FUTURE STEEL BUILDINGS INTL. CORP.

Certificate of Design and Manufacturing Conformance with NBC, 2005

This Certificate is to affirm that all components of the Steel Building System described below, to be supplied by the named Manufacturer certified in accordance with CSA-A660, have been or will be designed and fabricated in accordance with the following Standards to carry the loads and load combinations specified.

1. DESCRIPTION

Manufacturer's Name and Address: Future Steel Buildings Intl. Corp., 73 Ward Rd., Brampton, ON L6S 6A8

Manufacturer's Certificate No. under CSA A660: FUTUR0

Customer Order Number: 11-1409

Building Type and Size: X40-21x56

Intended Use and Occupancy: COMMERCIAL

Importance Category *(NBC Sentence 4.1.2.1(3))*: Normal

Site Location: 770 ROSS AVE, WINNIPEG, MB R3E 3S3

Applicable Building Code: NBC'05

Builder's Name and Address: DENNIS KONOWICH - CITY OF WINNIPEG FLEET MANAGMENT, 770 ROSS AVE, WINNIP

Owner's Name and Address: DENNIS KONOWICH - CITY OF WINNIPEG FLEET MANAGMENT, 770 ROSS AVE, WINNIP

2. DESIGN STANDARDS

Engineer's Initials

National Building Code of Canada 2005, Part 4: *Structural Design* **P.G.**

CAN/CSA-S16-01, *Limit States Design of Steel Structures*

CAN/CSA-S136-01, *North American Specification for the Design of Cold-Formed Steel Structural Members*

Other (specify) _____ dated _____

3. MANUFACTURING STANDARDS

P.G.

(a) Fabrication has been, or will be, in accordance with CAN/CSA-S16 and CAN/CSA-S136, as applicable.

(b) Welding has been or will be performed in accordance with CSA-W59 and CAN/CSA-S136, as applicable.

(c) The Manufacturer has been certified in accordance with CSA-W47.1, for Division 1 or 2 and/or CSA-W55.3 if applicable.

(d) Welders have been qualified in accordance with CSA-W47.1.

4. PURLIN STABILITY

N/A

Purlin braces are provided in accordance with CAN/CSA-S136, Clause D3 and Appendix B, Clause D3.2.3. In particular, for a standing seam roof supported on movable clips, braces providing lateral support to both top and bottom purlin flange have been or will be provided. The number of rows is determined by analysis but in no case is less than 1 for spans up to 7m inclusive or less than 2 for spans greater than 7m.

5. LOADS

P.G.

(a) Snow and Rain Load

1-in-50 year ground snow load, Ss,	1.9	(kPa)
1-in-50 year associated rain load, Sr,	0.2	(kPa)
Wind exposure factor, Cw,	1.0	
Importance factor, Is,	1.0	
Roof snow load, S,	1.72	(kPa)

Drift load considered *(NBC Sub-section 4.1.6.2.8)* refer to drawing of specific building

Specified rain load (*NBC* Article 4.1.6.4) N/A (mm)

**Initial each true statement. Mark N/A if statement does not apply.*

(Continued)

Engineer's Initials

(b) Full and Partial Snow Load P.G.

(i) Applied on any one and any two adjacent spans of continuous purlins.
(ii) Applied on any one and any two adjacent spans of modular rigid frames with continuous roof beams.
(iii) Applied as described for the building geometry in NBC, Part 4, and in the User's Guide – NBC 2005 Structural Commentaries (Part 4), *Commentary G: Snow Loads.*

(c) Wind Load P.G.

1-in-50 year reference velocity pressure 0.45 (kPa)

Importance factor, Iw, 1.0

(d) Wind Load Application P.G.

(i) Applied as per NBC, Part 4, Sub-section 4.1.7.
(ii) Pressure coefficients as per User's Guide – NBC 2005 Structural Commentaries (Part 4), *Commentary I: Wind Loads.* Figures I3 thru I12.
(iii) Building internal pressure Category 1 per User's Guide – *NBC* 2005 Structural Commentaries (Part 4), *Commentary I: Wind Loads.*

(e) Crane Loads (where applicable) N/A

Type _____ (top-running) (under-running) (jib)
Capacity _____ (tonnes)
Wheel base _____ (m)
Maximum static, vertical wheel load _____ (kN)
Vertical impact factor _____
Lateral factor _____ (%) lateral wheel load _____ (kN)
Longitudinal factor _____ (%) maximum longitudinal load _____ (kN/side)

(f) Mezzanine Live Load _____ (kPa) N/A

(g) Seismic Load P.G.

Applied as per NBC, Part 4, Sub-section 4.1.8

Sa (0.2) 0.12 Sa (0.5) 0.056 Sa (1.0) 0.023 Sa (2.0) 0.006 Fa 2.1 Fv 2.1 Ie 1.0

(h) Other Live Loads

N/A

(i) Dead Loads

Dead load of building components is incorporated in the design
Collateral load (mechanical, electrical, ceiling, sprinklers, etc) 0 (kPa)
Mezzanine 0 (kPa)
Other (specify) 0 ( )

(j) Load Combinations P.G.

Applied in accordance with NBC, Part 4 Section 4.1.

6. GENERAL REVIEW DURING CONSTRUCTION

The Manufacturer does not provide general review during construction for regulatory purposes.

**Initial each true statement. Mark N/A if statement does not apply.*

7. CERTIFICATION BY ENGINEER

I, Ping Guo, a Professional Engineer registered or licensed to practice in the Province or Territory of ONTARIO, hereby certify that I have reviewed the design and manufacturing process for the steel building system described. I certify that the foregoing statements, initialed by me, are true.

Name Ping Guo Signature _____
Title Engineering Manager
Affiliation Future Steel Buildings Intl. Corp. Date _____

Professional Seal

FUTURE STEEL BUILDINGS INTL. CORP.

Certificate of Design and Manufacturing Conformance with NBC, 2005

This Certificate is to affirm that all components of the Steel Building System described below, to be supplied by the named Manufacturer certified in accordance with CSA-A660, have been or will be designed and fabricated in accordance with the following Standards to carry the loads and load combinations specified.

1. DESCRIPTION

Manufacturer's Name and Address: Future Steel Buildings Intl. Corp., 73 Ward Rd., Brampton, ON L6S 6A8

Manufacturer's Certificate No. under CSA A660: FUTUR0

Customer Order Number: 11-1408

Building Type and Size: X40-21x54

Intended Use and Occupancy: COMMERCIAL

Importance Category *(NBC Sentence 4.1.2.1(3))*: Normal

Site Location: 770 ROSS AVE, WINNIPEG, ON R3E 3S3

Applicable Building Code: NBC'05

Builder's Name and Address: DENNIS KONOWICH - CITY OF WINNIPEG FLEET MANAGMENT, 770 ROSS AVE, WINNIP

Owner's Name and Address: DENNIS KONOWICH - CITY OF WINNIPEG FLEET MANAGMENT, 770 ROSS AVE, WINNIP

2. DESIGN STANDARDS

Engineer's Initials

National Building Code of Canada 2005, Part 4: *Structural Design* **P.G.**

CAN/CSA-S16-01, *Limit States Design of Steel Structures*

CAN/CSA-S136-01, *North American Specification for the Design of Cold-Formed Steel Structural Members*

Other (specify) _____ dated _____

3. MANUFACTURING STANDARDS

P.G.

(a) Fabrication has been, or will be, in accordance with CAN/CSA-S16 and CAN/CSA-S136, as applicable.

(b) Welding has been or will be performed in accordance with CSA-W59 and CAN/CSA-S136, as applicable.

(c) The Manufacturer has been certified in accordance with CSA-W47.1, for Division 1 or 2 and/or CSA-W55.3 if applicable.

(d) Welders have been qualified in accordance with CSA-W47.1.

4. PURLIN STABILITY

N/A

Purlin braces are provided in accordance with CAN/CSA-S136, Clause D3 and Appendix B, Clause D3.2.3. In particular, for a standing seam roof supported on movable clips, braces providing lateral support to both top and bottom purlin flange have been or will be provided. The number of rows is determined by analysis but in no case is less than 1 for spans up to 7m inclusive or less than 2 for spans greater than 7m.

5. LOADS

P.G.

(a) Snow and Rain Load

1-in-50 year ground snow load, Ss,	1.9	(kPa)
1-in-50 year associated rain load, Sr,	0.2	(kPa)
Wind exposure factor, Cw,	1.0	
Importance factor, Is,	1.0	
Roof snow load, S,	1.72	(kPa)

Drift load considered *(NBC Sub-section 4.1.6.2.8)* refer to drawing of specific building

Specified rain load (*NBC* Article 4.1.6.4) N/A (mm)

**Initial each true statement. Mark N/A if statement does not apply.*

(Continued)

Engineer's Initials

(b) Full and Partial Snow Load P.G.

(i) Applied on any one and any two adjacent spans of continuous purlins.
(ii) Applied on any one and any two adjacent spans of modular rigid frames with continuous roof beams.
(iii) Applied as described for the building geometry in NBC, Part 4, and in the User's Guide – NBC 2005 Structural Commentaries (Part 4), *Commentary G: Snow Loads.*

(c) Wind Load P.G.

1-in-50 year reference velocity pressure 0.45 (kPa)

Importance factor, Iw, 1.0

(d) Wind Load Application P.G.

(i) Applied as per NBC, Part 4, Sub-section 4.1.7.
(ii) Pressure coefficients as per User's Guide – NBC 2005 Structural Commentaries (Part 4), *Commentary I: Wind Loads.* Figures I3 thru I12.
(iii) Building internal pressure Category 1 per User's Guide – *NBC* 2005 Structural Commentaries (Part 4), *Commentary I: Wind Loads.*

(e) Crane Loads (where applicable) N/A

Type _____ (top-running) (under-running) (jib)
Capacity _____ (tonnes)
Wheel base _____ (m)
Maximum static, vertical wheel load _____ (kN)
Vertical impact factor _____
Lateral factor _____ (%) lateral wheel load _____ (kN)
Longitudinal factor _____ (%) maximum longitudinal load _____ (kN/side)

(f) Mezzanine Live Load _____ (kPa) N/A

(g) Seismic Load P.G.

Applied as per NBC, Part 4, Sub-section 4.1.8

Sa (0.2) 0.12 Sa (0.5) 0.056 Sa (1.0) 0.023 Sa (2.0) 0.006 Fa 2.1 Fv 2.1 Ie 1.0

(h) Other Live Loads

N/A

(i) Dead Loads

Dead load of building components is incorporated in the design
Collateral load (mechanical, electrical, ceiling, sprinklers, etc) 0 (kPa)
Mezzanine 0 (kPa)
Other (specify) 0 ( )

(j) Load Combinations P.G.

Applied in accordance with NBC, Part 4 Section 4.1.

6. GENERAL REVIEW DURING CONSTRUCTION

The Manufacturer does not provide general review during construction for regulatory purposes.

**Initial each true statement. Mark N/A if statement does not apply.*

7. CERTIFICATION BY ENGINEER

I, Ping Guo, a Professional Engineer registered or licensed to practice in the Province or Territory of ONTARIO, hereby certify that I have reviewed the design and manufacturing process for the steel building system described. I certify that the foregoing statements, initialed by me, are true.

Name Ping Guo Signature _____
Title Engineering Manager
Affiliation Future Steel Buildings Intl. Corp. Date _____

Professional Seal