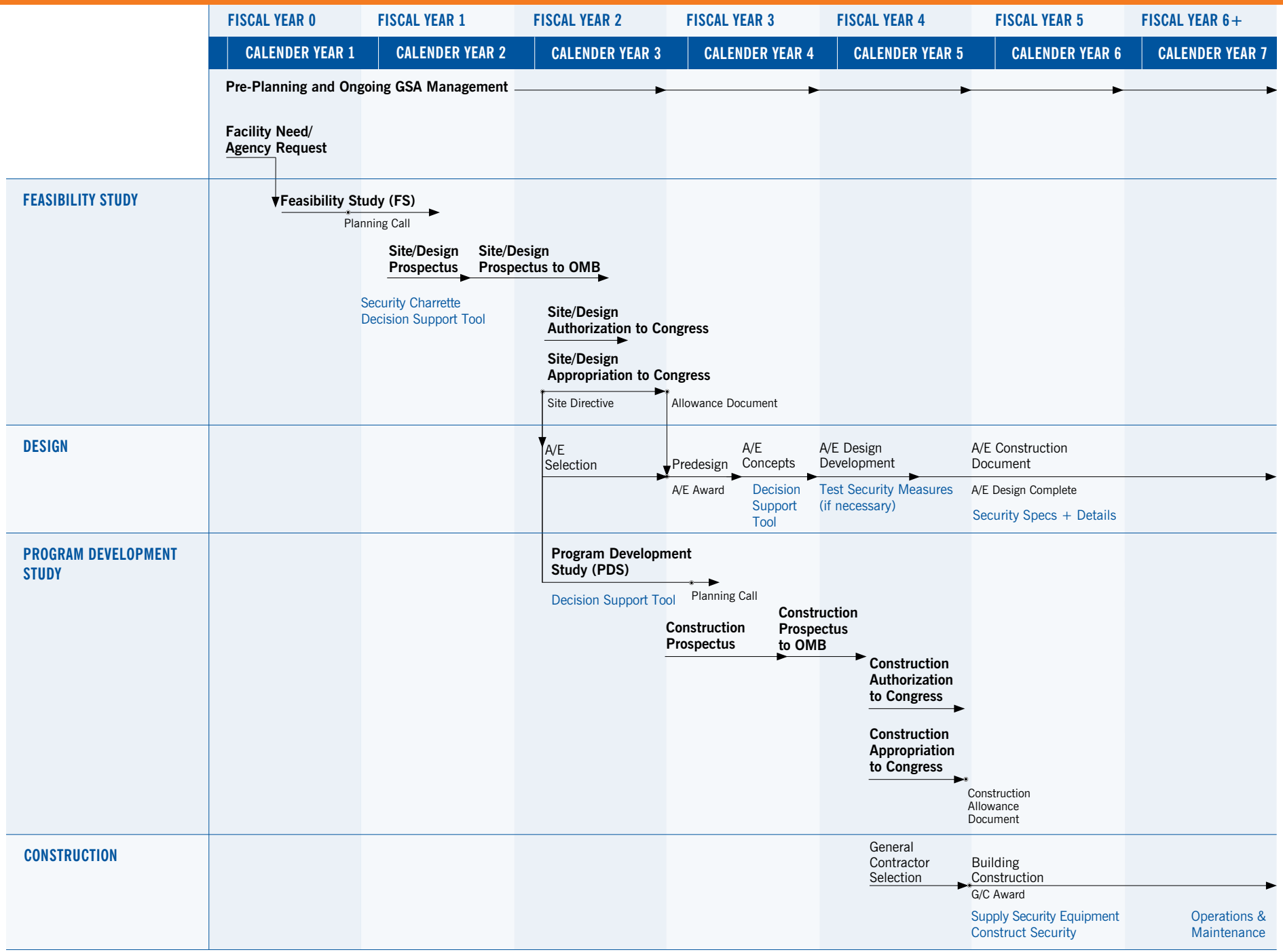
5. **Design Studies for Project Areas** involve the Project Team performing more *detailed design work* on key elements of the Site Concept, whether or not the entire Site Concept is implemented in a single project. The Design Studies begin the detailed design work that produces the final design of the immediate project.

6. **Final Concept Development** entails the Project Team developing a detailed Final Concept for the project that will proceed forward into construction. At this stage, as part of the Design Excellence process, the team makes its Final Concept presentation to the stakeholders.

7. **Final Design and Construction Documents** involve the Project Team developing Site Concepts and Design Studies, culminating in the completion of construction documents. The Project Team conducts any testing of security measures at this time. Team members review final drawings and specifications to ensure that agreed-upon security elements are properly represented in the Final Design.

8. **Project Completion and Operations** entails the Project Team remaining involved, as needed, to respond to unforeseen conditions during construction and to alter the project design if necessary. As the project is completed and put into use, building management and security operations must continually evaluate the function of the physical countermeasures over time and remain committed to the operational security measures that help to form the complete solution.

Exhibit 3.1: Capital Program Delivery Process



Phase 1
Project Start

It is important to lay a solid foundation for effective collaboration before the design starts. This step should begin with a sound understanding of team communication, roles and responsibilities, and the security decision process itself.

Key Points Within Phase 1: Project Start

- Coordinate site security design with the existing project development processes for large and small projects
- Consider previous building risk assessments and recommendations within the context of the present project and all objectives, including both security and design
- Carefully choose team members based on project needs and promote open channels of communication across specialties

SITE SECURITY AND PROJECT DEVELOPMENT

Developing site security within the context of GSA's project development process requires an understanding of the capital funding process, the design and construction process, and the security and risk assessment process (see Exhibit 3.1).

This chapter applies to large, Prospectus-level capital projects (i.e., projects that must be authorized by Congress), as well as smaller projects that are authorized and funded locally. Regardless of size, it is critical that all projects establish a comprehensive planning approach that views the site, the building, and the neighborhood as fundamental parts of an integrated fabric.

Large, Prospectus-Level Projects

Due to the federal funding process, large non-court projects work with design budgets, and court projects work with design and construction budgets, that the Project Team establishes in a **Feasibility Study** as early as two years before design begins. Construction budgets for non-court projects are later scoped as part of a **Program Development Study** (PDS), while courthouse construction budgets are sometimes adjusted through special studies. In either case, the construction budget typically is set two or more years before construction begins.

The budgeting stages can be considered as an expanding cycle. Each considers similar aspects, but the amount of analysis and specificity increases as the project gets closer to construction.

Smaller, Non-Prospectus-Level Projects

For smaller projects, on the other hand, GSA's Regional Offices can scope and fund a project rather quickly, as part of the annual renovation budgeting process. Unlike Prospectus-level projects, the construction budget for smaller projects is generally finalized after design is complete.

One distinction between large and small projects is the effort to ensure effective, multidisciplinary input into the design process. Because budget parameters for large projects are set years before design and construction begin, Project Teams must make special efforts to include in-house design and security expertise at the budgeting stage, even before designers are hired. At the other end of the spectrum, because small projects can be shaped and changed so quickly, the Project Team must be careful to ensure that multidisciplinary input occurs at the very beginning and is maintained throughout the project's development.

Site Security Design Process: Non-Prospectus-Level Project Timeline (9-15 months)

Predesign, Site Analysis, Risk Assessment

1. Project Start

2. Multidisciplinary Assessment
6–12 Weeks

Concept Design

3. Site Concept Investigation
4 Weeks

4. Site Concept Selection
4 Weeks

5. Design Studies for Project Areas
4 Weeks

6. Final Concept Development
4 Weeks

Design Development, Construction Documents, Construction

Site Security Design Process: Prospectus-Level Project Timeline (6-7 years)

Master Plan, Feasibility Study, Risk Assessment

1. Project Start

2. Multidisciplinary Assessment
6–12 Weeks

Timeline can extend 2–3 years
Note: Security Charrette during Feasibility Study phase.

"Project start" can occur anytime during the 2- to 3-year time frame, although important project scope, strategy, and budget decisions will be made during planning and pre-design activities.

Concept Design

3. Site Concept Investigation
4 Weeks

4. Site Concept Selection
4 Weeks

5. Design Studies for Project Areas
4 Weeks

Design Development, Construction Documents

6. Final Concept Development
8 Weeks

Design Development, Construction Documents, Construction

7. Final Design and Construction Documents
DD 9 Months, CDs 6 Months

8. Project Completion and Operations

Regardless of project size or budget, teams should consider aesthetic, functional, and security-related issues in the development process simultaneously. At a minimum, this comprehensiveness keeps security aligned with other project parameters.

There are quantitative reasons, as well. Security elements can represent a significant portion of a project's budget. Leveraging their functionality with other goals is necessary to maximize the investment in a facility. Additionally, funding realities may call for phased implementation of security and other improvements over several smaller projects, perhaps over several years. A flexible approach is necessary to ensure that each phase accomplishes some of the major goals outlined for a site. All changes to the site must be implemented as part of a larger vision that supports its desired use and overall attractiveness.

For detailed guidance on Prospectus-level project development and funding, see GSA's Project Planning Guide.

Designers on GSA projects must follow the standards dictated in GSA's Facility Standards for the Public Buildings Service (P-100). *This document is updated regularly and contains detailed design provisions that impact many aspects of site security projects.*

GSA DESIGN EXCELLENCE PROGRAM

Through the Design Excellence program, GSA produces quality public buildings that reflect the dignity of the federal government. Design Excellence emphasizes the following goals, which have a significant positive impact on the success of site security design projects, both large and small:

- Determine the best architect/engineer (A/E) selection for each project, maximize the potential for architectural design excellence, and provide peers of national renown to review project progression;
- Ensure compliance with project budget and schedule mandates and the analysis of critical building systems; and
- Support community development goals, effective sustainable design strategies, and current security standards.

The security and design needs of a project should be integrated into all Design Excellence activities, from selection of the A/E team through design charettes and peer reviews, to achieve the highest-quality outcome.

Past risk assessments are never the final word in a site security project. GSA seeks to accommodate all project goals, but retains the right to not implement a recommended countermeasure when doing so would have a significant adverse impact. Such decisions require close consultation with the Department of Homeland Security (DHS).

RISK ASSESSMENTS AND SECURITY RECOMMENDATIONS

DHS's Federal Protective Service is responsible for conducting risk assessments of all federal buildings on a regular basis. DHS conducts its risk assessment based upon the actual or perceived **threat** to the building (the events that must be defended against), the **vulnerability** of that building (the susceptibility to the threat), the **consequences** if an event should occur, and the **probability** of that event based upon a variety of factors. Then, with stakeholder input, DHS provides a final report with recommended countermeasures.

Depending on the nature of the project, the detailed security analysis process may include representatives from the U.S. Marshals Service (for courthouses) and specialized security contractors to conduct more technical studies. GSA representatives and members of the Building Security Committee are also included in the process.

Since such important and influential security assessments are made before design begins, without reference to any information about the project, Project Teams should revisit such assessments in this phase and plan to update them in Phase 2: Multidisciplinary Assessment.

In doing so, Project Teams should remember that GSA reserves the right to not implement a recommended mandatory measure as per the *GSA/DHS Memorandum of Agreement, June 2006.* Such a decision would be made only after consultation with DHS and only after written notification to DHS of the final decision. The final authority in this case rests with the appropriate GSA Assistant Regional Administrator (ARA) for the Public Buildings Service. Ideally, and far more often, DHS and GSA can reach consensus regarding the appropriate countermeasure as part of an effective design process.

GSA has created a number of tools to help Project Teams navigate the tradeoffs inherent in site security design projects. The GSA Security Charrette (described in detail on page 85) is a new tool created to support the multidisciplinary approach envisioned in the ISC criteria. Recommended for initial use during the Feasibility Study, it can also culminate the Multidisciplinary Assessment phase. The ISC Implementation Checklist, the Decision Support Tool for

GSA Security Analysis Tools

GSA and its partner agencies have developed many tools and techniques to support better security for GSA buildings, as well as the expertise to apply these tools to GSA projects.

The following tools are available through GSA's Office of the Chief Architect to those involved with appropriate projects. The use of these tools requires the input of security consultants, including representatives from DHS's Federal Protective Service (FPS) and blast consultants.

ISC Security Charrette Guide	The ISC Security Charrette Guide is intended to assist GSA Project Managers and the Building Security Committee in planning and conducting a Security Charrette. It is intended to be of greatest assistance for the Feasibility Study phase, but is useful throughout the project development process.
ISC Security Design Criteria Implementation Checklist	This checklist assists GSA Project Managers in the implementation of the Interagency Security Committee (ISC) Security Design Criteria during the project planning and design phases of all new U.S. courthouses, new federal office buildings, and major modernization projects.
Decision Support Tool for the ISC Security Design Criteria (DST-ISC)	**DST-ISC** is a GSA computer program designed to aid decision-makers in the application of the ISC Security Design Criteria. The program contains questions on target attractiveness, collateral damage, and impact of loss, which it uses to determine the required Level of Protection of a facility. The **DST-ISC** encourages judgment calls and a strategic approach to risk reduction, including acceptance of some risk in light of tradeoffs. It is important to note that the **DST-ISC** does not replace or supersede the DHS-produced risk assessment, but is a tool by which GSA decision-makers can evaluate countermeasures.
Computer Modeling of Hazards and Impacts	GSA and its consultants employ a variety of proprietary computer programs to assist in security assessments and countermeasure analysis. Two of the most prominent for GSA projects are **WINGARD** (**WIN**dow **G**lazing **A**nalysis **R**esponse & **D**esign) and **STANDGARD** (**STAND**ard **G**SA **A**ssessment **R**eporter & **D**atabase), which determine potential hazards from explosions and assess vulnerability.

the ISC Security Design Criteria (DST-ISC), and computer modeling tools are also available to support the process. The GSA Project Manager should become familiar with these tools and endorse their use by the Project Team.

Though sensitive information is a reality in site security projects, it should never pose a barrier to true collaboration. Most information designated "For Official Use Only" can be shared with project stakeholders. Indeed, such cooperation is essential where projects will significantly impact their surroundings.

The ISC Security Design Criteria Implementation Checklist (found in Table 2, Section 401000-A/E Selection Process of the ISC Security Design Criteria) is an excellent resource when developing a scope of work and selecting an A/E consultant. This tool is available from the Office of the Chief Architect.

COMMUNICATION AND INFORMATION SHARING

As asserted throughout this *Guide*, a collaborative process is fundamental to good decision-making. Of course, security experts, designers, and other stakeholders cannot provide meaningful input without comprehensive information sharing. Due to the sensitive nature of security assessments, however, this does not always happen.

While it may be inappropriate to share some sensitive security-related data with all parties, this should never get in the way of true collaboration. Information that is designated "Law Enforcement Sensitive," for example, would be available only to those with the proper clearances. But on most federal projects, the information sufficient to weigh various alternatives would be designated "For Official Use Only (FOUO)." This information should be available to all of those involved in project decisions, including tenant agencies, consultants, and local officials.

In fact, the responsibility to share information with outside stakeholders increases where the envisioned countermeasures would have significant impacts on the surrounding neighborhood. For example, it is crucial to include outside stakeholders in discussions about setback distances, road closures, site amenities, and perimeter security. In these cases, sensitive building engineering studies or information about specific threats may be withheld, but the stakeholders must have enough information to understand the vulnerability that the team is addressing and the recommended countermeasures.

The GSA Project Manager must ensure that sensitive information is not released inappropriately, while supporting meaningful collaboration with effective information. This is necessary both to make good decisions and to gain buy-in on decisions that may be controversial.

TEAM ASSEMBLY AND RESPONSIBILITIES

Selecting the right team members and consultants based on a project's scope of work and particular characteristics is key to a successful project. This requires some homework. Although the design community has focused attention on security for several years, there remains a relatively limited number of completed projects that illustrate best practices. As a result, most firms do not have the background needed to lead successful, well-balanced security projects. Project leaders must be selective to ensure that the chosen consultants possess the right expertise.

As shown in Project Start: Team Roles and Responsibilities, each team member brings a focused area of expertise to the project and accepts the corresponding responsibilities. Beyond the technical skills that each party contributes to the process, however, it is their participation in the rigorous, deliberative, design process *with each other* that yields the greatest value.

In order to deliver successful, holistic projects, each team member should share a sense of responsibility to meet each and every goal for the project. For example, blast experts should seek to provide a flexible range of alternatives that can support various site design concepts and daily use of the site. Designers should develop schemes that support a long-term vision for the site, beyond their immediate project. And local stakeholders who are responsible for neighborhood development should accept the need to reduce risk at the federal facility so that they can offer supportive solutions.

In light of this, it is important to remember that the *Guide*'s recommended security design process might be a new experience for most team members. Designers and local stakeholders are likely to have limited experience with federal security decision-making, while experienced security professionals may have limited experience making these decisions as part of a collaborative design process. For the Project Team leader, it is important to understand this and to lay out clear roles and responsibilities.

Project Start: Team Roles and Responsibilities

ROLES	PRIMARY RESPONSIBILITIES
DHS Security Experts	■ Conduct building risk assessments for all GSA buildings, on a cyclical basis, prior to Project Starts. ■ Advise design teams on ISC criteria.
Security Consultants	■ Perform technical blast, glass fragmentation, and progressive collapse analysis to support risk assessments and analyses. ■ Conduct modeling and special studies, as needed, to support design efforts. ■ Provide technical expertise to prevent overscoping of countermeasures and unnecessary costs.
Building Security Committee (BSC)	■ Represents each agency in a federal building. ■ Considers DHS risk assessments and has decision authority over “optional” countermeasures.
GSA Project Manager	■ Leads Feasibility Study and Program Development Study teams to set scope and budget for large projects. ■ Leads the Project Team (both GSA staff and contractors) for design and construction phase work.
GSA Property Manager	■ Identifies general facility needs and functions, as well as maintenance and operations impacts of proposed countermeasures. ■ Occasionally leads projects for small, temporary countermeasures.
GSA Subject Matter Experts (including Office of the Chief Architect staff)	■ Advise development of scope, project schedule, and budget. ■ Provide design expertise prior to procurement of consultants.
Design Firms	■ Lead landscape, architectural, and urban design efforts to design effective, balanced countermeasures. ■ Lead efforts to develop the Multidimensional Assessment and Site Concept Plan early in the design process.
Local Stakeholders	■ Identify neighborhood plans, opportunities, and concerns related to urban design and countermeasures. ■ Provide desired or required support for some countermeasures.
All	■ Support the assessment and design evaluation. ■ Review the construction documents. ■ Collaborate and communicate.

At this point in the project, the team is small. It will expand over time as the project develops. Keeping a clear record of project decisions will minimize unnecessary repetition of work between phases and as participants come and go over the life of the project.

Phase 2
Multidisciplinary Assessment

This phase is the most fundamental in shaping a creative, comprehensive, balanced design solution. And, it is often the longest.

The Multidisciplinary Assessment phase has the most significant, lasting impact on the overall success of a site security design. It lays the foundation for the entire project, including both security strategies and all other potential site improvements that are necessary to create a high-quality public space. The activities that compose the Multidisciplinary Assessment begin during the Feasibility Study and Program Development Study (PDS) stages.

In this stage of a project, security experts complete their risk assessments as design experts and others complete their assessment of project opportunities and constraints. During this phase, all Project Team members frequently share and discuss their findings and progress both formally and informally.

This *Guide* emphasizes the importance of the Multidisciplinary Assessment because many types of expertise are required to fully understand existing conditions, constraints, and opportunities. Throughout this process, it is especially important that each team member shares the responsibility to meet all project goals, in all zones.

Key Points Within Phase 2: Multidisciplinary Assessment

- Analyze security vulnerabilities, site context, and opportunities throughout the entire site, using the *zone approach* to ensure a comprehensive view
- Assess security needs while heeding design opportunities, assess design needs while keeping in mind security opportunities; this is the foundation of the Multidisciplinary Assessment

COLLABORATIVE, COMPREHENSIVE APPROACH

The zone approach provides a common framework to assess existing conditions, including security vulnerabilities, site context, and opportunities. As described in Chapter 2, Project Teams consider each site in terms of six different zones (see Diagram 3.1), each of which plays a particular role in overall security design. Solutions that consider the importance of each zone can meet the required level of protection creatively and comprehensively. Team members should keep in mind that a successful site security solution never exists solely in one zone and must function across all zones.

With Prospectus-level projects, there may be a significant amount of time between when the information used for the Multidisciplinary Assessment is collected and the start of design. Meanwhile, risk assessments are performed on a cyclical basis, independent of capital improvements. Similary, GSA portfolio evaluations, facility assessments, master plans, and other studies may be conducted independently of the site security project.

Project Teams must be vigilant to ensure that the information they use is complete and current. The benefits of previous assessments, whether of risk, facility condition, or other project aspects, should not be lost, but should be examined in the context of their purpose and date. All information should be assessed for current relevance as the project moves forward.

Team members on large projects should meet frequently during this stage to ensure adequate discussion across disciplines so that consultants are up to date and informed when they join the project and begin work. Project managers play an instrumental role in supporting such collaboration and sharing. Projects that fail to achieve

a comprehensive assessment risk incorrect scopes, insufficient budgets, and design solutions that lack imagination and innovation.

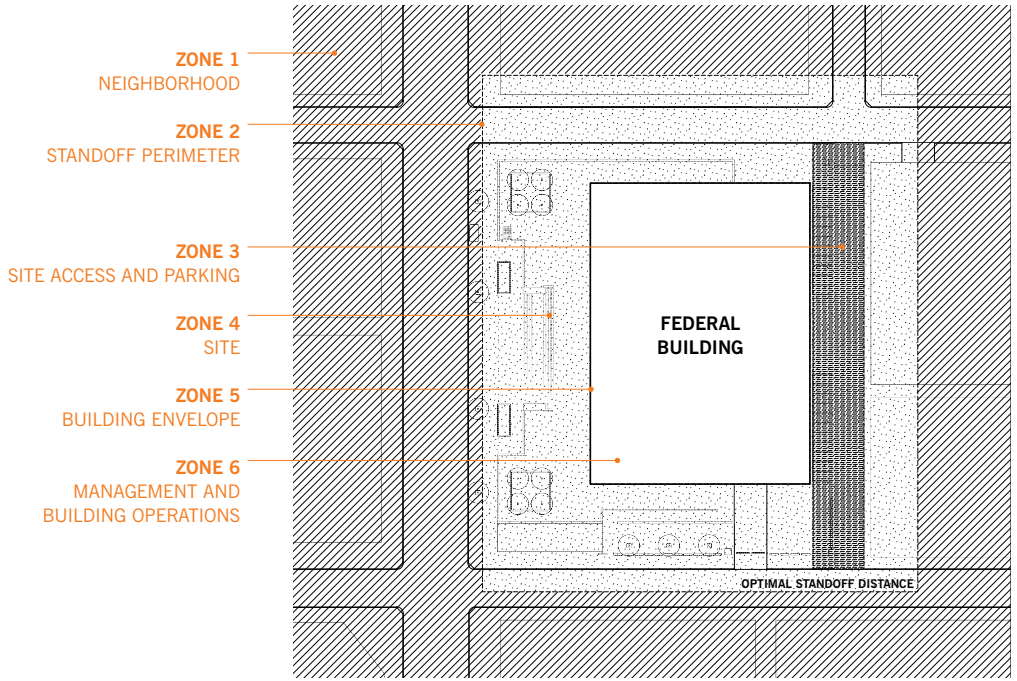
Smaller projects below Prospectus level may have an advantage in this regard. Their typically tight time frames ensure that the knowledge gained during a Multidimensional Assessment more easily stays with the project. Yet they present their own unique challenge to the goal of creating a comprehensively designed site.

Since this type of project typically deals with a smaller scope and, perhaps, a smaller portion of the site, Project Teams must ensure that the Multidimensional Assessment evaluates such a project in light of its impact on the entire site, and as one step toward a greater, holistic solution. Previous and future projects should build upon each other in an evolutionary way, developing a better facility according to a long-term vision. As Project Team members assess security and design, they must consider smaller projects as an integral part of a long-term development strategy.

Whatever a project's size, the Project Team must begin by looking at the many aspects that directly and indirectly impact overall design of site security. An example is shown in Diagram 3.2, in which the site's existing conditions are analyzed and documented graphically on a site plan. This information is shared among the team members. To aid in visualizing the example, photographs of buildings of a similar scale and architectural style have also been provided (see page 82).

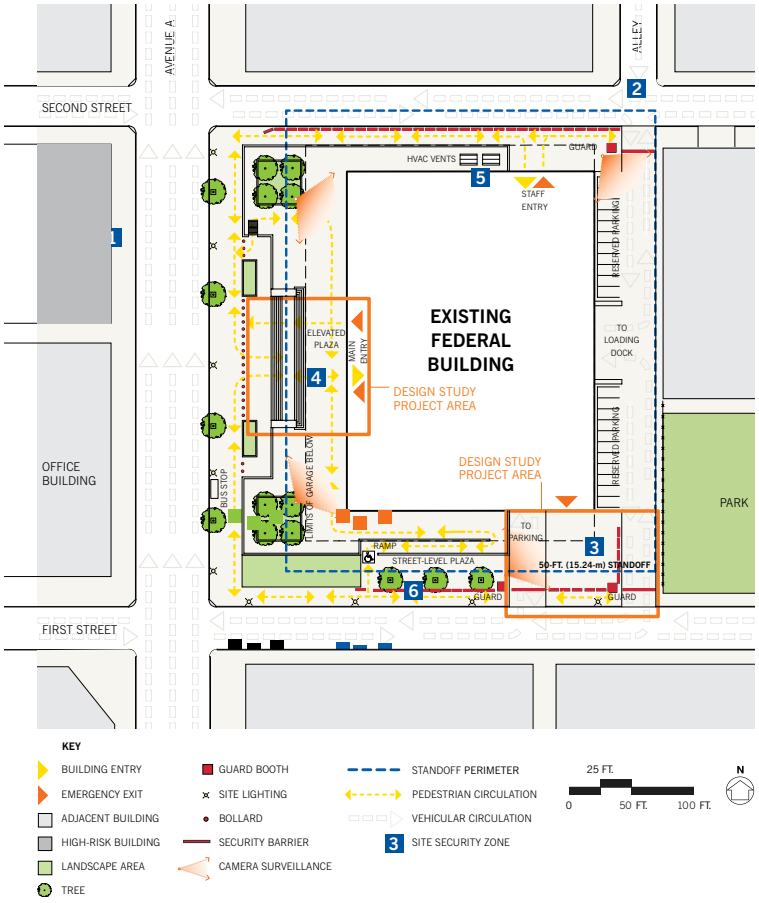
The activities in this phase include site visits, preparation and review of risk assessments, review of existing GSA studies and documents, and collection of information from other sources, as well as meetings with stakeholders to understand the broader opportunities and requirements for the project. This section provides a checklist to guide this assessment process (see page 87), plus a list of team roles and responsibilities (see page 89).

Diagram 3.1: Site Security Zones



Teams should use the zone approach discussed in Chapter 2 as a framework for the Multidisciplinary Assessment. Each zone may contribute to overall site security, while providing opportunities to enhance the site's function and appearance.

Diagram 3.2: Existing Conditions/Site Context Plan



Test Case Assumptions

1. The Federal Reserve building on Avenue A desires enhanced security because of the vulnerability of its lobby area.
2. An alley with one-way vehicular circulation dead-ends into the site, across from the north entry to the loading dock.
3. The loading dock and the underground parking garage servicing the building both have access from First Street.
4. The main entry to the building is not clearly delineated, and crowding occurs at the elevated plaza, as visitors wait to pass through security screening.
5. There are exposed HVAC vents/air intakes accessible from the elevated plaza.
6. During a heightened security alert, temporary barriers were placed on the street-level plaza and have not been removed or replaced with permanent security fixtures.

The building used to illustrate the site security design process in this chapter is an urban high-rise built between 1955 and 1975. Its site plan shows conditions typical to many federal buildings now undergoing site security planning. The building sits upon a plinth, with stairs leading from the sidewalk to a large plaza at the building's entry. Buildings of this era often have unattractive temporary barriers in place and large public plazas in need of general improvement.

The Project Team uses photos of existing conditions and an annotated site plan to document their initial site analysis.

RISK ASSESSMENT

A DHS physical security specialist performs the risk assessment and analyzes threats (actual or perceived), vulnerability of sites and buildings, consequences, and probability of occurrence. This risk assessment considers Design Basis Tactics and Levels of Protection in making recommendations for Design Criteria. Other stakeholders provide additional considerations and contribute to the definition of protective measures. The activities and the products of this process guide all subsequent site security design.

On some projects, especially smaller ones or modernization projects, a completed risk assessment may already be available; Project Teams should ensure that this assessment is current. For other projects, a new risk assessment is prepared or a completed risk assessment is updated. In every case, security experts in conjunction with the larger Project Team examine the risk assessment within the broader project context. In every case, the analysis of security issues must heed the latest ISC criteria.

There are three key outcomes of every DHS risk assessment:

1. **Design Basis Tactics** identify the specific acts and methods that the building and site's countermeasures must protect against and form the basis for the site security design. The ISC criteria define the specific Design Basis Tactics for a particular building, as part of the overall risk assessment. Typical Design Basis Tactics may include an explosion of a defined intensity at a defined distance from the facility (impacting the building's envelope and structural system) or a vehicle of a defined mass and speed that may be used to ram the facility (impacting the building's perimeter barrier system).

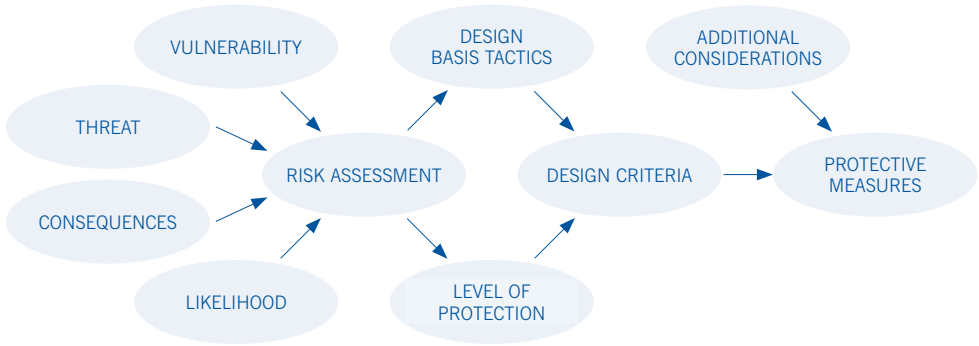
2. **Level of Protection** defines the performance that each affected building system requires. These performance levels are defined as Minimum, Low, Medium, or High and pertain to all affected systems, including glass, structure, and other components. The required performance may vary from one system to another within the same building, based on the specifics of each building.

3. **Design Criteria** define the design direction that emerges, based on inputs from the risk assessment, consideration of the Design Basis Tactics, and the required Level of Protection. These Design Criteria are very cursory and defined without consideration of other factors, such as cost, impacts on their surroundings, or creative alternatives. It is the responsibility of the design team to consider the Design Criteria, understand the Design Basis Tactics and Levels of Protection that shaped them, and provide effective and balanced design solutions that respond to them.

Teams must analyze all information through a multidisciplinary approach so that the interactions and impacts of various aspects of the project are well understood and addressed from the beginning. In past projects, separation of security specialists and designers during the assessment stages has resulted in less-than-ideal solutions, delays, or increased costs.

Diagram 3.3: ISC Security Decision-Making Process

This flow chart illustrates the main inputs and outputs in the security decision-making process, as outlined by the Interagency Security Committee. These outputs serve as the basis for additional analyses by the Project Team and the subsequent design of protective measures.



Risk assessments also include two types of recommendations for protective measures:

- **Optional Countermeasures.** Actions that the risk assessment designates as "optional" are those addressing low or moderate risks where the ISC does not establish minimum performance requirements. These can be approved or rejected at the discretion of the Building Security Committee (BSC), typically with each agency housed within the building casting one vote.
- **Mandatory Countermeasures.** Where the risk assessment identifies high-risk conditions that must be addressed, it defines "mandatory" countermeasures. The DHS inspector briefs the parties involved and offers a range of alternatives, where possible. The appropriate party, subject to funding availability, must take these recommended actions. To encourage resolution, DHS tracks the status of mandatory measures until they are complete.

Understanding the relation between Design Basis Tactics and protective countermeasures is crucial to creative problem solving. This is because design can be used not only to respond to the required Levels of Protection, but also to *modify* the Design Basis Tactics. In turn, this can open up new options to achieve the required performance.

For example, the Design Basis Tactics might assume that a vehicle of a certain size and speed has the potential to ram a perimeter barrier system. In response, the initial Design Criteria may recommend that the perimeter barrier be designed to allow *no penetration* into the site by that design basis vehicle. The design team could choose a perimeter barrier system to withstand a head-on strike by the design basis vehicle and ensure no penetration into the site. However, this response to the design basis vehicle's mass and speed likely would require a very robust system, and site context, budget, or underlying conditions may make this solution undesirable for non-security reasons.

The Security Charrette initiates the kind of well-informed discussion and give and take needed to develop a good solution that balances all of the competing facets of a project.

Alternately, the team may choose to design the site and its surroundings in such a way that addresses the underlying assumptions of the Design Basis Tactics and modifies the Design Criteria. The design could prevent the design basis vehicle from reaching the perimeter of the site or from reaching the design basis speed. As a result, the perimeter barrier system could achieve the required performance level of the bollard system with a less robust construction. This more creative approach offers more design options with significant opportunities to improve cost, compatibility, and effectiveness.

The Security Charrette (described in detail on page 85) is an important step in developing such innovative solutions. This is a recently developed process that is intended to support the Multidisciplinary Approach envisioned in the ISC criteria. Some projects may warrant a standalone Security Charrette that is devoted solely to security issues and countermeasures. This standalone approach allows for candid discussion of the most sensitive security issues and for highly technical engineering problem solving, which may not be appropriate for the entire Project Team. For less complex projects and issues, or at later stages of design, the Security Charrette should be combined with a more comprehensive design workshop.

The Security Charrette

The ISC criteria direct that security decision-making should be a multidisciplinary effort. The use of a Security Charrette, as part of the Multidisciplinary Assessment, is a technique to encourage collaboration.

A Security Charrette brings together the Project Team in a structured forum to develop reasonable, holistic, and conscientious security decisions. The Security Charrette is appropriate for projects of all sizes. At a minimum, it should first occur before a project budget is established (i.e., during the Feasibility Study for large projects). Charrettes may be repeated at other key stages in the project development, whenever important decisions arise. The typical Security Charrette is a full one-day event, but complex projects or issues may require more time.

In order to support a meaningful discussion of alternatives, the Charrette makes use of already completed technical studies and special tools. In addition to the DHS risk assessment, these may include other DHS analyses, blast and related studies provided by contractors, and GSA's **Decision Support Tool for the ISC Security Design Criteria (DST-ISC).** During the Charrette, the Project Team considers study findings, reconciles differences, and begins to form an overall security strategy for the site.

If at the time of the Security Charrette the Project Team has not yet completed comprehensive design concepts, the findings from the Charrette should be thought of as general directives and performance requirements. Creative solutions and detailed alternatives analysis will occur during the Site Concept Investigation Phase. As suggested above, additional Security Charrettes may be held during this phase to aid in decision-making.

Regardless of the Security Charrette's timing, the discussion should include consideration of wider design issues and facility needs, beyond security alone. It should incorporate information from the design assessment, discussed later in this section, as much as possible.

This multidimensional aspect is what sets the Security Charrette apart from the initial risk assessment and is why it is important to include a broad range of participants. Among them should be the following representatives:

- GSA Project Manager
- GSA Property Manager
- GSA design resource (from OCA or GSA Regional Office)
- GSA Regional Historic Preservation Officer (when applicable)
- Design consultants (architect/landscape architect/engineer), if hired at this stage
- DHS representative
- Building Security Committee members
- Local law enforcement official
- Local fire/HazMat official
- Local building code official
- Local city and neighborhood planners
- Feasibility Study team members
- Security/safety consultants, specialists, and engineers (if not included on the Feasibility Study team), such as
  - Blast consultant
  - Security consultant
  - Cost estimator
  - Electronic security and communications specialist
  - Engineers: structural, mechanical, and electrical
  - Fire protection consultant
  - Chemical, biological, radiological (CBR) consultant
- Recorder/DST-ISC operator

DESIGN ASSESSMENT

Just as the security-focused aspects of the Multidisciplinary Assessment weigh the role of design, Project Teams must keep security functionality in mind as they assess the site's everyday use and the facility's relationship to its neighborhood.

During the Multidimensional Assessment, be sure to look at the site in relation to its neighborhood and the city as a whole.

In other words, though typically led by a design firm, the site and design components of the assessment receive input from the full Project Team and outside parties, including other federal agency partners, professional peers, security experts, and local officials. The team conducts a detailed site investigation of each zone to examine the full range of existing conditions and opportunities. They also review GSA *P-100*; ISC criteria; and other policies, guidance, and regulations and identify requirements relevant to the project.

The team researches potential site elements that may contribute to the security design or existing elements that can be enhanced or removed to achieve the desired level of security. They also look closely at neighborhood context, building styles, materials, and local plans so that security is well integrated into its surroundings. (See the Checklist for Site Security Design Issues on page 87.)

GSA's guide to public spaces, **Achieving Great Federal Public Spaces: A Property Manager's Guide,** *provides a comprehensive audit tool useful for site assessment at existing buildings.*

These early investigations identify opportunities for multifunctional security elements and site improvements that enhance both the use of the site and its security. For example, if the circulation routes into and out of the site are no longer sufficient to handle current traffic volumes, they might be rethought to achieve more efficient flow, while preventing direct vehicular approach. Or, plans for improved perimeter security measures might be advanced along with an effort to improve public space amenities.

In addition to identifying opportunities to advance security and urban design interests, the assessment must flesh out underlying conditions (such as subsurface characteristics) and other site constraints that will impact implementation.

At this stage, countermeasure decisions should still be "penciled in," to allow flexibility and communication of internal and off-site tradeoffs as these initial ideas are shared with the entire Project Team. This enables subsequent multidisciplinary discussion to focus on tentative ideas, with the understanding that they are still in flux and should change to best balance all goals for the site.

As various subteams complete each aspect of the Multidisciplinary Assessment, a workshop or series of meetings provide the setting for the entire Project Team to review all findings and discuss how these create opportunities and constraints for the project. These face-to-face meetings enable ideas to be developed, evaluated, and refined "live" with questions, explanations, and contributions from the full team. This discussion, with all parties at the same table cooperating, is the essential aspect of a successful Multidisciplinary Assessment phase. Its outcomes, which may be represented as in Diagram 3.4 (page 88), form the basis for concept design in Phase 3.

By the end of Multidisciplinary Assessment, all Project Team members have an understanding of both the security and design opportunities of the site, and these are inherently interwoven. The products of this phase, which carry forward into subsequent phases, include the following:

- Risk Assessment:
  - Design Basis Tactics
  - Level of Protection
  - Design Criteria
  - Operational and Mandatory Countermeasures
- Preliminary Budget, Including Security Line Items
- Project Schedule
- Analysis of Neighborhood Opportunities and Constraints
- Site Analysis Summarizing Opportunities and Constraints:
  - Utilities Plan
  - Transportation and Circulation Plans
  - Existing Topography, Vegetation, and Boundaries
- Analysis of Existing Building and Structures
- Program of Requirements for New Construction

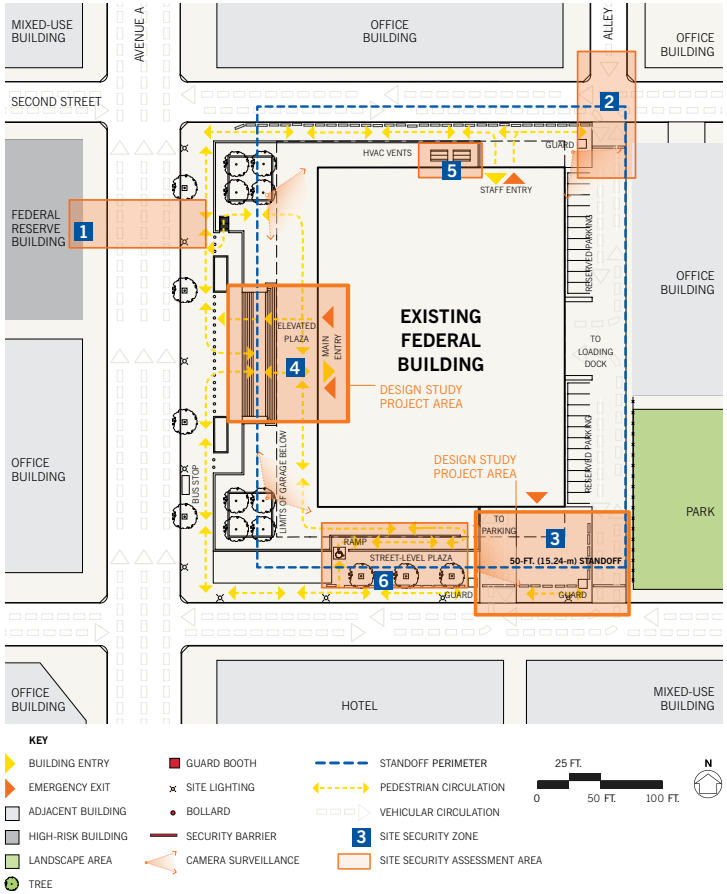
Checklist for Site Security Design Issues

The following represents a typical list of design issues
that are examined during the Multidisciplinary Assessment.
This list should be customized for each project:

Local Context	Regional Context Neighborhood Context Architectural and Landscape Context Local Planning Objectives: Land Use, Transportation, Parking, Regulatory Stakeholders Public Space Use and Improvement Opportunities for Public Space Links to Public Transportation Climate/Topography/Orientation Public Process/Input Future Planned Developments
Site	Historic Issues/Significance Circulation (pedestrian and vehicular; on and around site) Adjacent Building Programs and Configurations Existing Site Conditions/Use Underground Conditions/Utilities Existing Site Elements (e.g., parking meters, bus stops, light poles) Easements/Setbacks Access and Approach Vulnerability Environmental Conditions and Opportunities/Sustainability Site Remediation Requirements: NEPA (National Environmental Policy Act) and CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) Room for Growth/Expansion Provision Street Character/Features Vehicular Loading/Parking
Building	Historic Issues/Significance Existing Structural System (existing building) Building Mass/Program Requirements (new building) Lines of Sight Environmental Conditions and Opportunities/Sustainability Vehicular Loading/Parking

This example illustrates one way to represent the outcomes of Multidisciplinary Assessment so that all Project Team members understand the opportunities that security and design present to enhance both. While each project may use a different method of representation, any approach should articulate the characteristics of the site by zone and clearly define security design topics for further exploration. Here, the key issues to be addressed in the site security design are shared security surveillance; loading dock circulation; vulnerability of underground parking; building entry/queuing; HVAC protection; and perimeter security.

Diagram 3.4: Site Security Assessment Plan



Security and Site Design Topics

1 A neighboring building with similar security concerns offers an opportunity for partnership and sharing of security resources.

2 Direct run up to the entry point at the loading dock presents a risk; an unauthorized vehicle could accelerate to a speed sufficient to force entry.

3 When parking is located under a building, that entry point is vulnerable.

4 Unmanaged queuing causes congestion and confusion that can make security monitoring difficult and public space less safe.

5 Exposed HVAC vents or air intakes are vulnerable to airborne chemical, biological, or radiological attack.

6 The temporary barriers at the street-level plaza are not rated to prohibit vehicular approach and have negative off-site impacts on the streetscape and adjacent local businesses.

Multidisciplinary Assessment: Team Roles and Responsibilities

ROLES	RESPONSIBILITIES
Security Consultants	■ Present building risk assessment to team ■ Participate in Security Charrettes and other analyses (e.g., blast, vector) ■ Establish Level of Protection (LOP) ■ Work with designers; stay creative, flexible
Designers	■ Review existing conditions ■ Evaluate state-of-the-art, best practices ■ Create site program ■ Address sustainability, cultural, and historic issues ■ Participate in Security Charrettes ■ Collaborate closely with security consultants ■ Remain flexible and explore a variety of alternatives
Building Security Committee (BSC)	■ Reviews potential security threats with security experts and designers ■ Represents tenant and provides feedback to tenant ■ Approaches risk management with balance and creativity ■ Defines appropriate risk management ■ Looks at cost impacts and benefits to all participants
GSA Project Manager	■ Plans participation ■ Identifies issues and project requirements within schedule and budget
GSA Property Manager	■ Represents operation and maintenance point of view ■ Advocates for sufficient budget ■ Recognizes broader opportunities for property ■ Consults with GSA Regional Historic Preservation Officer ■ Coordinates external design review
Local Stakeholders	■ Provide local knowledge ■ Assist with consensus building, through a comprehensive approach and interaction with the Project Team ■ Bring additional physical or operational resources to the solution

Phase 3
Site Concept Investigation

The design process is an iterative cycle that posits and tests multiple concepts in order to develop the best approach. It must be dynamic and interactive to be successful.

Project Teams should always consider the costs and benefits of risk reduction as they review initial concepts.

Key Points Within Phase 3: Site Concept Investigation

- Develop multiple concepts that comprehensively address site-wide conditions, opportunities, and constraints identified in the Multidisciplinary Assessment phase
- Collaborate with project stakeholders and peers to examine these concepts, their ability to mitigate risk, and their impact on context

During the Site Concept Investigation, the team develops, studies, and refines multiple concepts that explore a variety of options for the site design in response to the Multidisciplinary Assessment. As in Diagrams 3.5–3.7, each concept shows different strategies to meet the diverse needs of GSA, tenant agencies, and local stakeholders.

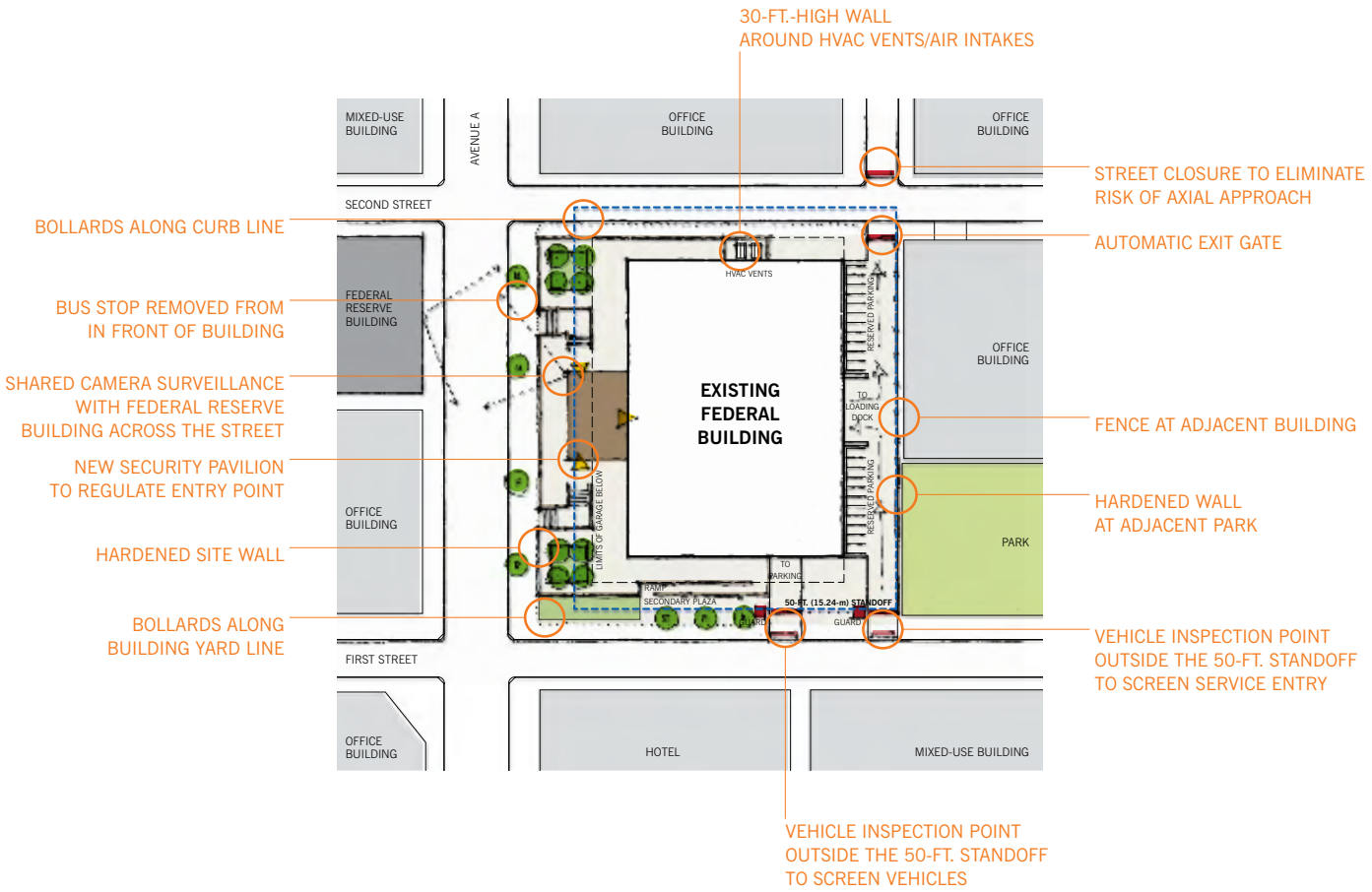
Project Team members discuss these concepts, their impacts, and their costs with GSA representatives, the BSC, security experts, other stakeholders, and peer reviewers. As these strategies are evaluated, Project Team members refine the best pieces and parts into new concepts. Project Team members may reevaluate their approach to security a number of times. In doing so, the team develops the most efficient and cost-effective approach to meet the needs of the project. Though the concepts become more refined and specific, they remain dedicated to the original site design strategy.

During this stage, fundamental strategies begin to take shape. For example, insufficient standoff distances may require significantly more hardening at a facility than would be required at a comparable facility where more standoff is available. It is important that Project Teams discuss such matters and options with the blast and security consultants before and during concept development. Spending time and money at this stage can save millions later in the project.

The Project Team must continue to look at the site overall, to ensure that the final design supports comprehensive, long-term site goals. Even where the project itself consists only of a specific area within the site (e.g., a high-priority perimeter), the Project Team must continue to address all aspects of the site. The Project Team will focus on the specific project area only in the last phases of the site security design process, when designers prepare final design and construction documents.

Once the important elements and issues are captured, the design team moves into the next phase of design, incorporating the information gathered from the concept investigations into a single concept for the site.

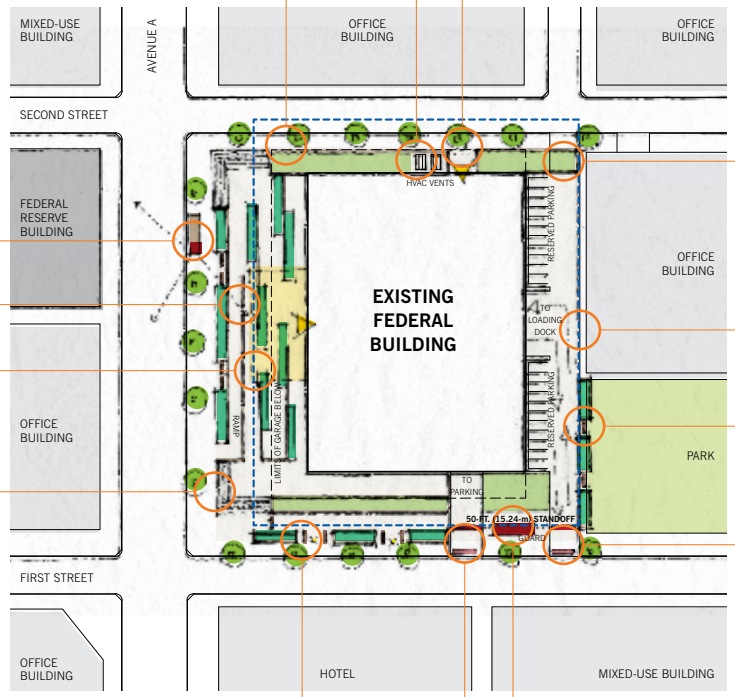
Diagram 3.5: Site Concept Investigation/Scheme 1



In Phase 3, the Project Team designs three concepts (pages 91–93) addressing the site and security needs of a single building in an urban location. Each scheme proposes different strategies, based on the Multidisciplinary Assessment. Stakeholders, team members, and peers review and revise these strategies, leading to a single concept in Phase 4.

In the first scheme, the proposed security improvements concentrate on establishing a physical standoff barrier at the perimeter of the site. Bollards are suggested as a simple off-the-shelf solution. A site wall is proposed around HVAC vents/air intakes. This scheme also proposes a new security pavilion to regulate entry, provides a queuing area, and shares CCTV surveillance with the Federal Reserve building across Avenue A.

Diagram 3.6: Site Concept Investigation/Scheme 2



SITE WALL AND PLANTING AROUND HVAC VENTS/AIR INTAKES

HARDENED PLANTER WALL

BOLLARDS AT STAFF ENTRY

SERVICE ENTRY/EXIT CLOSED

TRANSIT STOP/INFO CENTER CREATES MORE EYES ON THE STREET

RAMP SYSTEM ALLOWS UNIVERSAL ACCESS AND MANAGES QUEUING

CANOPY OVER QUEUING AREA

ADJACENT BUILDING PROVIDES ADEQUATE STANDOFF

HARDENED SITE FURNITURE AND PLANTER WALLS AT ADJACENT PARK

NEW ENTRY STAIR AT CORNERS

VEHICLE INSPECTION POINT OUTSIDE THE 50-FT. STANDOFF TO SCREEN SERVICE ENTRY

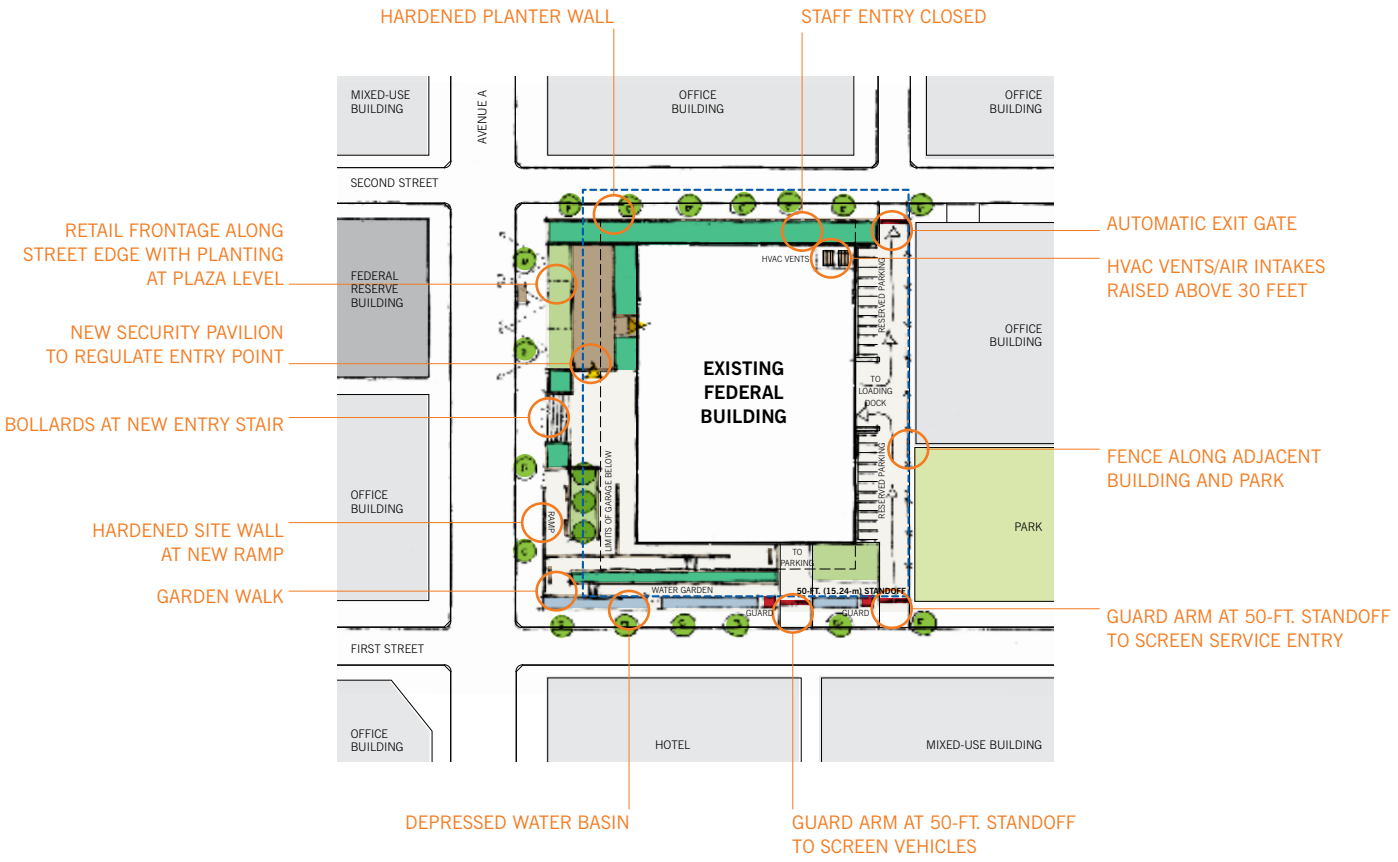
HARDENED SITE FURNITURE AND PLANTER WALLS

COMBINED GUARD BOOTH FACILITY

VEHICLE INSPECTION POINT OUTSIDE THE 50-FT. STANDOFF TO SCREEN VEHICLES

The second scheme utilizes security measures to improve the site's existing vehicular and pedestrian circulation. Physical standoff barriers are multifunctional, serving as site landscape amenities and pedestrian improvements. Structurally hardened existing planter walls visually integrate security measures with the site's landscape architecture. New stairs at the street corners eliminate the potential for a vehicle to climb the wide, central stair. A landscaped ramp system with a canopy cover for weather protection provides universal access and manages queuing in an orderly and pleasant manner. In addition, a combined guard booth facility oversees the entrances to both underground parking and the loading dock.

Diagram 3.7: Site Concept Investigation/Scheme 3



In the third scheme, a structure at both the street and plaza levels incorporates retail uses and a new security pavilion, while providing standoff. Retail at the edge of the site provides neighborhood amenities, such as shopping and food service, while reducing the impact on the streetscape of a security setback. The retail structure also includes CCTV to provide surveillance around the building. The security pavilion regulates access to the relocated main building entry. This scheme replaces temporary barriers with a water basin. This moat provides a secure perimeter, while acting as the centerpiece for a public water garden at the sidewalk-level plaza.

GSA's Design Excellence program includes peer review during the Site Concept Investigation phase of the project. This offers an excellent opportunity to explore alternatives and gather feedback on how to integrate security requirements with other project needs.

Site Concept Investigation: Team Roles and Responsibilities

ROLES	RESPONSIBILITIES
Security Consultants	■ Critique concepts, introduce best practices, and provide information and research as needed
Designers	■ Collaborate on solutions ■ Explore options (push the envelope) to find the best solution
Building Security Committee (BSC)	■ Advocates creative and realistic solutions ■ Brings tenant point of view ■ Analyzes operational solutions to balance reduction of risk with cost ■ Reviews recommended changes
Project Manager	■ Ensures that designers and security experts provide creative input ■ Organizes peer reviews to help develop a single, focused concept from the initial concepts
Other GSA Resources **Center for Design Excellence (appropriate peers)** **Center for Historic Buildings**	■ Review project, as required, and provide critique to help develop single, focused concept from the initial concepts ■ Review project for Section 106 of the National Historic Preservation Act (NHPA) compliance
Stakeholders	■ Participate in concept review

Phase 4
Site Concept Selection (Conceptual Strategy Plan)

This phase should proceed seamlessly from the previous phase. Here, the design team develops a *single* alternative for the entire site, which comprises the best elements from the Site Concept Investigation.

Key Points Within Phase 4: Site Concept Selection

- Combine best results from site concept investigations into a "hybrid" concept (a Conceptual Strategy Plan)
- Reach consensus on basic strategies for security countermeasures and site improvements
- Begin consideration of budget and phasing to bring the design into built form

The selected Site Concept should be a hybrid, balanced solution that incorporates and refines the most appropriate strategies and design elements from the many site concept studies (see Diagram 3.8). It should consider the entire site to ensure that solutions contribute to its overall improvement. In subsequent stages the Project Team will focus only on the specific project areas defined by the scope.

On smaller projects, the preferred concept can be chosen through informal peer reviews with GSA Regional experts and informed discussions among Project Team members. On larger projects, it is helpful to hold a formal peer review with design peers selected through GSA's Design Excellence program. They can provide an informed critique and foster discussion of costs and benefits.

Although the Project Team will still refine the selected concept further after this phase, at this point the team should reach consensus on the appropriate balance between security, aesthetics, and functionality. In addition, the team must agree on the fundamental strategy with regard to risk, including consensus about risk acceptance.

Remember that risk can be mitigated and managed, but it can never be eliminated. Since it is not always possible to reduce risk through physical solutions alone, a successful Site Concept may depend on operational strategies, as well. These strategies should be considered an integral part of the risk management strategy and should also be agreed upon at this stage.

Site Concept Selection: Team Roles and Responsibilities

ROLE	RESPONSIBILITIES
All Team Members	■ Collaborate to develop a Conceptual Strategy Plan ■ Ensure that goals, requirements, and hallmarks (including comprehensive site design and long-term development strategy) are satisfied

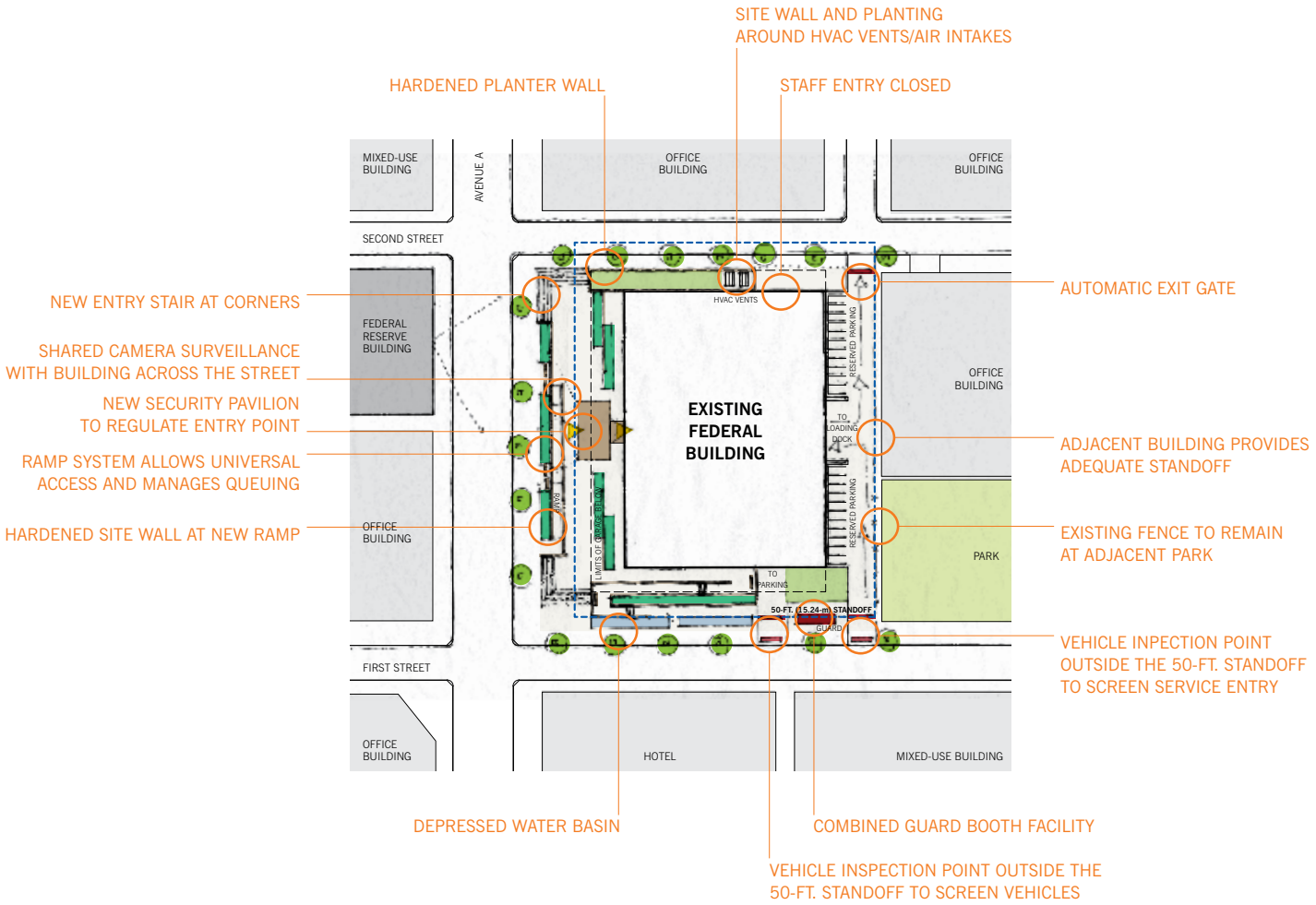
Diagram 3.8: Conceptual Strategy Plan

The Project Team combines the most successful elements of the three site concept investigations in an overall Site Concept. In this case, the hybrid scheme balances security measures with site circulation improvements through the use of multifunctional landscape elements.

This concept reflects the specific expertise that each team member provided regarding the tradeoffs inherent in each strategy. The elements in the Site Concept achieve a balance of security, multifunctionality, and appropriateness to site and budget.

The site security design elements incorporated from the three conceptual design schemes comprise the following:

Zone 1: Operational improvements, including a partnership with the Federal Reserve building across Avenue A, provide shared CCTV surveillance.



Zone 2: Structurally hardened planter walls provide increased protection from vehicles, while blending into the site's landscape architecture. Physical standoff barriers function as security elements, site amenities, and streetscape improvements.

Zone 3: A combined guard booth facility oversees the entrances to both underground parking and the loading dock simultaneously, reducing the number of required guards.

Zone 4: Existing, wide central stairs are divided and relocated to the street corners; a new axially located security pavilion regulates entry and facilitates queuing; and a landscaped ramp system provides universal access and allows queuing in an orderly and pleasant manner. In addition, a depressed water basin increases standoff, while providing a centerpiece for a public water garden.

Zone 5: Plantings, grates, and filters screen HVAC vents/air intakes, thereby restricting access.

Zone 6: A strategic plan is developed to replace temporary barriers that were placed in haste and have remained for years. The plan includes the removal and disposal of the temporary barriers and replacement with multifunctional barriers. The plan also establishes operations and maintenance requirements for future use of temporary barriers, if necessary.

Phase 5
Design Studies for Project Areas

After reaching agreement on the preferred Site Concept, the design team continues with more *detailed design work* on key elements of the Site Concept. These may involve the more complex or high-priority areas of the overall site. Also, in cases where the entire site concept will not be implemented in a single project, these Design Studies may begin the detailed design work that the team will carry through to final design as part of the immediate project.

Key Points Within Phase 5: Design Studies for Project Areas

- Perform a series of studies exploring different ways to achieve the goals of the Conceptual Strategy Plan
- Consider team expert input regarding the detailed approach for key areas
- Revisit budget and schedule goals and long-term maintenance and operations

Using perspective sketches and renderings, the Design Studies further explore the ideas generated by the Conceptual Strategy Plan (see pages 98–99). The designers must test the Conceptual Strategy Plan against real site constraints and unseen obstacles, such as utility lines or underground vaults, which prevent barriers from attaining the structural foundations necessary to act as effective deterrents. Project Team members may contact additional consultants, such as structural engineers, to confirm site survey information and test assumptions.

The team reviews the Design Studies together and concentrates on important design details, with the larger site goals in mind. For example, in the Site Concept there may be a proposed perimeter wall along a portion of the site. During this stage, the security experts may comment on the likely performance of the proposed wall's construction or anchoring. Urban designers or local officials may advise on how the wall's details would impact neighborhood design goals.

Project designers provide a range of input on these issues and more, including material choices and information about cost and constructability. Ideally, as part of the discussion, security experts suggest alternatives that meet their performance requirements, while responding to the urban designers' concerns, and vice versa.

Larger strategy decisions are made during concept development in Phases 3 and 4, but this detailed design study phase is necessary to integrate countermeasures into the particular fabric of the site and its surroundings.

Design Studies for Project Areas: Team Roles and Responsibilities

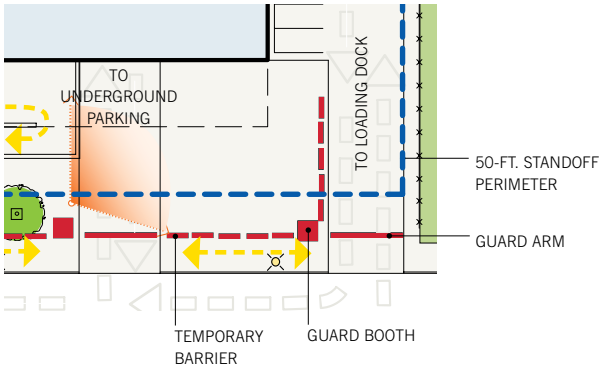
ROLE	RESPONSIBILITIES
All Team Members	■ Ensure that the design meets site security hallmarks ■ Obtain consensus from all stakeholders on a realistic approach to budget, schedule, maintenance, and operations considerations

Project Area Design Studies: Zone 3

Security Design Problem

Regulation of vehicular access to the site requires a combination of security elements to stop and screen cars and trucks prior to passing inside the perimeter. Ideally, access to on-site parking should be separated from service access because the screening process is different for each. A tenant with daily access requires a lower level of screening than a delivery truck. Multiple entry points require high operational overhead in terms of facilities and staffing. When parking is located underneath the building, that entry point is particularly vulnerable. An explosive-laden vehicle could penetrate the standoff perimeter and gain access to areas beneath the building.

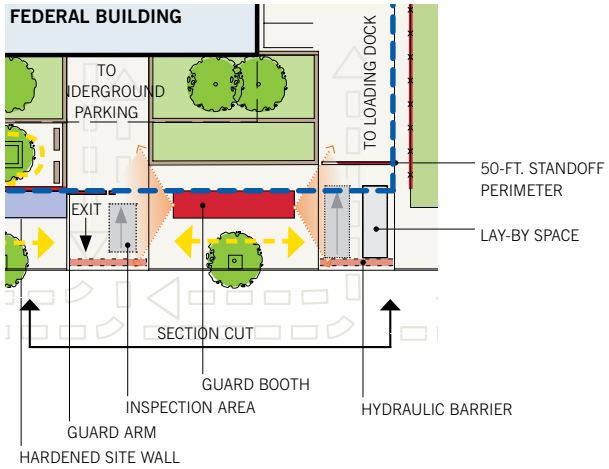
Existing Conditions Plan



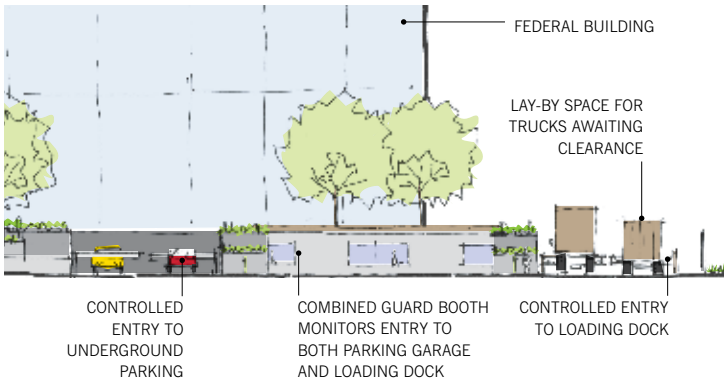
Proposed Security Design Solution

To reduce operational costs and consolidate security oversight, a shared guard booth regulates access to both the underground parking garage and the loading dock. Guard arms designed as vehicular barriers control entry prior to security screening. Hydraulic barriers prevent a vehicle from backing into the street in the event that it needs to be detained. If possible, vehicles should be stopped outside the 50-foot standoff perimeter for inspection. Due to the constraints of this site and the space required for a truck to pull off the street completely to avoid stopping traffic, the guard arm at the loading dock is located slightly within the standoff perimeter. A lay-by space enables trucks that are waiting for security clearance to pull to the side, allowing other vehicles to pass.

Design Solution Plan



Elevation View



Zone 3: Site Access and Parking

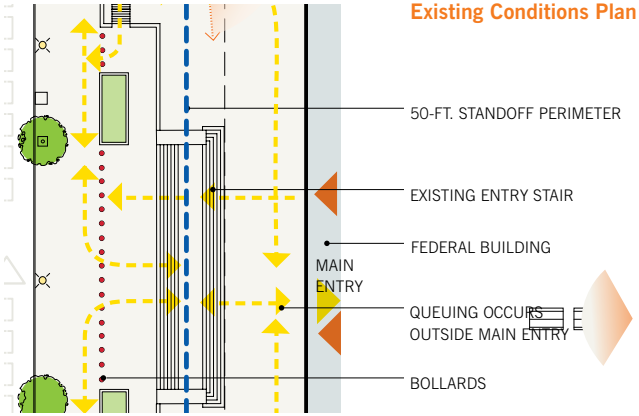
The concept of combining three guard booths into one saves on operational and staffing costs, while centralizing security oversight. The placement of the guard booth supports clear views of all vehicles entering the loading dock, as well as the underground parking entrance off First Street.

Project Area Design Studies: Zone 4

Security Design Problem

Existing buildings often have main building entries and lobbies that were not designed for current security processes and equipment and are difficult to reconfigure. A typical modernist building with a curtain wall façade may have multiple main doors and few visual cues to direct visitors to the appropriate entry for screening. This can cause confusion, especially if the building has a high degree of public use. Crowding may occur as visitors wait to be processed through the security checkpoint. If not properly controlled, queuing can create disorder and make security oversight more difficult.

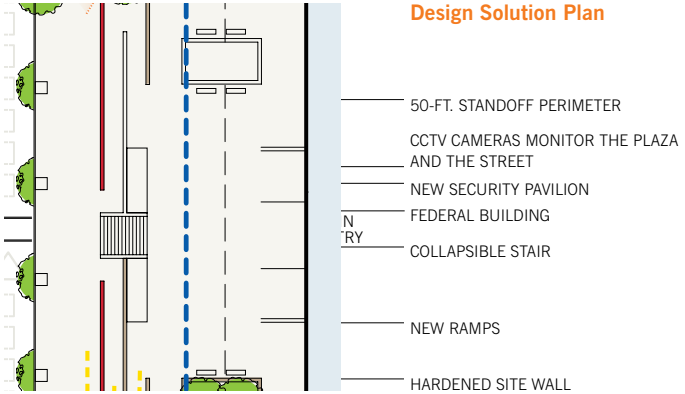
Existing Conditions Plan



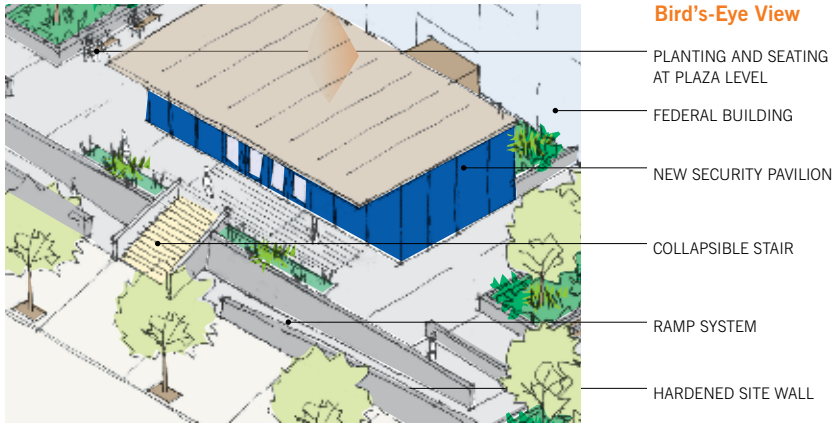
Proposed Security Design Solution

A security pavilion outside the main building provides the additional space required to accommodate the security equipment and guards needed to screen visitors prior to entry. The pavilion clearly delineates the “front door” to the building and provides cover for visitors waiting for entry. Due to the size of the pavilion, the elevated plaza is reconfigured. The main approach is rebuilt to incorporate a new collapsible stair and accessible ramps. The collapsible stair incorporates a compressible fill that supports pedestrian traffic, but will fail under the weight of a vehicle. A reinforced knee wall built into the stair prevents further approach. The ramps, which provide universal access, also offer additional area for queuing overflow. The walls alongside the ramps guide queues and offer room to sit and wait. The elevated plaza provides open space for casual seating and a large area for public programs or demonstrations.

Design Solution Plan



Bird's-Eye View



Zone 4: Site

Hardened site walls and ramps create an invisible perimeter barrier and generous standoff distance. The ramps provide universal access to the main entry. The security pavilion on the plaza level offers a comfortable enclosed queuing area, while positioning visitor security inspection outside the building envelope (Zone 5). The centrally located pavilion complements the existing building’s design. Shade trees in hardened planters provide pleasant seating areas on the plaza.

Phase 6
Final Concept Development

At this stage, the team completes the detailed *final concept for the project* that proceeds forward into construction. Note that if the entire Site Concept from Phase 4 will not be implemented as part of the immediate project, this Final Concept Development may concentrate on only the portions of the project that will move forward into planned construction.

As part of GSA's Design Excellence process, at the conclusion of this stage the team makes its final concept presentation to stakeholders.

Key Points Within Phase 6: Final Concept Development

- Complete Final Concept for planned project
- Develop implementation and phasing plan (if necessary)

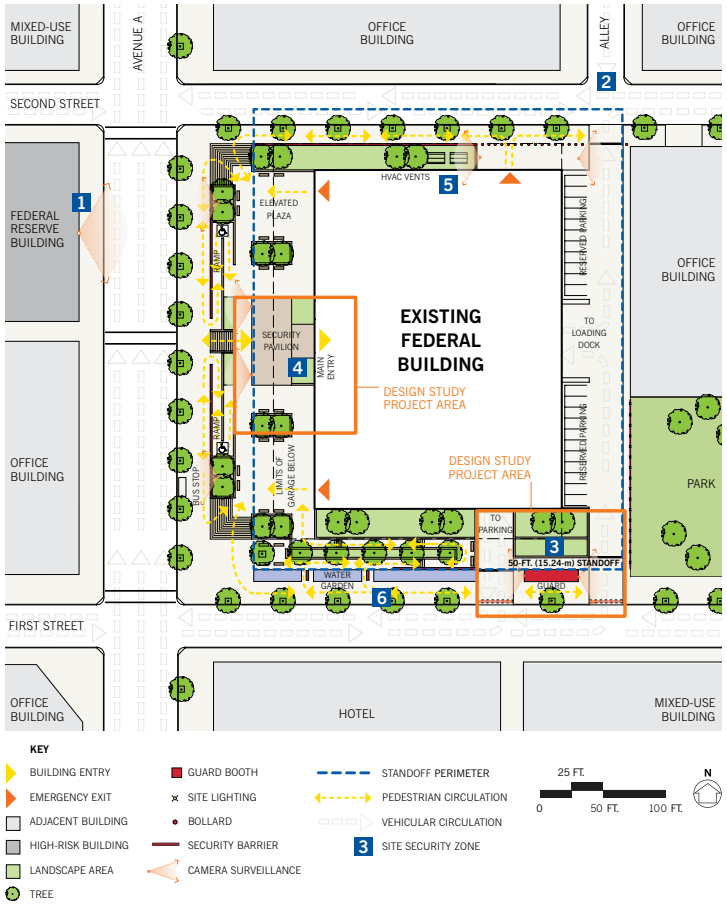
The team chooses the products, materials, and methods of implementation for the entire project scope, beyond the special areas that might have received more detailed design study in the previous phase. The Final Concept Plan should be true to the overall Site Concept (Conceptual Strategy Plan) from Phase 4 and responsive to the input received during the detailed Project Area Design Studies in Phase 5 (see Diagram 3.9).

If the project is to be implemented in phases, the timing must be finalized for the most efficient use of materials and labor. Similarly, if the project is a renovation of an existing building, the Project Team must analyze the logistics of working on and around an occupied building.

Final Concept Development: Team Roles and Responsibilities

ROLE	RESPONSIBILITIES
All Team Members	■ Collaborate to develop Final Concept ■ Finalize concept budgets ■ Address issues of phasing (if necessary)

Diagram 3.9: Final Concept Plan



Security and Site Design Solutions

1 Cameras mounted on the façade of the Federal Reserve building monitor activity in front of the existing federal building, while cameras placed at key locations on the elevated plaza monitor activity along Avenue A to create shared surveillance of the street.

2 Traffic into the loading dock area is limited to entry from First Street, and an automatic security gate regulates egress onto Second Street. The risk of axial approach from the alley into the standoff perimeter is deemed negligible.

3 A sensitively designed guard booth efficiently controls access to both the garage and the loading dock and adds "eyes on the street" to the rear of the building, adjacent to the park.

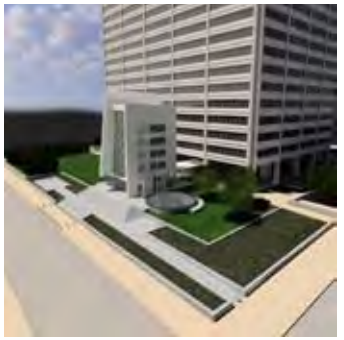
4 A security pavilion at the plaza level creates space outside the existing federal building to screen visitors and manage queuing.

5 Planting areas, grates, and filters protect the HVAC vents/air intakes from unregulated access.

6 The temporary barriers are removed and replaced by security elements, such as site walls and a moat that is also a water garden at the street-level plaza. Multipurpose features minimize risk and improve the quality of public space.

After the site security design concepts have been examined in detail, the team refines, integrates, or redevelops the best concepts and creates a Final Concept Plan. The Final Concept Plan is a package of plans, sections, elevations, and details for the proposed design. The plan may be constructed in its entirety or divided into phases.

Key elements in the Final Concept Plan include surveillance cameras operated in conjunction with a neighboring federal building, a custom-designed guard booth, hardened site furniture, and a new security pavilion. The solution is integrated into the site and compatible with the building's architecture.



Phase 7
Final Design and Construction Documents

After the team reaches consensus on the design studies, final concepts, and implementation strategies, the process moves into the Final Design and Construction Documents phase.

Key Points Within Phase 7: Final Design and Construction Documents

- Continue collaboration during this phase to ensure that the design and specifications stay consistent with concepts, materials, and budgets
- Coordinate site security elements with other aspects of the project

Project Teams must incorporate careful review at this phase to ensure that security design features are not inadvertently modified as the team finalizes the project details. Likewise, teams must ensure that significant site amenities or finishes are not stripped out of the project while fine-tuning the construction documents and budget.

In this *design-intensive* stage, designers play the lead role. Other team members play an important role in reviewing drawings and specifications to ensure that agreed-upon elements are properly represented in the Final Design.

The development of design and construction documents may not require as much team involvement as other phases of the project. This may make coordination more challenging, as not every team member is needed at every meeting.

Final Design and Construction Documents: Team Roles and Responsibilities

ROLE	RESPONSIBILITIES
All Team Members	■ Collaborate to develop Final Design and Construction Documents ■ Ensure that all elements of the Final Concept are represented in Construction Documents ■ Finalize budgets and schedules to prepare for construction ■ Address issues of phasing (if necessary)

Phase 8
Project Completion and Operations

Once construction begins, the Project Team should stay involved, as needed, to respond to unforeseen conditions during construction and alter the project design to respond to such conditions. Moreover, as the project is completed and put into use, building management and security operations must continually evaluate the function of the physical countermeasures over time and remain committed to the operational security measures that help to form the complete solution.

Key Points Within Phase 8: Project Completion and Operations

- Collaborate to resolve last-minute concerns during construction
- Sustain commitment to security operations and maintenance after completion

Project Completion and Operations: Team Roles and Responsibilities

ROLE	RESPONSIBILITIES
All Team Members	■ Collaborate to resolve any final issues ■ Maintain commitment to comprehensive site security plan throughout its working life

CONCLUSION

A successful site security design process carries a project from initial conception to final completion, incorporating the elements and hallmarks described in the *Guide* thus far. This integration is the subject of the following chapter, in which illustrative test cases portray successful implementation in five realistic scenarios.