

2021



“Embracing innovative energy
Saving technologies towards
Innovative, sustainable
Engineering solutions...”

TWIG® CONSULTING | DESIGN BRANCH

TWIG® CADD CONSULTING BRANCH

TWIG® SPECIAL INSPECTIONS BRANCH

TWIG® ENERGY | SUSTAINABILITY BRANCH

TWIG® COMMISSIONING BRANCH

TWIG® UNIFIED COMMUNICATIONS ARCHITECTURE & SERVICES BRANCH

ABOUT US

The Wall Consulting Group, Inc. (TWIG®) is the parent company of our engineering Consulting and Design branch, our Energy and Sustainable branch, our CADD branch, our Special Inspections branch, our Telecom branch and our Project Management branch which all provide specialized, multi-disciplinary consulting services for clients nationwide.

TWIG® provides specialized consulting and design, energy/sustainability, CADD and special inspections consulting services for clients nationwide. Using a high performance approach, combined with a diverse portfolio of project experience, we are able to help drive your business' success in a challenging economy. With a growing staff of consultants, we also provide a local presence and regional knowledge.

TWIG® is based on the ideas of a talented group of engineering professionals and consultants that have many diversified years of experience.

TWIG® is committed to offering our clients state-of-the-art industry knowledge with honest efficiency, beneficial advice and proficient service. Our staff has consulting engineering design, energy/sustainability design, computer aided design (CAD) and special inspections consulting experience within many industries of the construction realm.

TWIG® Is Licensed to Operate in the Following States:

Alabama | Alaska | Arkansas | Arizona | California | Connecticut | Colorado | Delaware |
District of Columbia (Washington, D.C.) | Florida | Georgia | Hawaii | Idaho | Illinois | Indiana | Iowa | Kansas
Kentucky | Louisiana | Maine | Maryland | Massachusetts | Michigan | Minnesota | Mississippi | Missouri | Montana |
Nebraska | Nevada | New Hampshire | New Jersey | **New York** | North Carolina | North Dakota | Ohio |
Oklahoma | Oregon | Pennsylvania | Puerto Rico | Rhode Island | South Carolina | South Dakota | Tennessee | Texas Utah |
Vermont | Virginia | Washington | West Virginia | Wisconsin | Wyoming



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CONSULTING | DESIGN BRANCH

TWIG® Consulting Engineers, P.C., is a full-service consulting, engineering and design group, headquartered in New York City, New York. We serve municipalities, government agencies, and private clients in the Tri-State/New York Metropolitan Area as a one-stop source for all their engineering and professional service's needs.

TWIG® Consulting Engineers, P.C., specializes in Mechanical (HVAC), Electrical, Plumbing, Fire Protection (Sprinkler), Fire Alarm (Life Safety) and Systems Commissioning Design/Consulting.

TWIG® Consulting Engineers, P.C., was established with a commitment to quality consulting engineering and sustainable ("green") design by working closely with our clients, listening to their needs and meeting budgetary goals.

Our Consulting | Design Services Include:

MECHANICAL/HEATING VENTILATION & AIR CONDITIONING (HVAC)

- Heating Systems
- Ventilation Systems
- Air Conditioning Systems
- Central Plants Systems
- Steam Stations
- Air Handling and Distribution Systems
- Fluid Handling and Distribution Systems
- Computer Room/Data Center Design
- Fuel Storage and Distribution Systems
- NYC Special Inspections

ELECTRICAL

- Electrical Power Distribution
- Lighting & Receptacles
- Sub-Metering Systems
- Fire Alarm Systems
- Emergency Power and Lighting
- Voice/Data Cabling Systems
- Cable Management
- Uninterruptable Power Supply
- Emergency Generator Systems
- NYC Special Inspections

FIRE PROTECTION/SPRINKLER

- Wet Sprinkler Systems
- Dry-pipe and Pre-Action Systems
- Smoke Detection and Alarms
- Gaseous Suppression Systems
- Dry and Wet Chemical Extinguishing Systems
- Fire Extinguishing/Fighting Equipment
- Fire, Safety, Engineering & Design
- International Fire Standards
- Fire Detection & Alarm Systems
- NYC Special Inspections

PLUMBING

- Hot and Cold Potable Water Systems
- Storm Drainage Systems
- Sanitary and Waste Systems
- Backflow Prevention Systems
- Gas Distribution Systems
- Compressed Air Systems
- NYC Special Inspections



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TWIG SIA: A CLASS 1 NYC SPECIAL INSPECTION AGENCY BRANCH

TWIG® Special Inspection Agency (TWIG® SIA) provides Special Inspection services as per the New York City Construction Codes where Special Inspections have replaced Controlled Inspections for all construction projects currently filed with the New York City Department of Buildings.

TWIG® SIA ensures that Special Inspections are conducted during the construction process to verify that work is being done in accordance to approved plans and specification. Special inspections must be performed by Special Inspectors on behalf of **TWIG® SIA**.

Special Inspections are similar in scope to Controlled Inspections, with a number of additions, and they are defined in Chapter 17 of the 2008 Building Code and the Department Special Inspections Rule.

Our Special Inspections Services Include:

<p>General Building Construction Special Inspections</p> <ul style="list-style-type: none"> Chimneys (BC.1704.26) Luminous Egress Path Markings (BC.1704.30 BC1024.8) Excavation – Sheeting, Shoring and Bracing (BC.1704.20.2) Seismic Isolation Systems (BC.1707.8) Flood Zone Compliance (BC.1704.29 BC. G105) Soil Percolation Test-Individual On-Site Private Sewage Disposal (Septic) (BC.1704.22) Masonry (BC.1704.5) Wood – Installation of High Load Diaphragms (BC.1704.6.1) Wood – Installation of Metal-Plate Connected Trusses (BC.1704.6.2) Wood - Installation of Prefabricated I-Joists (BC.1704.6.3) Subgrade Insp./Soils-Site Prep (BC.170.7.1) Wall Panels, Curtain Wall and Veneers (BC.1704.10) 	<p>Fire Protection Systems Fire Resistant Construction</p> <ul style="list-style-type: none"> Smoke Control System (BC.1704.15) Sprinkler Systems (BC.1704.23) Standpipe Systems (BC.1704.24) Emergency & Standby Power Systems (Generators) (BC.1704.13 2702) Fire-Resistant Penetrations and Joints (Firestop) (BC.1704.27) Sprayed Fire-Resistant Materials (BC.1704.11) Mastic and Intumescent Fire-Resistant Coatings (BC.1704.12)
<p>Plumbing and Mechanical Systems Special Inspections</p> <ul style="list-style-type: none"> Mechanical Systems (BC.1704.16) Fuel Oil Storage and Piping Systems (BC.1704.17) Heating Systems (BC.1704.25) On-Site Storm Water Drain Disp./Detent Install (Drywell) (BC.1704.21.2) Mechanical Demolition (BC.1704.20.4) High-Pressure Steam Piping (Welding) (BC.1704.18) Fuel-Gas Piping (Welding) (BC.1704.19) 	<p>Civil Special Inspections</p> <ul style="list-style-type: none"> Underpinning (BC.1704.20.3 BC1814) <p>Structural Special Inspections</p> <ul style="list-style-type: none"> Post Installed Anchors (BC.1704.32) Exterior Insulation and Finish Systems (EIFS) (BC.1704.13) Structural Stability – Existing Buildings (BC.1704.20.1) <p>Energy Code Compliance Special Inspection</p> <ul style="list-style-type: none"> Progress Inspections (BC.104.1)



NYC SPECIAL INSPECTIONS BRANCH (NON-DESTRUCTIVE TESTING)



TWIG SIA Building Diagnostics is a full service non-destructive testing and is a specialty branch of the TWIG Special Inspection Agency (TWIG SIA).

Our mission is to provide our clients with comprehensive, unbiased, scientifically based information/analysis in order to obtain the desired results within best interest of the project.

Our staff is comprised of dedicated and seasoned professionals of the construction, engineering and scientific trades.

Attention to detail is what differentiates TWIG SIA Building Diagnostics from similar companies that provide similar type services and our boutique environment allows us to focus on the quality of our reporting rather than quantity.

Our Special Inspections Services Include:

<p>Environmental Inspections</p> <ul style="list-style-type: none"> Indoor Air Quality Fire Flood Rehab Assessment Underground Storage Tank Phase I & II Environmental Site Assessments 	<p>Specialty Services</p> <ul style="list-style-type: none"> Ground Penetrating Radar Infrared Diagnostics Survey Blower Door Testing Ultrasonic Testing Vibration Analysis Video Pipe Inspections Vector Mapping Building Envelope Diagnostics 	<p>Insurance</p> <ul style="list-style-type: none"> Insurance & Risk Surveys Client Needs Analysis Commercial Quotations Forensic Fire Investigations Pre-loss Surveys
<p>Fire Safety</p> <ul style="list-style-type: none"> Fire Safety Audits Fire Protection System & Equipment 	<p>Real Estate</p> <ul style="list-style-type: none"> Property Condition Reports Entry Condition Reports Exit Condition Reports Routine Condition Reports Commercial Property Inspections Residential Home Inspections 	<p>Building</p> <ul style="list-style-type: none"> Building Certification Inspections Pre-purchase Building Inspections Handover Inspections Builder Owner Inspections Dilapidation Surveys Defect Inspections Plumbing Certifications Inspections Construction Defect Inspections Backflow Prevention Device Inspections



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PROJECT MANAGEMENT BRANCH

TWIG® Project Management and Development (TWIG® PMD), assumes the role of overall manager of the project and provides the critical leadership necessary for success.

We have established a solid project management and development system, which provides focused project direction and develop disciplined team framework and project vigilance. Our system enables us to deliver the financial security and risk management demanded by our clients. We are ever dedicated to our client's vision of their project and their anticipated ROI, while constantly identifying and mitigating potential risks.

TWIG® Project Management and Development (TWIG® PMD) branch is another specialty division in our emerging group of our construction related services. We provide expert project management and development within the capital markets, private owner/developer and public-private sector.

TWIG's® relationship is exclusive to the owner, board or institution as we act on behalf of the client and within their best interests.

We provide comprehensive Project Management and Development at every stage of the project beginning with the original design concept and project test-fits to completion of construction. We also provide review of risk and asset management for our clients' major capital projects, and successfully meet the client's goals to produce a financially viable project. While our clients gain great benefits from soliciting all of our services, those services are tailored specifically, based on a client's individual needs.

Project Management Services

- Owner's Representation
- Strategic Planning
- Program Management
- Project Management
- Project Development
- Construction Management
- Project Controls
- Technical Services
 - Project Assessment
 - Cost Estimating
 - Design Review
 - Scheduling
- Risk Management Analysis
- Claims Management And Resolution
- Loan Monitoring

Project Due Diligence Services

- Project Performance Reviews
- Preliminary Budget Analysis
- Scope Of Work Definition
- Identification Of Potential Existing Site Conditions
- Mitigation Of Permitting And Environmental Issues

Preconstruction Services

- The Conceptual Design Stage
- The Schematic Design Stage
- The Design Development Stage
- The Construction Documents And Specifications



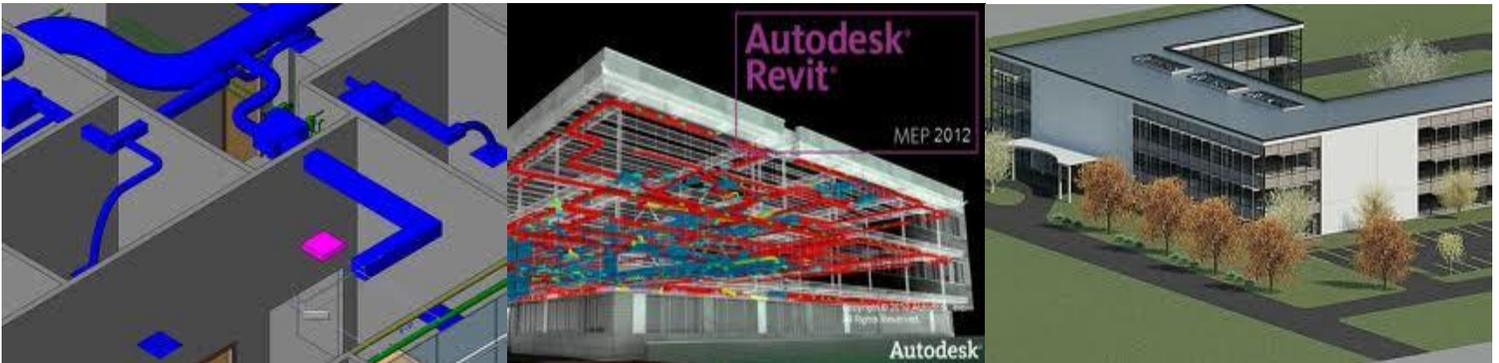
CADD CONSULTING BRANCH

TWIG® CADD Consultants is a secondary branch of our growing groups of service and one the greatest strengths of our firm.

TWIG® CADD Consultants specialize in the conversion of drawings into electronic CAD files. Our Engineering CADD consultants can join a project in progress or see a project through from start to finish. Work is done from our offices (off site) or we can work in your office environment.

Our CADD Consulting Services Include:

- Incorporating redlines into CAD electronic files using Autodesk Revit MEP Building Systems Design Software.
- Drawing Conversions.
- Building Information Modeling (BIM): Development of complete intelligent information systems using DWFs linked to database queries.



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ENERGY | SUSTAINABILITY BRANCH

TWIG® Energy & Sustainability Consultants is a specialized branch of The Wall Consulting Group, Inc. Our consultants and design team members are the technical core of excellent project development and implementation.

TWIG® Energy & Sustainability Consultants is rich in talent and experience; we can take a project from an idea to a workable and buildable design that includes a full spectrum of LEED™ project review and analysis.

TWIG® Energy & Sustainability Consultants has one of the most experienced sustainable design departments in the country. This department provides our clients with LEED™ review and analysis for new and existing facilities. With an intimate knowledge of the ASHRAE standards **TWIG® Energy & Sustainability Consultants** have assisted clients with a variety of building related modifications, and with resolution of LEED™ related issues. In addition **TWIG® Energy & Sustainability Consultants** assists with project design analysis - engineering reviews of HVAC design, analysis and coordination of building loads.

For the Commercial and Residential industry **TWIG® Energy & Sustainability Consultants** have employed and executed several energy system analysis evaluation programs.

Our Energy | Sustainability Consulting Services Include:

- Project Registration
- Credit Interpretations Rulings (CIR)
- Application Filing Process
- Review and Certifications
- Appeals
- LEED Certification Analysis
- Geothermal Heat Pump Systems Design & Analysis
- Renewable Energy Sources Analysis
- Indoor Air Quality Analysis
- Integrated Architectural and Engineering Systems Analysis
- High Efficiency MEP Design Analysis
- Commissioning Review and Analysis
- DOE-2 Building Simulation and Energy Analysis
- Energy Pro™ Building Simulation and Energy Analysis
- Cogeneration Systems Design
- Solar Photovoltaic Energy Systems Design
- Water Energy System Design
- Solar Heating (hot-water, space heating, pool heaters) System Design and Engineering Systems Analysis



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PROJECT MANAGEMENT BRANCH

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We provide comprehensive Project Management and Development at every stage of the project beginning with the original design concept and project test-fits to completion of construction. We also provide review of risk and asset management for our clients’ major capital projects, and successfully meet the client’s goals to produce a financially viable project. While our clients gain great benefits from soliciting all of our services, those services are tailored specifically, based on a client’s individual needs.

Project Management Services	Project Due Diligence Services	Preconstruction Services
<ul style="list-style-type: none"> • Owner’s Representation • Strategic Planning • Program Management • Project Management • Project Development • Construction Management • Project Controls • Technical Services <ul style="list-style-type: none"> • Project Assessment • Cost Estimating • Design Review • Scheduling • Risk Management Analysis • Claims Management And Resolution • Loan Monitoring 	<ul style="list-style-type: none"> • Project Performance Reviews • Preliminary Budget Analysis • Scope Of Work Definition • Identification Of Potential Existing Site Conditions • Mitigation Of Permitting And Environmental Issues 	<ul style="list-style-type: none"> • The Conceptual Design Stage • The Schematic Design Stage • The Design Development Stage • The Construction Documents And Specifications



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TWIG® COMMISSIONING (TWIG® Cx) BRANCH

Working in tandem with the engineering design team since 2007, **TWIG® Commissioning (TWIG® Cx)**, provides professional Commissioning Services.

TWIG® Cx, team has comprehensive engineering knowledge and field expertise, which have been enhanced by its experience with specialized facilities, and has intimate knowledge of the following systems:



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Commissioned Systems

- Building Commissioning:**
 HVAC Systems, Central Plants, Chilled Water, Heating Water, Steam, Ice Storage, Humidification, Geothermal Heat Pump, Electrical Systems, Lighting Control, Emergency Power, Photovoltaic, Utility Metering, Thermo-graphic Survey, Building Controls, Systems Integration, Building Envelope
- Life Safety Systems Commissioning:**
 Smoke Control, Fire Alarm Systems, Fire Protection, Mass Notification
- Specialty System Commissioning:**
 Laboratory Air/Exhaust, Medical Gas, Vacuum Processed Cooling, Water, Toxic Gas, Compressed Air, Security, MATV/CCTV, Public Address
- LEED Commissioning:**
 NC (New Construction), Schools/Healthcare/retail/Homes, CS (Core Shell), CI (Commercial Interior), EB (Existing Building)
- Project Types:**
 - Mission-Critical Facilities, Financial Services, Corporate Headquarters, Educational Facilities, Museums and Galleries, Hospitality/Hotels, Residential Buildings, Commercial Office Buildings, Healthcare Facilities, Laboratory Facilities

Commissioning Team Building

The commissioning process is a collaborative effort that requires planning and participation by all project team members. TWIG COMMISSIONING's approach promotes a cooperative effort by asking each team member for their involvement and input throughout the design, construction, acceptance, and occupancy phases of the project. Early in the process, a project commissioning plan is developed that clearly describes team member roles and responsibilities. The plan is reviewed and completed with input from all team members. Through team building, TWIG COMMISSIONING avoids creating an adversarial and confrontational environment that could potentially compromise the success and quality of the commissioning process.

Concurrent Component Commissioning

TWIG® Commissioning (TWIG® Cx), actively participates in performance testing the building systems concurrently with construction, not after all the contractors are finished. The commissioning is performed as portions of the systems become available. As deficiencies are found, the contractor's workforce is there, mobilized, and prepared to resolve issues quickly with less defensive posturing or delay to remobilize their crew. The concurrent component level testing process ensures that the commissioning process will be complete when the building is complete, rather than months after.

Component testing of a system is comprised of systematic, individual subsystem tests of each element of that system. Each subsystem component test carries equal importance and is intended to be executed independently. System performance verification is achieved once all of the component level tests for that system are successfully completed. This methodology effectively reduces the time spent on a "final system performance test" because a majority of the verification has already been witnessed during start-up and component level testing.

TWIG® Commissioning (TWIG® Cx), promotes concurrent component commissioning by providing support to all of the contractors, owners, engineers, and architects during each phase of the project. This strategy effectively reduces their time spent on the commissioning process by allowing commissioning items to be identified earlier and addressed while the resources are available and involved in that stage of the project.



Retro-Commissioning:

Most Building and Energy Codes require some large buildings to undergo the commissioning process for the property's existing systems. This process is known as Retro-Commissioning and is required for buildings greater than 50,000 square feet under Local Law 87 (LL87).

Retro-Commissioning is similar to ECC Commissioning, only it is specific to existing systems and requires reporting and general consulting in place of requirements for corrective actions standard to the commissioning process. The requirements for Retro-Commissioning are generally identified when building owners submit annual reports under Local Law 84 (LL84) for energy benchmarking audits.

Buildings that do not comply with the energy audits and retro-commissioning specified in LL84 and LL87 are subject to violations and fines from the NYC Department of Buildings.

In our experience, older facilities don't have to miss out on the efficiencies and savings that benefit new construction. We can help you improve your building systems' performance without investing in a new location by retro-commissioning your existing facility.

Retro-commissioning involves applying the commissioning process to an existing facility that was not previously commissioned. It encompasses evaluating, testing, adjusting and correcting building systems so that energy and resources are conserved, comfort is improved, productivity is maximized, and operations and maintenance procedures are enhanced to meet all of the owner's current facility requirements.

Our commissioning team has optimized the building system performance and energy use of more than 25-million square feet of problematic building space through retro-commissioning.

Our experience in the planning, design, construction and operation of a wide range of facilities means we have an integrated understanding of building systems and can help find the most significant and cost-effective improvement opportunities.

Utility Costs and Beyond:

Retro-commissioning your building can save you from 11 cents to 72 cents per square foot in energy savings alone, with potential for an additional 10 cents to 45 cents per square foot from other sources. That adds up quickly in a 100,000-square-foot manufacturing facility. The payback period for a retro-commissioning process can be as little as two and half years.

A retro-commissioned property also can add value beyond its efficiency measures. Buildings that have been retro-commissioned can be more comfortable and retain occupants better. They can also better support increased worker productivity.



OVERVIEW

Our goal at **TWIG**[®] is to offer our clients dedicated quality service with a high level of personal detail, attention and advice towards sustainable and energy efficient design. **TWIG**[®] has a combination of four (4) core branches and affiliated partners which are:

Core Branches:

- Consulting | Design Branch - **TWIG**[®] Consulting Engineers, P.C.
- Energy | Sustainability Branch - **TWIG**[®] Energy | Sustainability Consultants
- CADD Consulting Branch - **TWIG**[®] CADD Consultants
- NYC Special Inspections Branch - **TWIG**[®] Special Inspection Agency
- Project Management Branch **TWIG**[®] PMD

TWIG[®] continually strives to portray the honorable characteristics of integrity, reliability, quality, and responsiveness that exceed the needs of our clients, resulting in the formation of meaningful long-term business relationships.

TWIG[®] is a participating member of the U.S. Green Building Council (USGBC[™]), we strongly encourage sustainable and energy efficient design in the building industry through our qualified staff of trained LEED Accredited Professionals in Leadership in Energy and Environmental Design (LEED[™]) criteria.



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CONNECT WITH THE TWIG® TEAM

We invite you to contact us with comments or questions about the markets we serve or the services we provide to our clients. [Visit our Job Postings site](#) or [Careers site](#) for information on our employment application process; if your question is not answered please use the form to submit your inquiry.



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PERSPECTIVE...

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Hours

Monday – Friday: 9:00am – 5:00pm



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