STRUCTURAL PEER REVIEW STATEMENT

This structural peer review and report is complete for the ~~whole building, or~~ Foundation Package.
For phase ____ of ____ phased submissions

Structural peer reviewer name: Ramon Gilsanz

Structural peer reviewer address: GPS. 129 West 27th St. NY NY 10001

Project address: 250 South Street, NY NY

Department application number for structural work:

121185528

Structural Peer Reviewer Statement

I (insert name) Ramon Gilsanz ***am a qualified and independent NYS licensed and registered engineer in accordance with BC Section 1627.4, and I have reviewed the structural plans, specifications, and supplemental reports for (Insert address and DOB application # for structural work)*** 250 South Street, #121185528 ***and found that the structural design shown on the plans and specifications generally conforms to the foundation and structural requirements of Title 28 of the Administrative Code and the 2008 NYC Construction Codes. The Structural Peer Review Report is attached.***

New York State Registered Design Professional
(for Structural Peer Review only)

Name (please print) Ramon Gilsanz

Signature _____ Date 10 Sept 2014

PE/RA Seal (apply seal, then sign and date over seal)

STATE OF NEW YORK RAMON GILSANZ No. 063241 PROFESSIONAL ENGINEER

cc: Project Owner
Project Registered Design Professional

GILSANZ . MURRAY . STEFICEK . LLP

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September 9, 2014

Raizy Haas
Extell Development Company
805 Third Avenue, 7th Floor
New York, NY 10022

Re: 250 South Street, New York, NY
Independent Structural Engineering Foundation Review
GMS Project Number 14299

Dear Ms. Haas,

As per your request, Gilsanz Murray Steficek LLP conducted an independent structural engineering peer review of the proposed 250 South Street Tower foundation per NYC Building Code Section 1627. We reviewed drawings prepared by WSP-Cantor Seinuk, dated 8/29/14, "Foundation Bid Set". The structural design shown on the plans and specifications is in general conformance with the structural and foundation requirements of the NYC Building Code. The results of the peer review are detailed in the attached report, and are summarized as follows:

1. The design loads conform to the NYC Building Code.

2. The structural design criteria and design assumptions conform to the NYC Building Code, and are in accordance with generally accepted engineering practice.

3. The existing conditions at the site have been investigated by a geotechnical engineer and by a wind tunnel consultant. We have reviewed the geotechnical and wind tunnel reports and confirmed that the design incorporates their results.

4. The structure has a complete load path.

5. Calculations have been performed for a representative fraction of systems, members, and details and have confirmed their adequacy.

6. We are not aware of any performance-specified elements in the project.

7. The structural integrity provisions of the code are being followed.

8. The structural plans are in general conformance with the architectural plans regarding loads and other conditions that may affect the structural design.

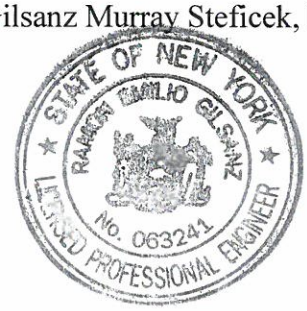
9. The major mechanical items are accommodated in the structural plans.

10. The general completeness of the plans and specifications is adequate.

I trust this information is sufficient for your current purposes. If you have any questions or comments, please do not hesitate to contact us.

Very truly yours,

Ramon Gilsanz, PE, SE
Partner
Gilsanz Murray Steficek, LLP



Karl J. Rubenacker, PE, SE
Partner
Gilsanz Murray Steficek, LLP

INDEPENDENT FOUNDATION STRUCTURAL ENGINEERING PEER REVIEW

250 SOUTH STREET
NEW YORK, NY

September 9, 2014

GMS
GILSANZ . MURRAY . STEFICEK . LLP

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Executive Summary

We performed an independent structural engineering peer review for the foundation of the 250 South Street project in New York, New York, per NYC Building Code Section 1627. Based on our review, the structural design shown on the plans and specifications generally conform to the structural and foundation requirements of the code.

We have confirmed that the design loads conform to the building code, and all other structural design criteria and design assumptions also conform to the code. The codes, standards, and design criteria used in the project are summarized on page 2 of the report.

We have confirmed that the existing conditions at the site have been investigated by a geotechnical engineer and by a wind tunnel consultant. We have reviewed the geotechnical and wind tunnel reports and confirmed that the design incorporates their results.

We have confirmed that the structure has a complete load path.

We have performed calculations for a representative fraction of systems, members, and details and have confirmed their accuracy.

We are not aware of any performance-specified elements in the project.

We have confirmed that the structural integrity provisions of the code are being followed.

We have confirmed the general conformance of the structural plans with the architectural plans.

We have confirmed that the major mechanical items shown on the architectural plans are accommodated in the structural plans.

We have confirmed the general completeness of the plans and specifications.

Information Provided to GMS for Review:

Structural drawings, dated 6/10/14 (Foundation Filing), prepared by WSP-Cantor Seinuk, subsequent issues dated 7/25/14 (Issued for Foundation Bid), dated 8/6/14 (Progress Print), dated 8/15/14 (Issued for Coordination), dated 8/29/14, (Foundation Bid Set)

FO-001, FO-002, FO-005, FO-100 through FO-104, FO-200 through FO-205, FO-300

Additional structural drawings of superstructure for reference:
S-010 through S-050, S-940, S-941, S-942, S-943, S-945, S-950, S-951, S-952, S-955

Specification for Driven Piles (316200), Drilled Caissons (316333), Tie-Down Anchors (316800), Reinforced Concrete (032000).

Architectural drawings, dated 7/25/2014 (Issued for Foundation Bid), prepared by AAI

Mechanical drawings dated 4/25/2014 (Issued for Schematic Design)

Geotechnical Report, dated 1/2/14, prepared by Langan Engineering & Environmental Services, P.C.

Wind Tunnel preliminary report, "Preliminary Results- Wind Induced Structural Responses: Path Mark Building- New York, NY- RWDI Project #1400618", by RWDI, dated March 18, 2014

Design Codes

New York City Building Code 2008 Edition

ACI-318 Building Code Requirements for Structural Concrete

FEMA P-55 Coastal Construction Manual

Design Criteria

The gravity loading criteria is based on occupancy per loading schedule on drawing FO-001.

The wind loading criteria is based on "Preliminary Results- Wind Induced Structural Responses: Path Mark Building- New York, NY- RWDI Project #1400618", by RWDI, dated March 18, 2014, in addition to the requirements of the NYC Building Code.

The seismic & flood loading criteria are based on the Geotechnical Report by Langan Engineering & Environmental Services, P.C., dated 1/2/14, in addition to the requirements of the NYC Building Code.

Building Description:

The building consists of a 72 story, reinforced cast-in-place flat plate construction, residential tower with one basement level and a 40 foot bulkhead on the roof. The basement through 5th floor will contain amenity and mechanical spaces and the residential units will span from the 6th to the 72nd floor. The tower will total 1,100,000 square feet with a total building height at 846'-6" above street level.

Foundations:
The building has one basement below grade. The shear walls and columns are supported by pile caps that connect to caissons, piles. There is a pressure slab in the basement that varies from 30" to 48" and in several spots of the mat there are tie down rock anchors. The foundation walls are generally 1'-6" thick, with one location 2' 0" thick

Superstructure:
The superstructure consists of cast-in-place slabs, shear walls, and columns. The floor slabs are of two-way flat plate construction and are typically 9" thick. The superstructure was not part of this review.

Lateral System:

The lateral system consists of cast-in-place shear walls that surround the elevators in the center of the tower and extend to the perimeter of the building in the tower. The building also utilizes several mechanical floors with perimeter walls. The superstructure lateral system was not part of this review, except as it relates to the foundation design.

Structural Review:

Loads:
The dead loads and live loads used by the structural engineer of record are in compliance with the building code and generally accepted engineering practice.

For wind calculations, the loads are provided in the wind tunnel testing report prepared by RWDI Per NYC Building Code Section 1609.1.2 A summary of the peak wind tunnel loads are shown below:

Cumulative Base Floor Level Loads (4 ft below MBPD)

My (lb-ft)	Mx (lb-ft)	Mz (lb-ft)	Fx (lb)	Fy (lb)
2.22E+09	3.81E+09	2.21E+08	4.36E+06	7.83E+06

Wind loads were based upon the following natural building frequencies:
Mode 1: 7.88 sec (primary Y coupled with X)
Mode 2: 4.91 sec (primary torsion)
Mode 3: 4.51 sec (primary X coupled with Y)

Based on our analysis of the ETABs model with updated vertical & horizontal springs from Langan email dated 8/11/14
Mode 1: 7.69 sec (primary Y coupled with X)
Mode 2: 4.99 sec (primary torsion)
Mode 3: 4.56 sec (primary X coupled with Y)

For seismic, the NYCBC seismic design parameters were utilized: S_s=0.365sec, S_1=0.071 sec, F_a=1.51 sec, F_v=2.4 sec

The design criteria for wind and seismic loads are in conformance with the code.

For flood loads, the stillwater depth (ds) was determined to be 4.13'. The building code 28.2-G201.2 verified the base flood level (BFE) at 10.35' and that wave action need not be considered in the A-zone based on our analysis. The dynamic flood load (Fdyn) considering no scour was determined to be 954 lb/ft acting at elev. 6.06' with a ground surface of elev. 4'-0" and water velocity of 11.52 ft/sec

Foundations Walls:

Worst-case foundation walls at Cherry St. and at South Street basketball court were analyzed assuming support at first floor top of slab of 12'-0" at Cherry Street and support at 3rd floor bottom of slab of 28'-6". Assuming pin-pin fixity at all foundations walls,

reinforcement was found to be adequate to resist the controlling load case at 1.0L+2.0Fa+1.6W.

Pile Caps, Piles, & Caissons:

Analysis of the foundation piles & caissons was completed by utilizing the WSP ETABS model given to GMS dated 6/19/14. GMS verified the correct input wind loads, and the correct design assumptions within the model.

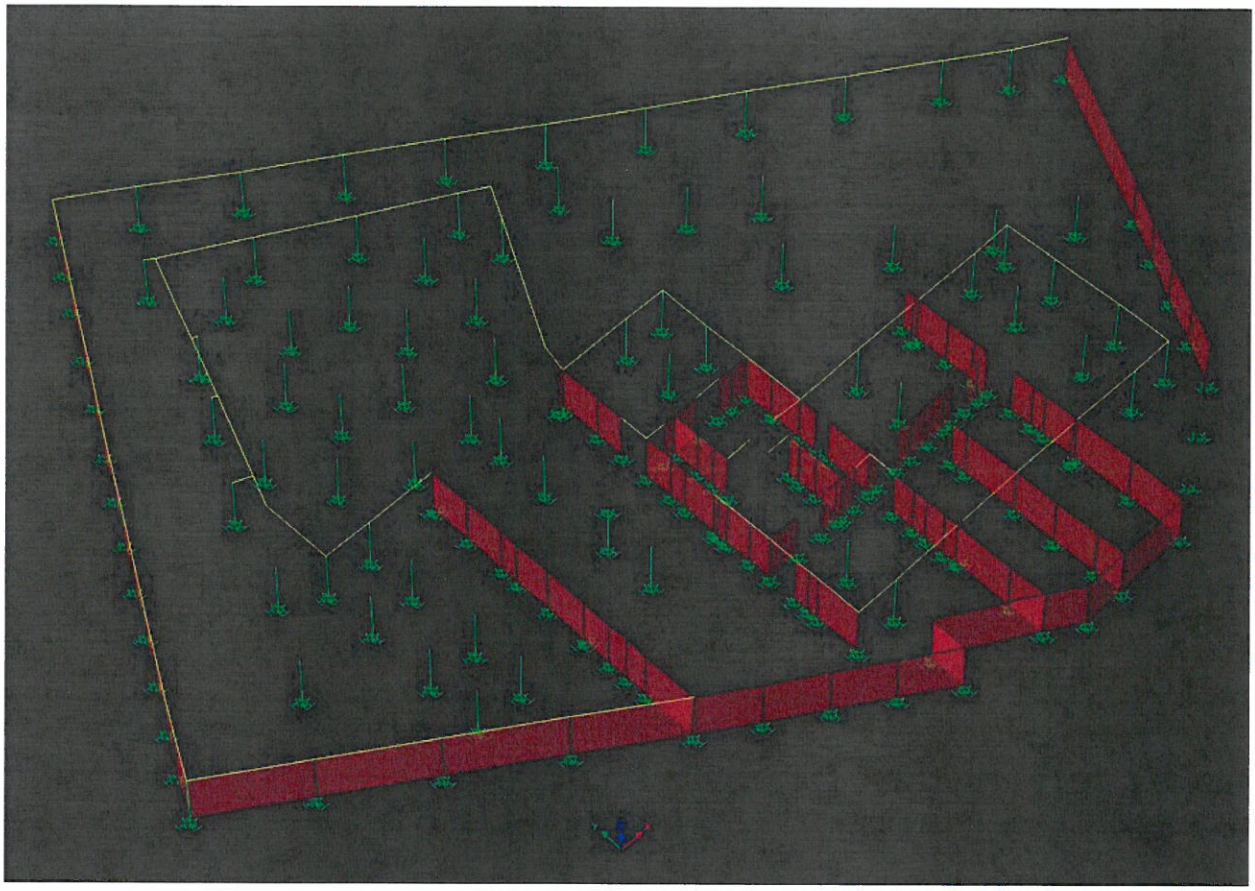

Figure 1: Foundation ETABS Model

Pile cap detailing, rebar splices & development lengths for each of the typical details and sections were analyzed and found to be sufficient. All splices and development lengths were in adherence with the ACI-318 code. The details were modified per both Langan and preliminary GMS comments.

Pile caps and dowels from column to pile caps at columns 26 and 32 were checked for flexure, shear, uplift and compression and were found to have sufficient capacity

Piles and caissons underneath the shear walls were found to have sufficient capacity for uplift, compression, and lateral loads

Piles and anchors were found to have sufficient capacity to prevent uplift at the mat from flood loads under the stillwater depth of the water under the appropriate load combination (0.6D+1.5Fa) with the full weight of the completed structure above. Mat was found to have sufficient self-weight to prevent uplift from groundwater pressures.

The relevant specifications were found to be in conformance with the documents provided by the geotechnical engineer (Langan) and structural drawings

Shear Walls:

Shear walls 3, & 10 were found to have sufficient dowels to connect from the pile caps to the base of the shear wall.