2012
Build Safe | Live Safe Conference

3D Site Safety Plans

John Chiusano, RA

April 23, 2012 – Times Square Marriott Marquis

2012 Build Safe | Live Safe Conference

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Course Description

Three-dimensional representations of site safety construction logistics is becoming more common, and this technology is expected to become the construction industry's standard. This software provides site managers and construction regulators with an interactive, animated 3D model, allowing users to take virtual tours of a project and "view" the safety challenges – all before the first shovel hits the ground. This seminar will help participants gain a broad understanding of this emerging technology, why it is important to use and how it could prevent potential safety issues.

Through electronic visual examples and written samples, participants will complete the program with an understanding of the provisions outlined in Chapter 33 of the NYC Building Code and be able to submit acceptable site safety plans as required by the Department of Buildings. In addition, they will comprehend the critical importance of pre-planning and collaboration between the contractor, designer and site safety managers. Finally, participants will understand the limitations of two-dimensional plans and how to improve upon them if they are not yet using 3D software.

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Learning Objectives

At the end of this program, participants will have learned:

- Common construction site safety plan obstacles through the use of examples and analyze logistics
- The complexities of two-dimensional site safety plans and their limitations
- How to virtual tour a project to demonstrate a design that meets the requirements of Chapter 33 of the NYC Building Code
- How to use 3D modeling software to identify potential safety issues

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Common Construction Site Plan Obstacles

The Evolution

- 2D submittals using hand drafting and Visio
- 2D submittals using CAD
- Now, there are 3D plans using:
  - Revit
  - Navisworks
  - Auto CAD

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2D Site Safety Plans Submitted

Today: A Phased Approach

Sheet #1 Title sheet job identification information

Sheet #2 General Information

Sheet #3 Egress

Sheet #4 Demolition Phase

Sheet #5 Excavation Phase

Sheet #6 Foundation Phase

Sheet #7 Superstructure Phase

Sheet #8 Adjoining Property Protection Plan

Sheet #9 Sections/Elevations Showing Horizontal Protection

Sheet #10 Standard Details

Sheet #11 General notes

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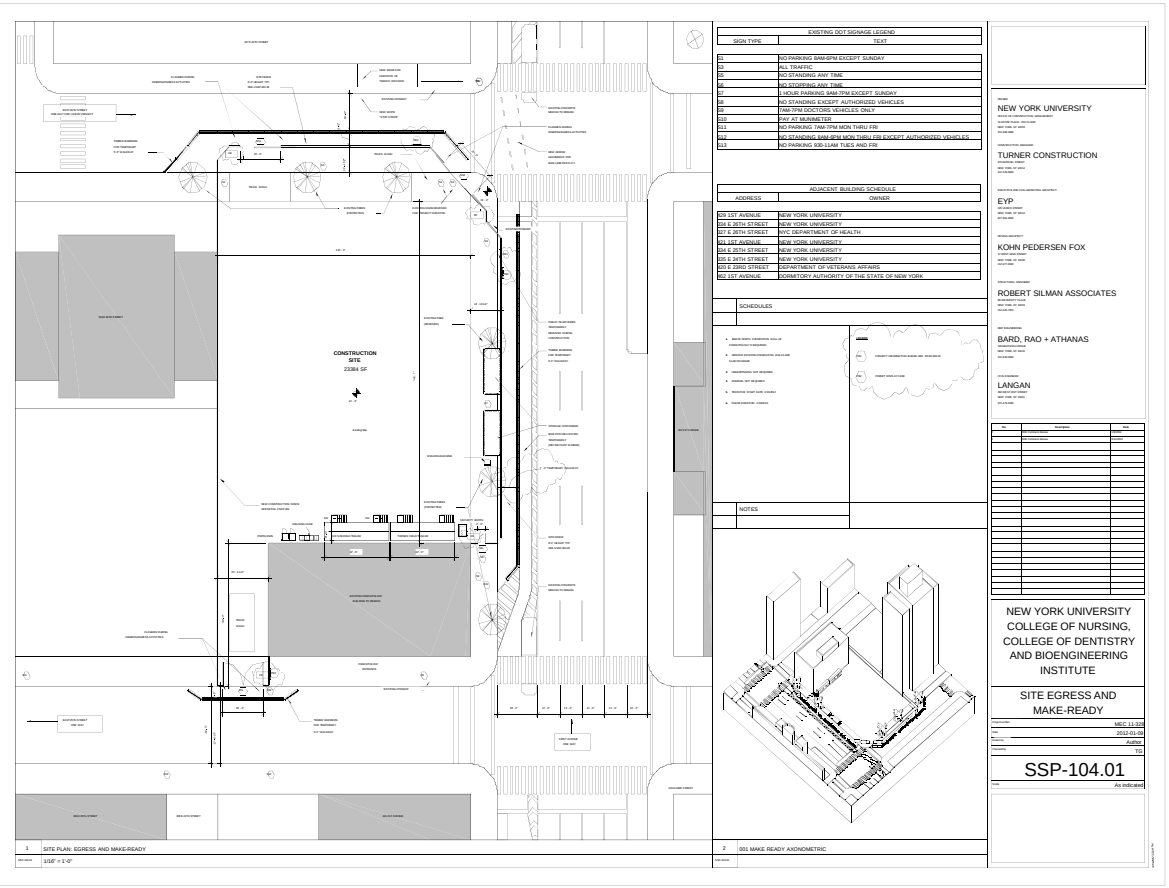
Basic 2D CAD Drawing



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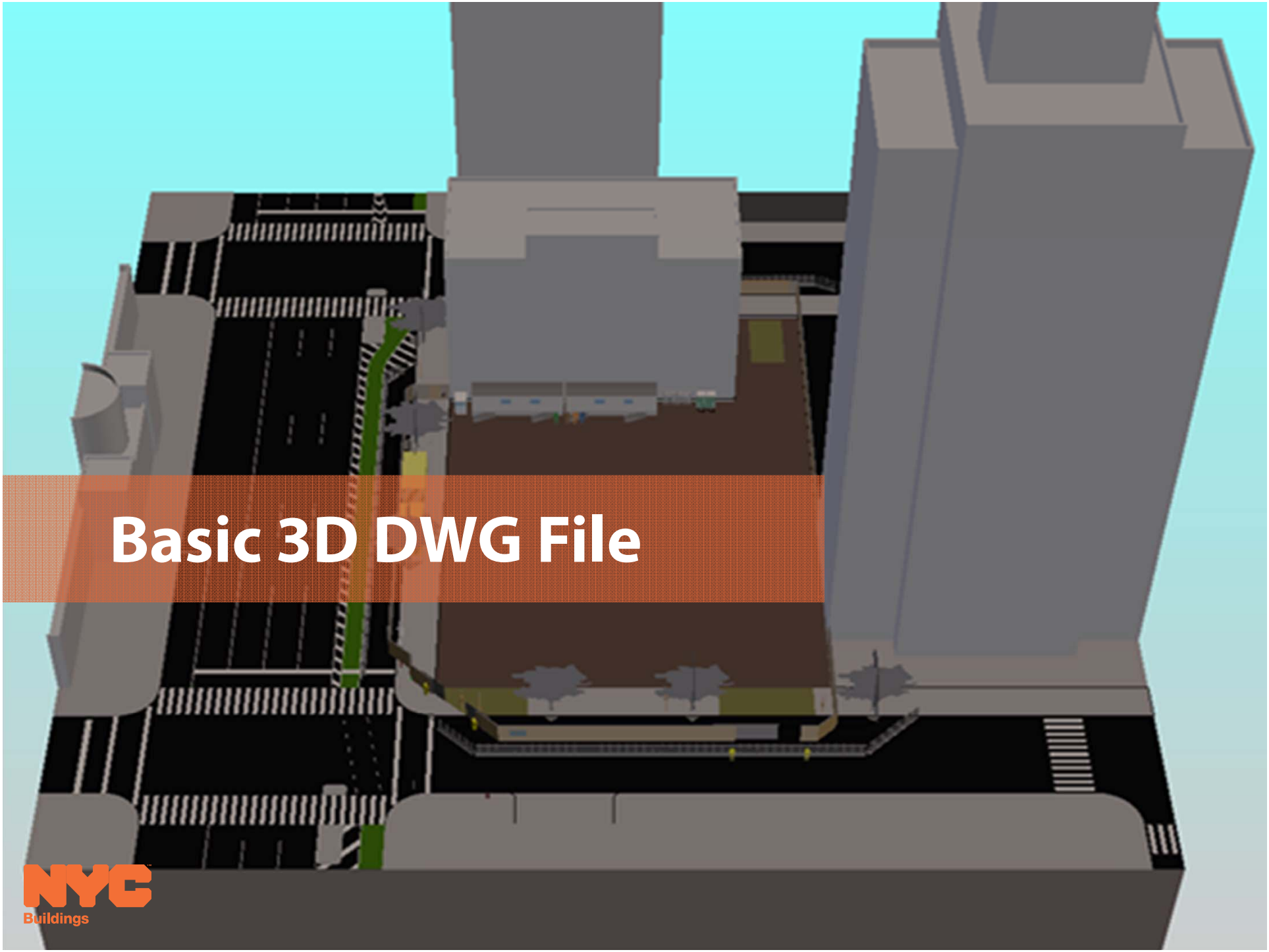
Basic 3D DWG File
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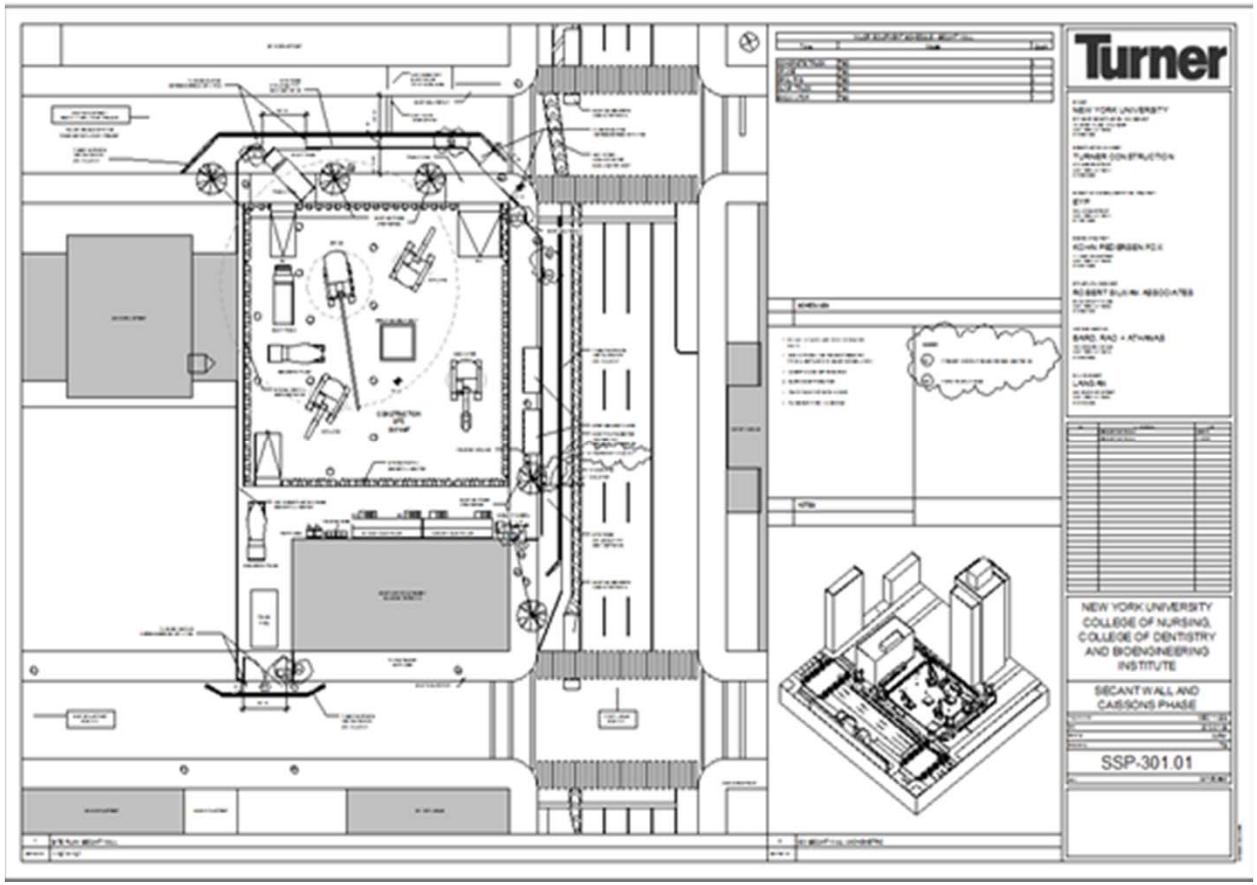
Basic 2D CAD Drawing



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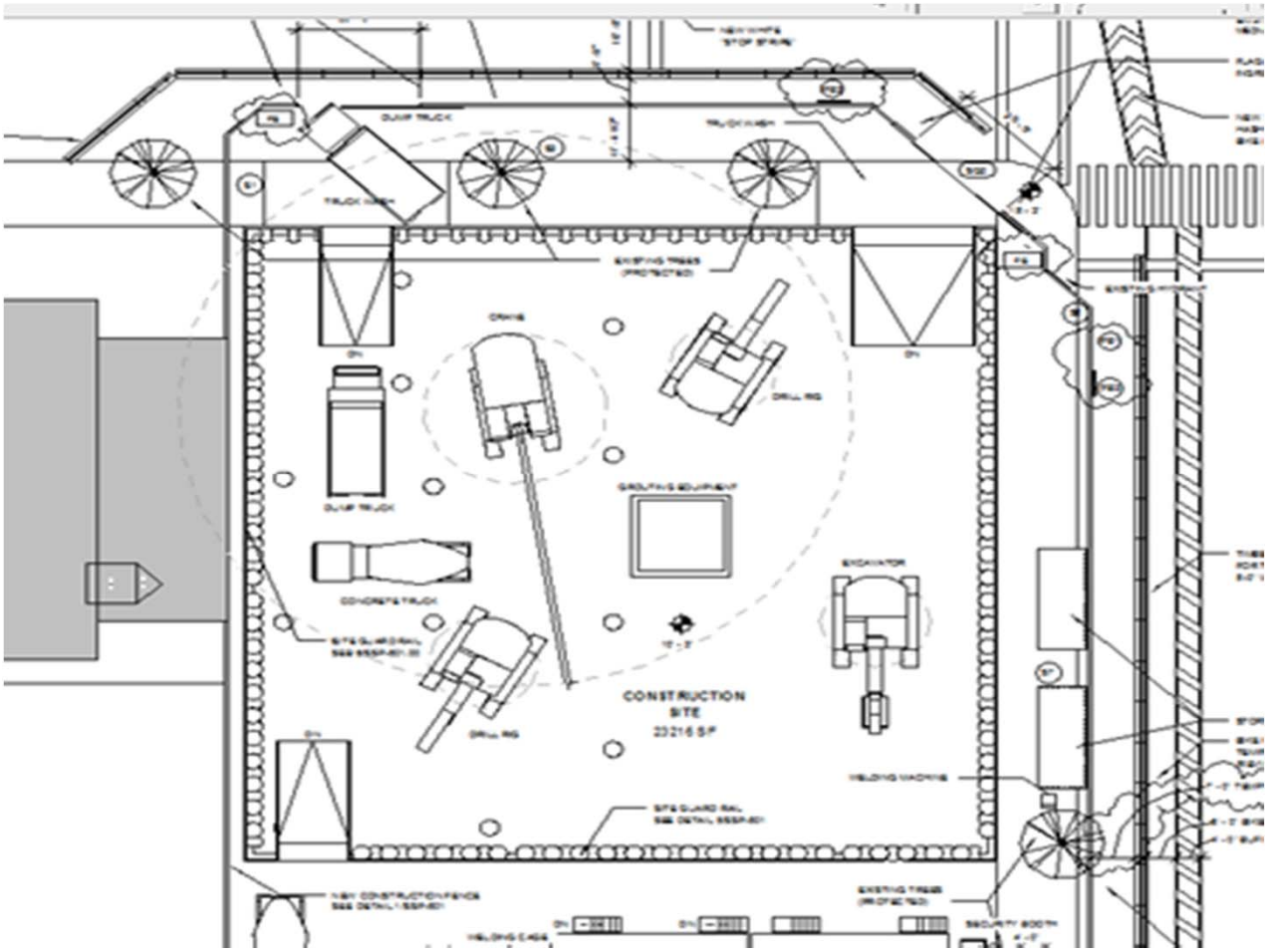
Basic 2D CAD Expanded Drawing



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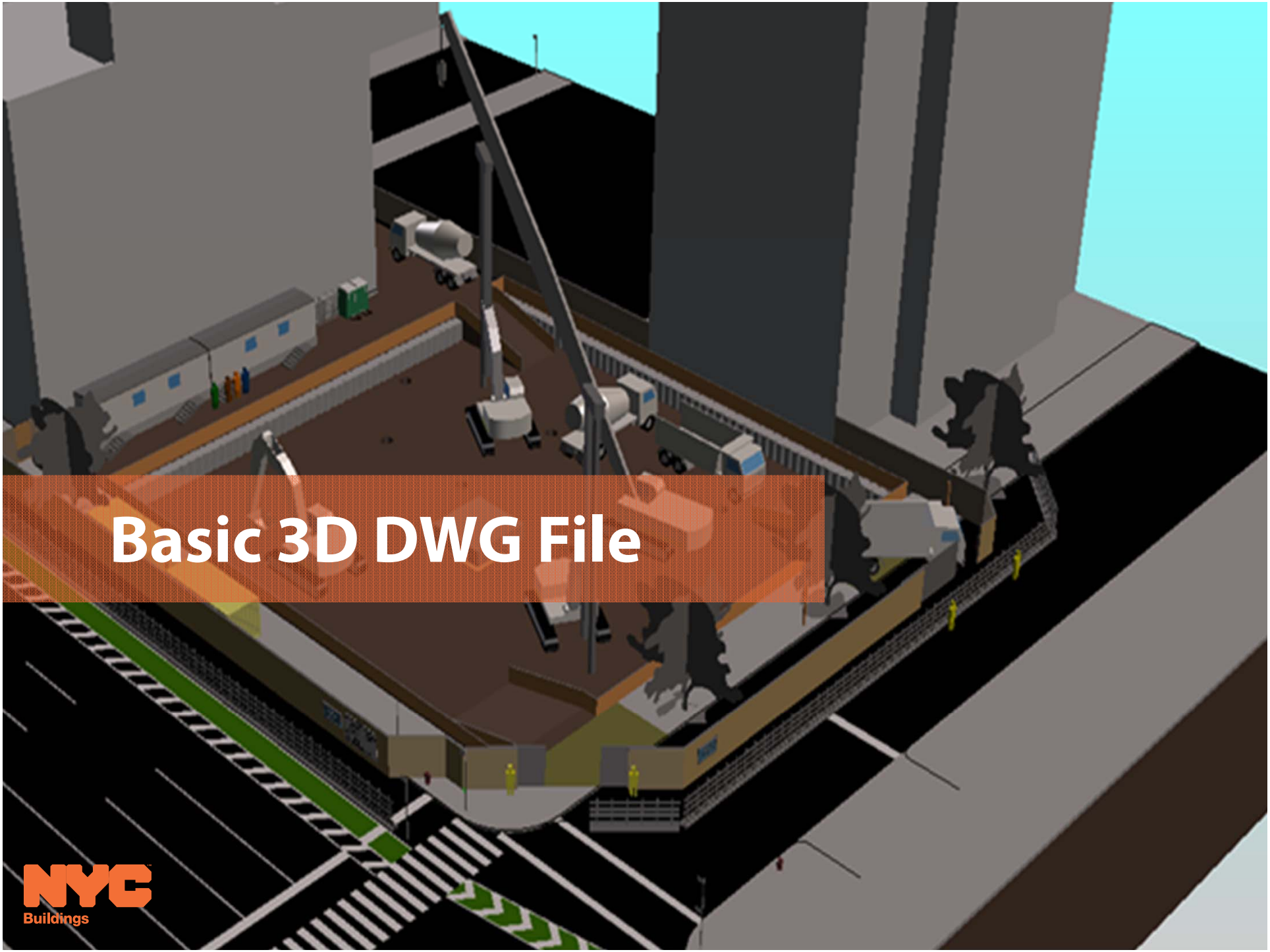
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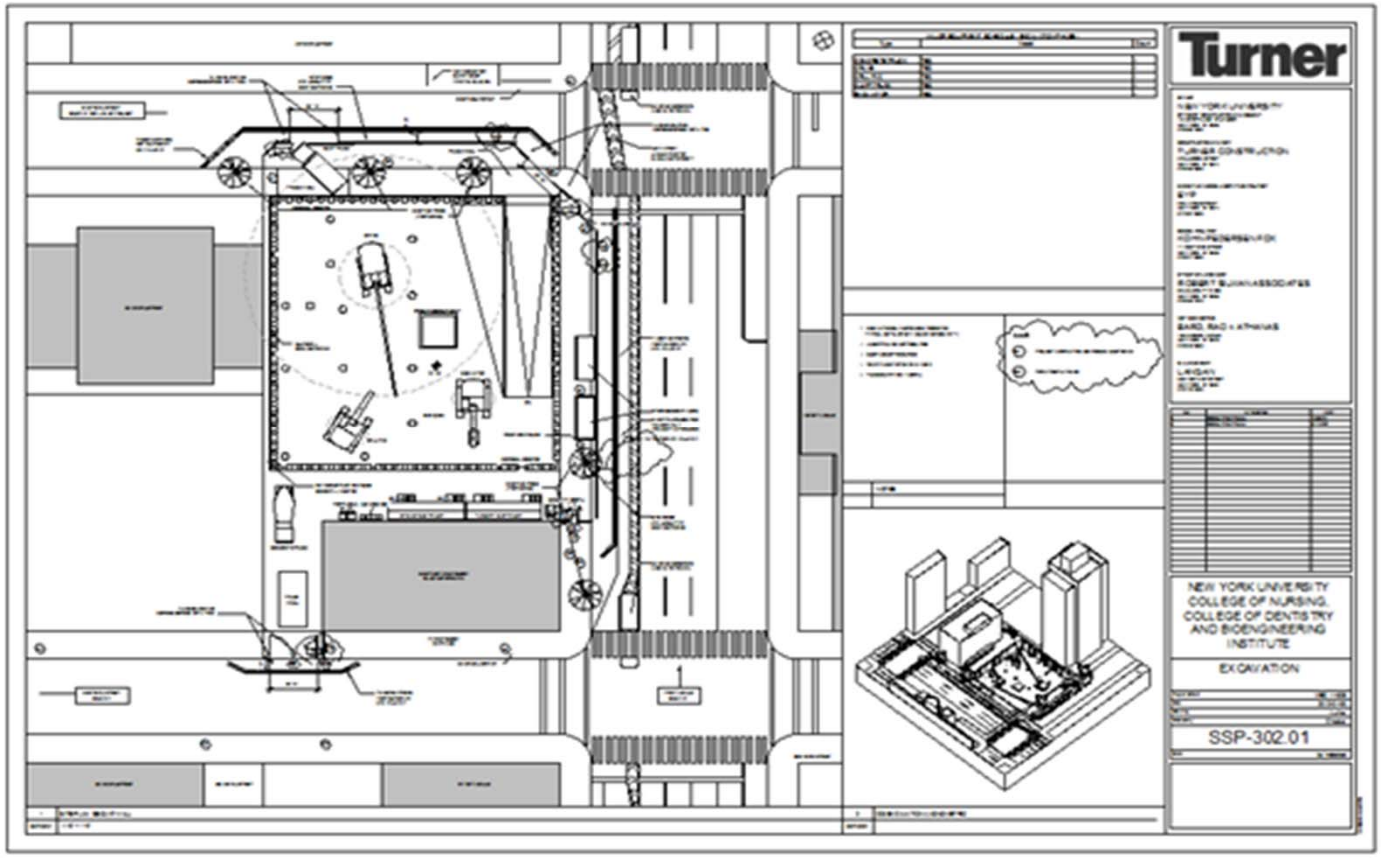
Basic 2D CAD File



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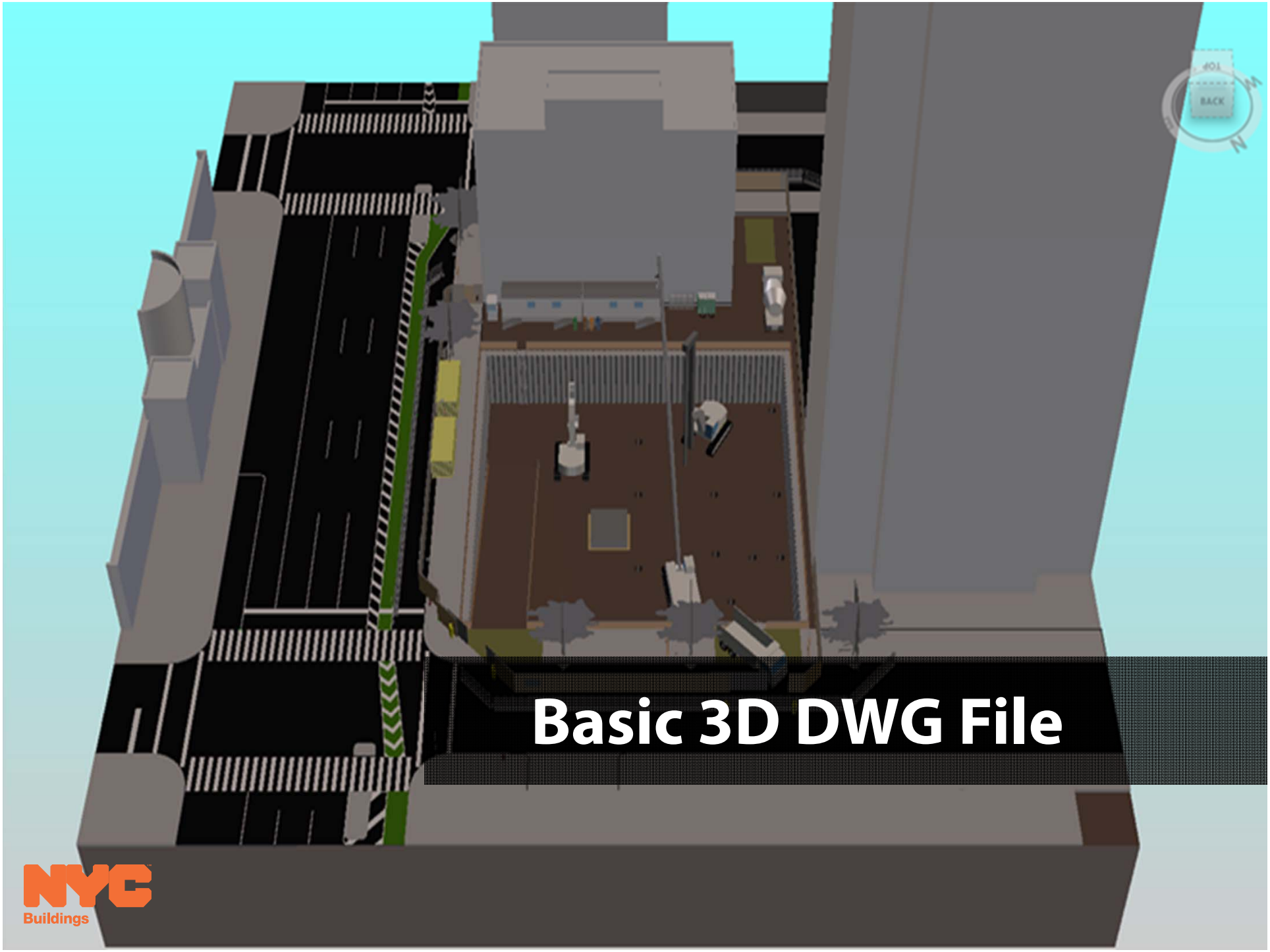
Basic 3D DWG File
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Limitations of 2D Plans vs. 3D Models

Let's look at and discuss some examples

- 2D Submittals done using CAD
- 3D plans in Revit, Navisworks & Auto CAD

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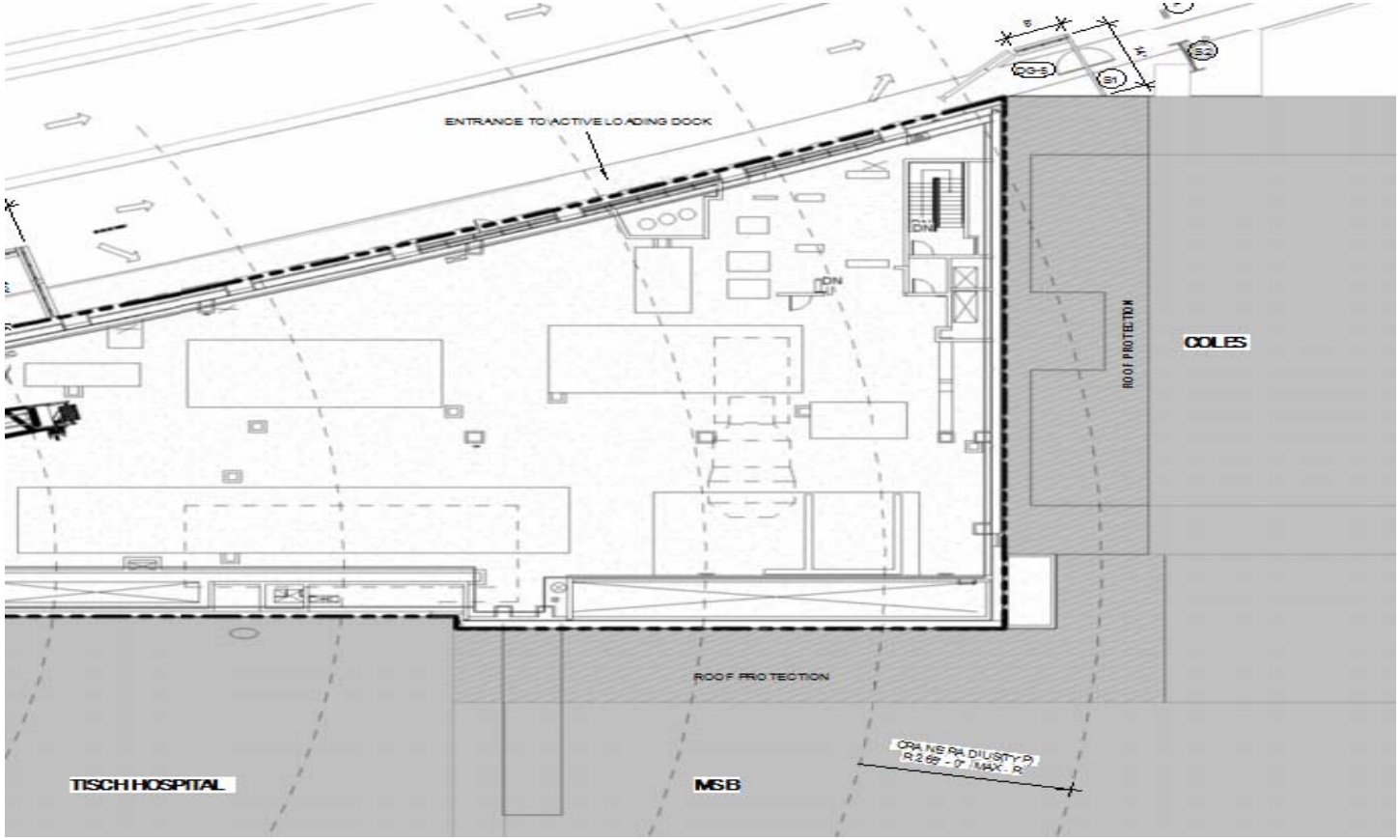
Basic 2D CAD Drawing: Roof Protection



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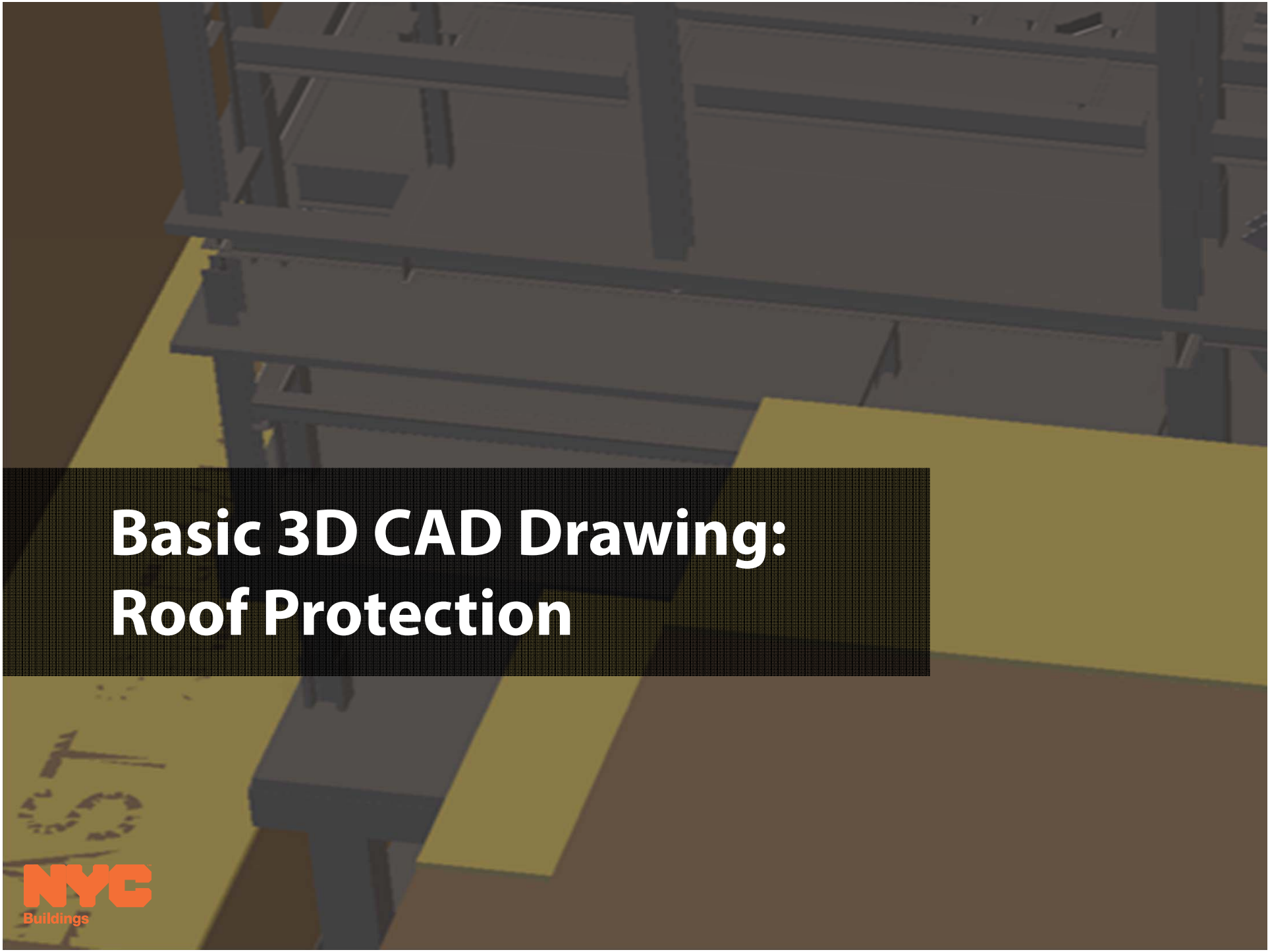

Basic 3D CAD Drawing: Roof Protection

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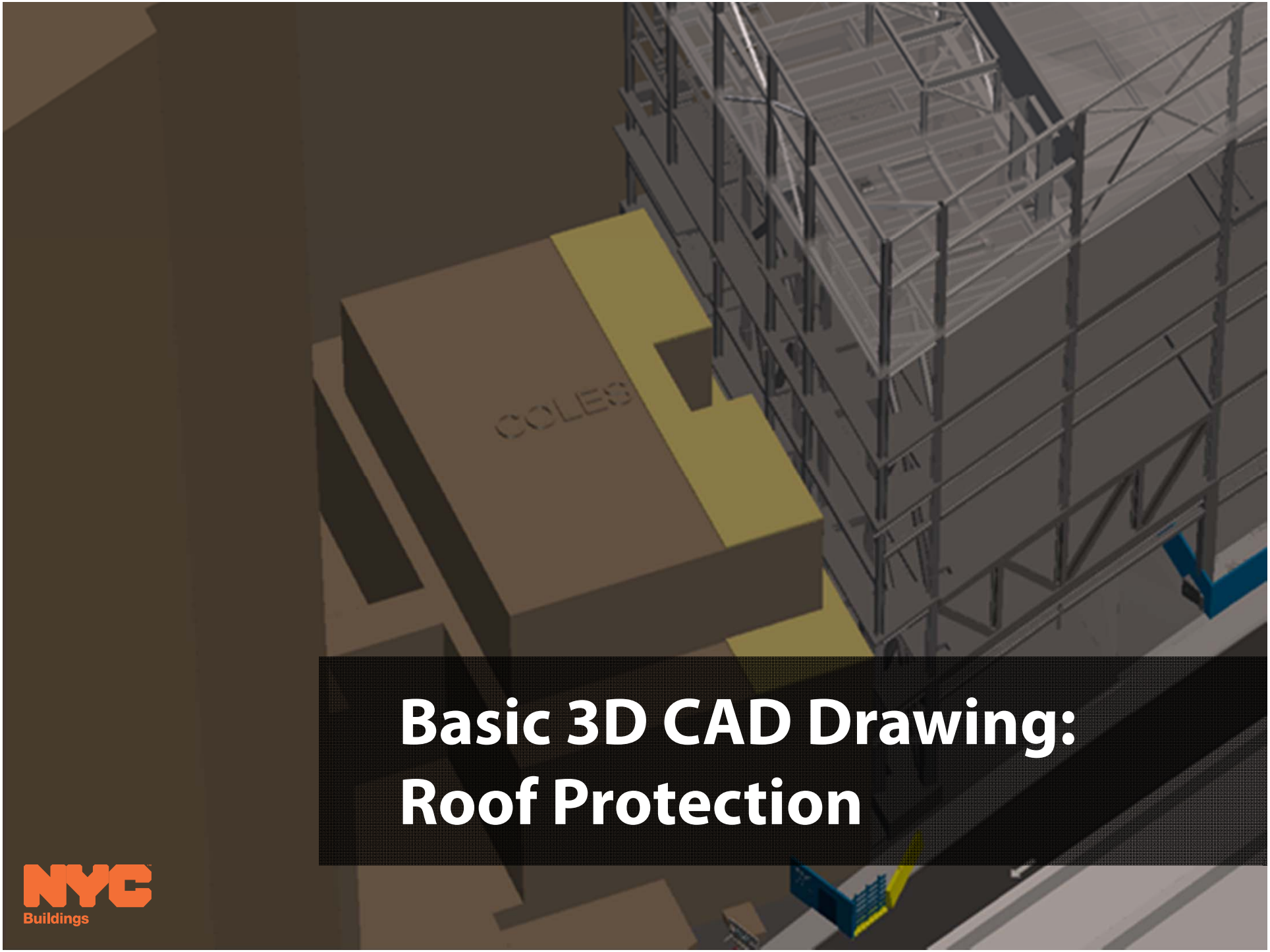

Basic 3D CAD Drawing: Roof Protection

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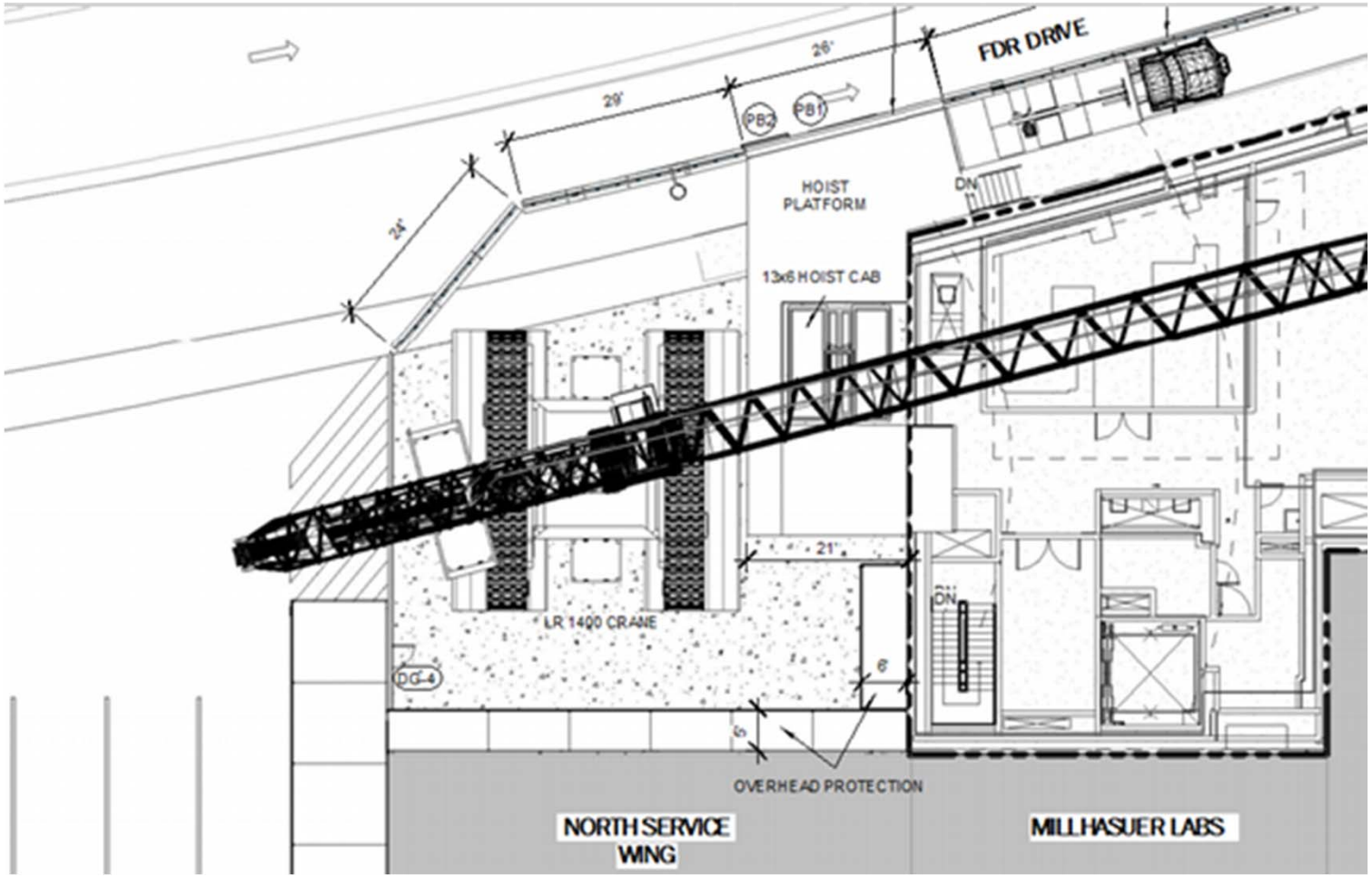
Basic 2D CAD Drawing: Superstructure



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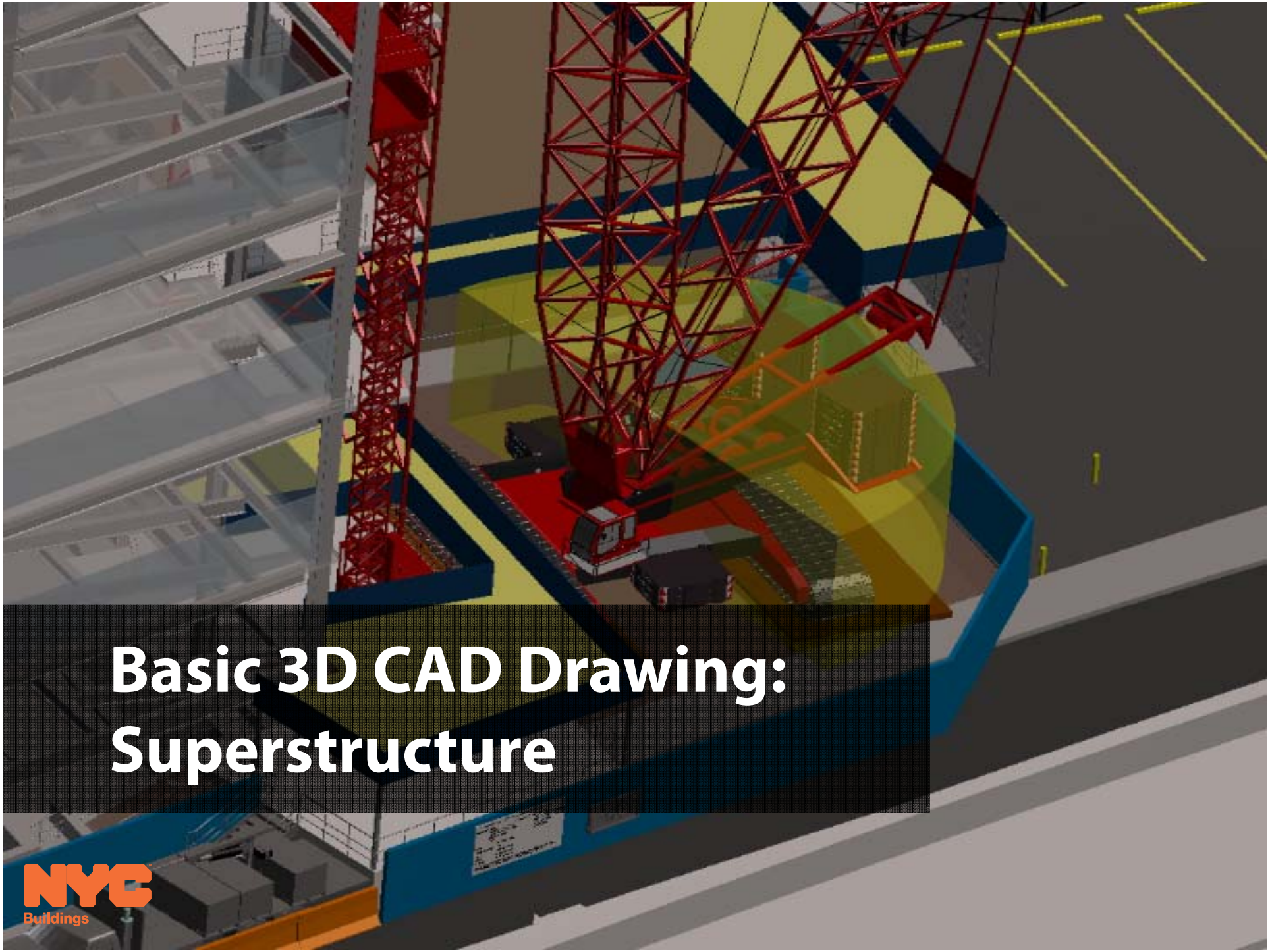

Basic 3D CAD Drawing: Superstructure

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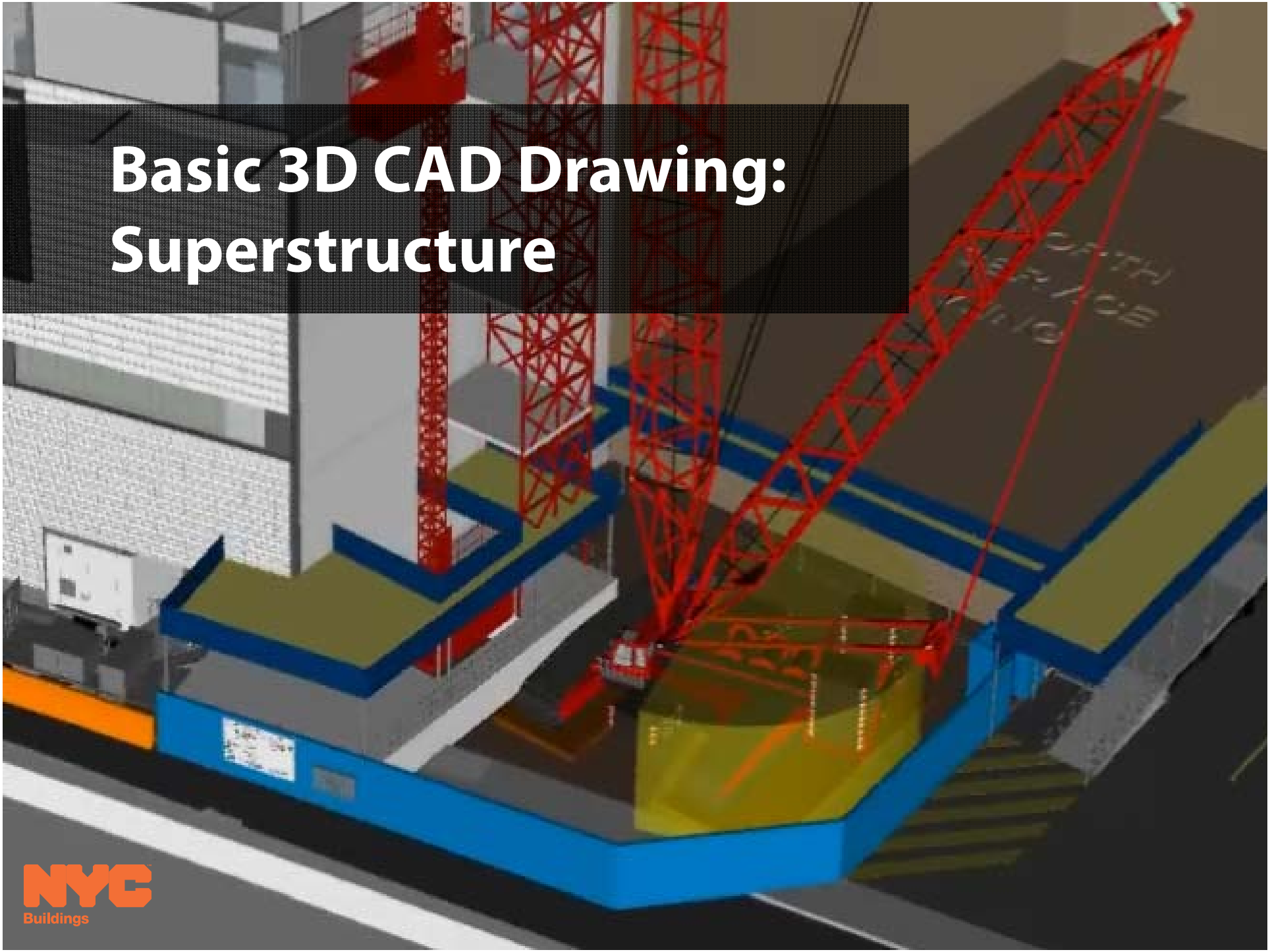
Basic 3D CAD Drawing:
Superstructure
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Using 3D Walkthroughs for Compliance Reviews

3D Perimeter

3D Exterior

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Using 3D Models to Identify Safety Issues

- Edge of the excavation/foundation protection
- Elevation changes and protective measures
- Checking for issues of clearance
- Checking if areas at the perimeter are unprotected

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Excavation & Foundation Protection

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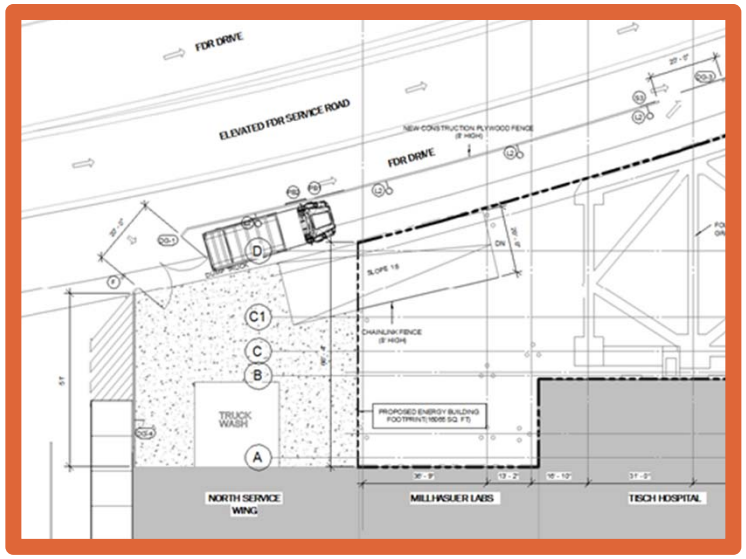
Changes in Elevation



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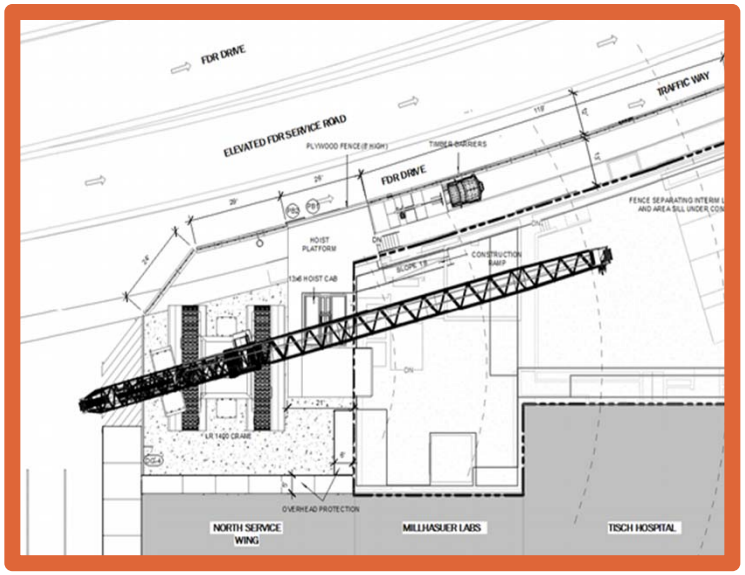
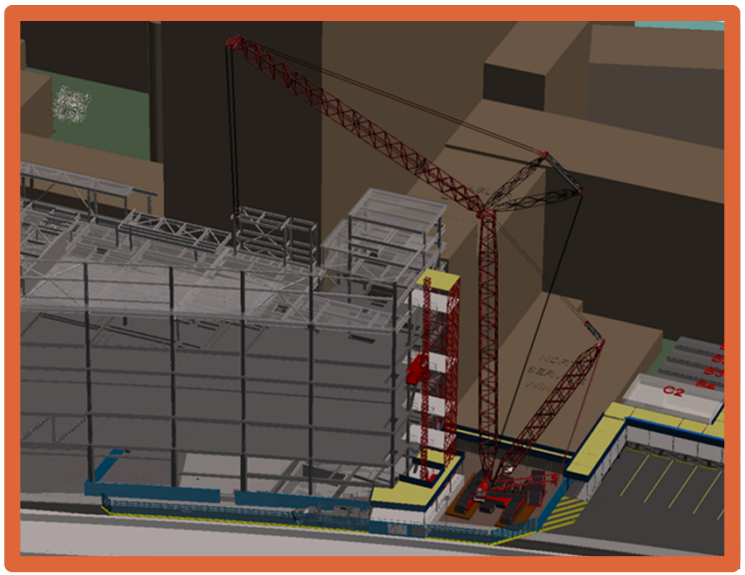
Clearance Issues





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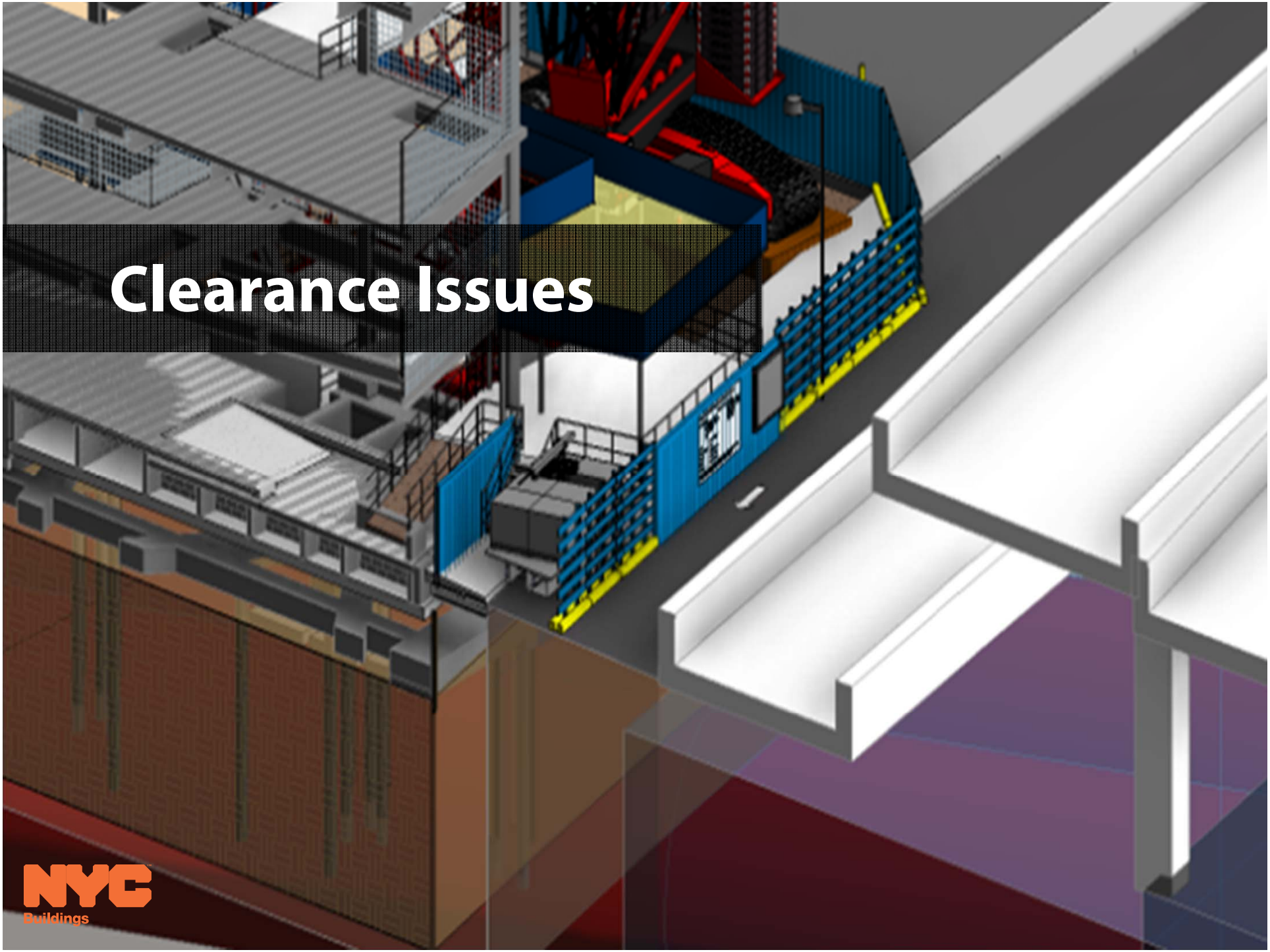
Clearance Issues
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Clearance Issues
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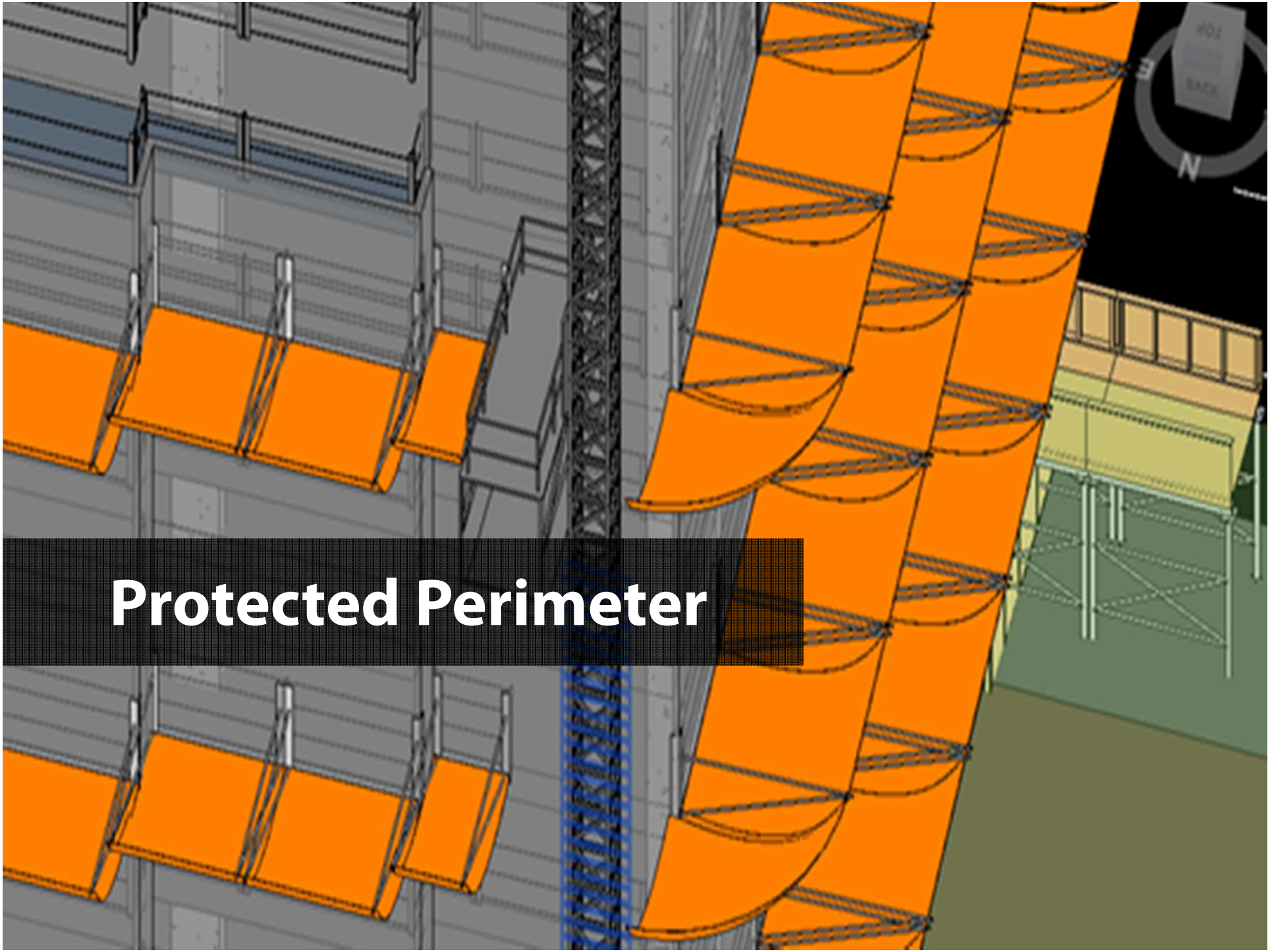
Protected Perimeter


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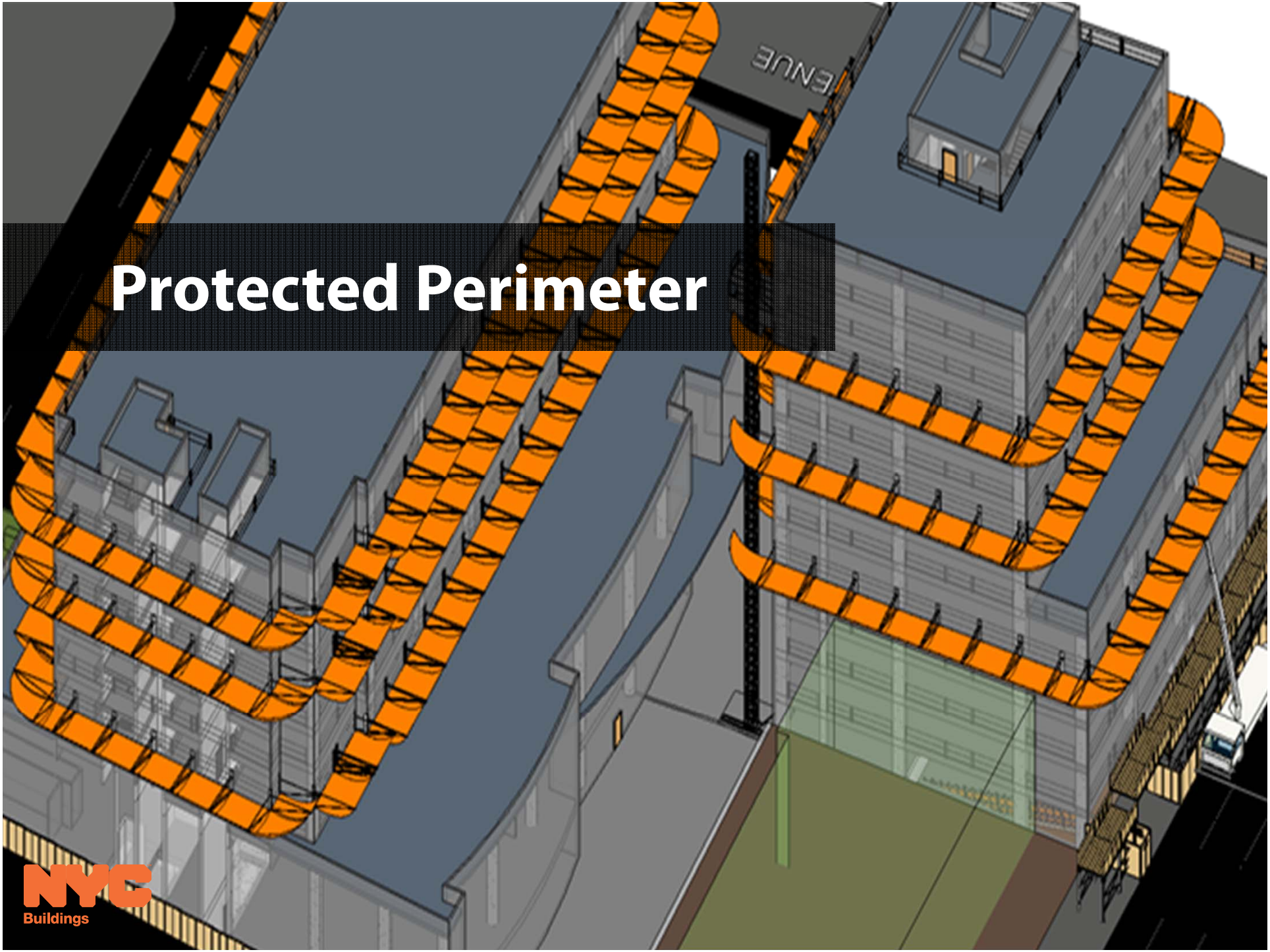
Protected Perimeter
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3D Site Safety Plans: User Guide

- Getting Started
- Registering to Share 3D Site Safety Plans with the Department
- Uploading 3D Site Safety Plan Files
- Sharing Uploaded 3D Site Safety Plans with the Department
- 3D Site Safety Plan Modeling Program Object Naming and Item Detail Requirements
- Technical Considerations
- Contact Information and Troubleshooting

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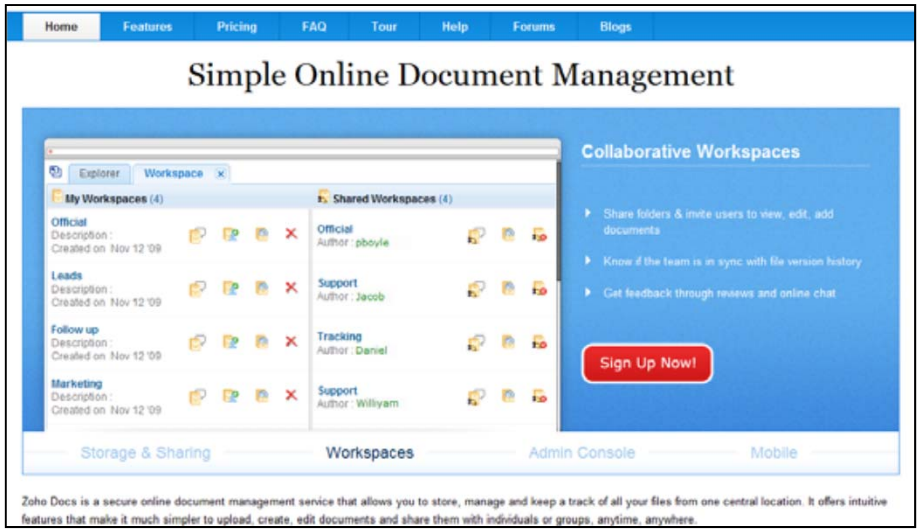
Getting Started

1. Open your desktop web browser and visit http://www.zoho.com/docs

2. Click on "Sign-Up Free" which appears in red text in the top-right portion of the web page



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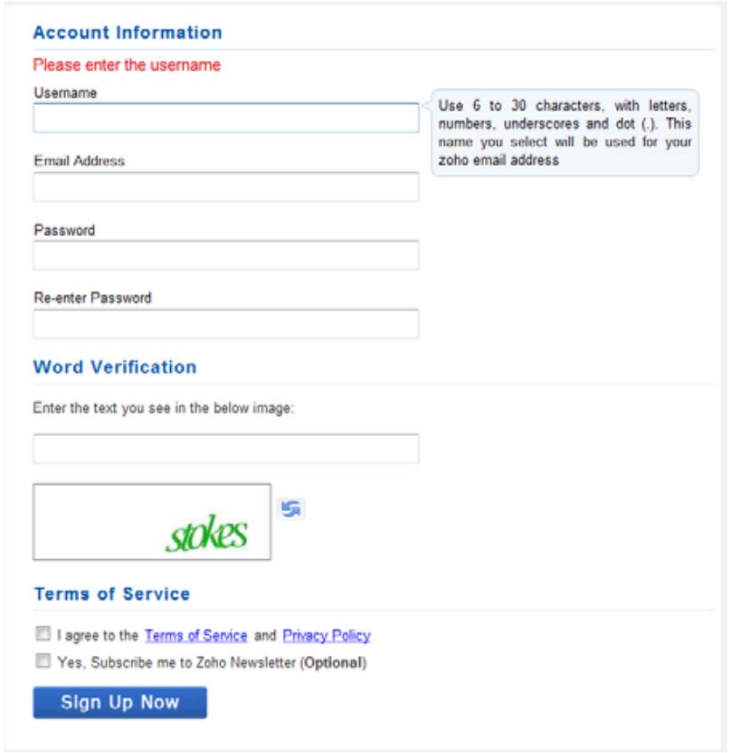
Registering to Share 3D Site Safety Plans

The "Account Information" window should then display. Complete the information requested in the window and click on "Sign-Up Now" to continue



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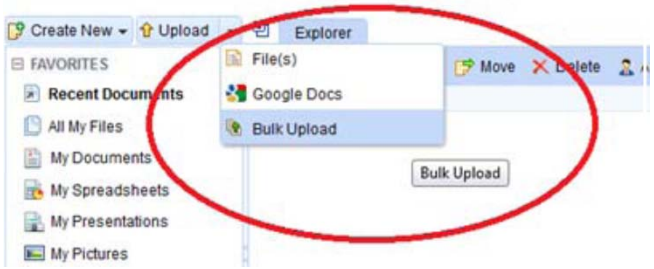
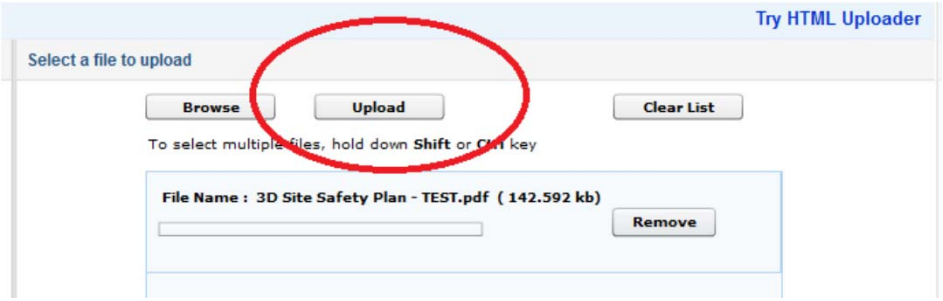
Uploading 3D Site Safety Plan Files

1. Log into your Zoho Docs account

2. Click the down arrow next to "Upload" and select the Bulk Upload



3. Click on "Browse" to find the file on your local computer to upload. Then click on "Upload" when you are ready to upload that file to Zoho Docs.



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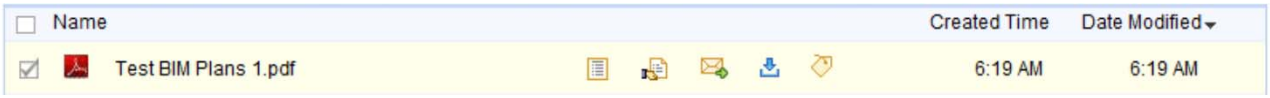
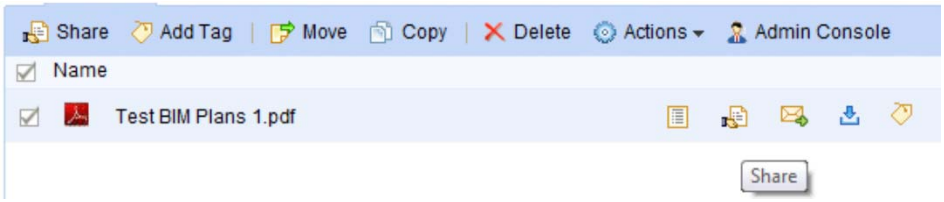
Sharing Uploaded 3D Site Safety Plans with the Department

1. From your Zoho Docs main page, click in the check box next to the file(s) you want to share with/submit to the Department



2. Click on either the "Share" tab at the top of the page or on the share icon that displays to the right of the file you want to share with the Department



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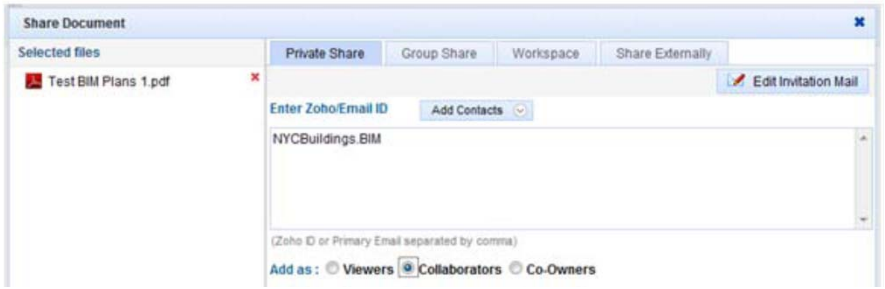
Sharing Uploaded 3D Site Safety Plans with the Department

3. On the "Share Document" screen that appears, enter "NYCBuildings.BIM" under "Enter Zoho/Email ID" and select the "Collaborators" radio button option from "Add as:" on the "Private Share" tab. Once done, click on "Share"



4. If your file was shared successfully with the Department, "Shared Successfully" will appear

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Object Naming & Item Detail Requirements

1. Perimeter Enclosure
2. Street and Sidewalk Information
3. Trucks, Earthmovers, Mobile Cranes
4. Standpipe Riser
5. Vertical Netting & Guardrails
6. Temporary & Permanent Stair and Egress
7. Fire Extinguishers
8. Shoring/Underpinning
9. Ramps
10. Project Board
11. Permit Board
12. Owner
13. Contractor
14. Construction Superintendent/ Project Executive
15. Site Safety Coordinator/Manager
16. Concrete Safety Manager
17. Construction Site Fire Safety Manager
18. Flag Persons

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Technical Considerations

- Web Browsers – Zoho Docs supports the current versions of popular web browsers such as Internet Explorer, Firefox, and Safari

- Firewalls – the Zoho service is designed to work automatically with most firewalls as long as the end user has internet access

- File Size Limitations – 50 MB is the maximum file size supported by the Zoho Docs "Bulk Upload"

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Contact Information & Troubleshooting

- For issues related to registering your account on ZOHO or with uploading / accessing your 3D Site Safety

- Plan files to your ZOHO account, contact ZOHO Doc support directly at:

  http://www.zoho.com/docs/zoho-docs-overview.html

- For additional information or to ask questions regarding the Department's 3D Site Safety Plans Program, please contact BIM@buildings.nyc.gov

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Electronic Objection

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THE CITY OF NEW YORK
DEPARTMENT OF BUILDINGS
www.nyc.gov/buildings

MANHATTAN (1) 280 BROADWAY 3RD FLOOR New York, NY 10007 | BRONX (2) 1932 ARTHUR AVENUE BRONX, NY 10457 | BROOKLYN (3) 210 JORALEMON STREET BROOKLYN, NY 11201 | QUEENS (4) 120-55 QUEENS BLVD. QUEENS, NY 11424 | STATEN ISLAND (5) BORO HALL- ST. GEORGE STATEN ISLAND, NY 10301

DOB Application #	Examiner: John Chiusano, R.A.	Date: 1/5/2011
402191702 402191711	Application Type: NB	Doc (s):
	Address / Location: 40-22 Collage point Blvd	Block: 5066
	Zoning District: C4-2 General Commerical District	Lot: 1

Examiner's Signature:

To discuss and resolve these objections, please call 212-227-8133 to schedule an appointment with the Plan Examiner listed above. You will need the application number and document number found at the top of this objection sheet. To make the best possible use of the plan examiners and your time, please make sure you are prepared to discuss and resolve these objections before arriving for your scheduled plan exam appointment.

Obj. #	Doc #	Section of Code	Objections	Date Resolved	Comments
1.		Sht. 002.08	1. Provide the location of all exist in the location of the glass canopy. 2. Proved a description on how the glass will be installed 3. Provide all necessary plans, section and elevations to show the work in this location. 4. For the crane picking of the coolers what safety protection will be in place? 5. Provide the OSHA notes for lifting over an occupied building. 6. Provide the general location for the coolers. 7. Provide all necessary plans, section and elevations to show the work in this location.		
2.			Provide a tenant protection plan for all work.		

*** Please submit this objection form and disapproved drawing copy along with re-submission

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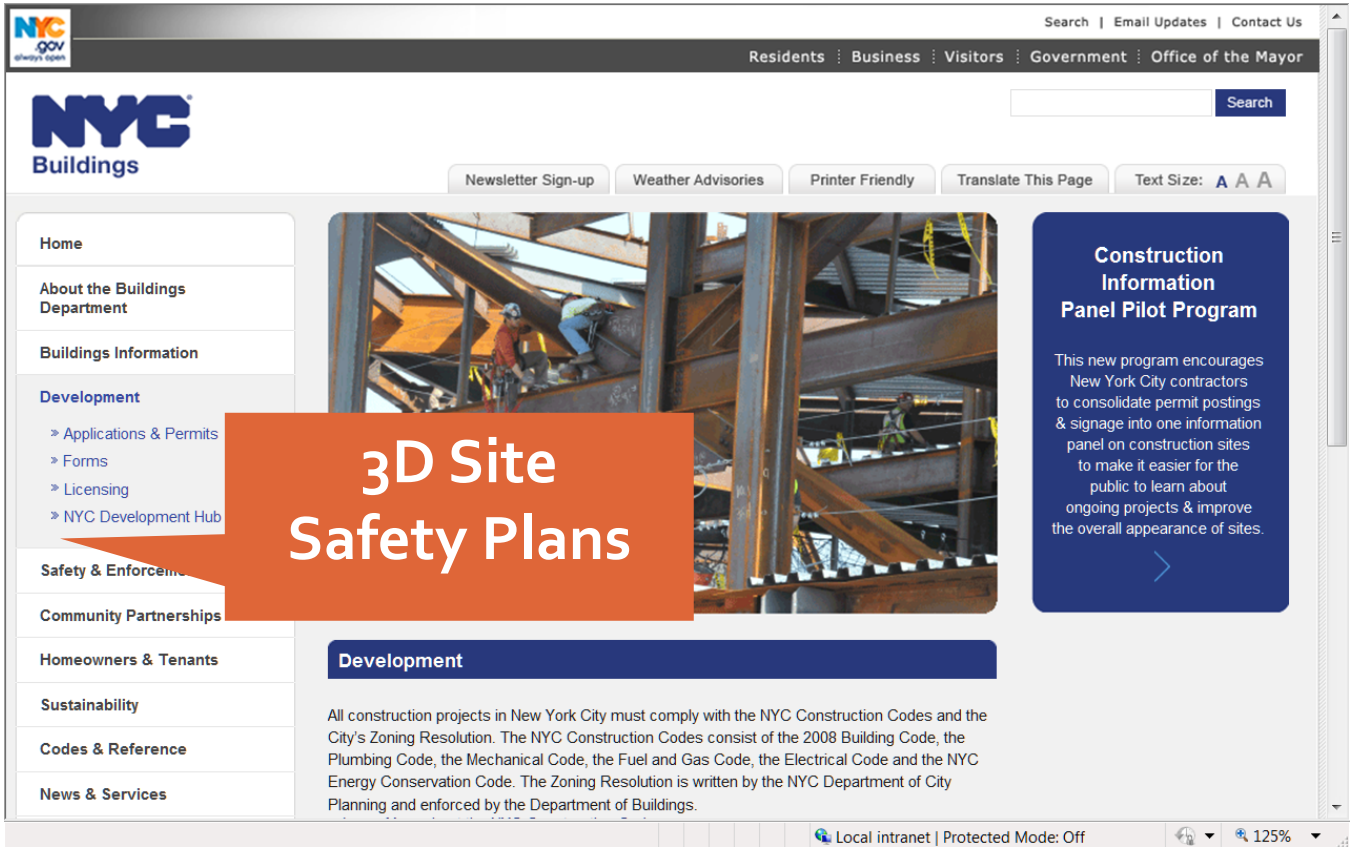
Where to Begin



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Questions?

This concludes the American Institute of Architects
Continuing Education Systems Course

NYC Department of Buildings
Buildings University
AIA Point of Contact:
Allison Ginsburg
allisongo@buildings.nyc.gov
212-566-4415

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