NORTHERN TERRITORY OF AUSTRALIA
BUILDING ACT
SECTION 40 – CERTIFICATE OF COMPLIANCE – STRUCTURAL DESIGN

All sections must be completed – mark N/A to any question that does not apply

PROPERTY / PROJECT DETAILS	
Owner (if known):	
Lot/Portion Number:	Address:
Location:	Town / Hundred :
Description of works : **B & D ROLL-A-SHUTTERS WITH WIND CLIPS FOR USE IN WIND REGION C, TERRAIN CATEGORY 2 AND UP TO A MAXIMUM ALLOWABLE OPENING WIDTH (L) AND ULTIMATE WIND PRESSURE RATING AS STIPULATED ON ENGINEERING DRAWINGS.**	

DOCUMENTS ATTACHED
Drawing Nos: **Engineering Drawing Numbers 2288/S01F, 2288/S02F, 2288/S03F, 2288/S04F, 2288/S05F and 2288/S06F by James Ellis & Associates Pty Ltd (attached)**
Other:

DESIGN BASIS (please list relevant Standards used in the design)
Test report no. TS914 from the Cyclone Testing Station - School of Engineering and Physical Sciences at James Cook University, Experiments conducted on the 9th April, 2nd May and 6th May 2013, Principles of Mechanics, AS/NZS 1170.2:2011 Structural design actions Part 2: Wind actions, AS4100:1998 Steel structures, AS/NZS 1170.0:2002 Structural design actions Part 0: General principles, AS/NZS 1170.1 Structural design actions Part 1: Permanent imposed and other actions, AS/NZS 4600:2005 Cold formed steel structures, AS3600:2009 Concrete structures, AS 3700:2001 Masonry structures, AS/NZ 4505:2012 Garage doors and other large access doors, Ramset - Specifiers Resource Handbook.

Class of Building (BCA): **All**			Type of Construction (BCA volume 1 §C1.1): **N/A** (eg. Type A fire-resisting construction)	
Building Importance Level (BCA Table B1.2a): **2**			Annual Probability of Exceedance for Wind (BCA Table 1.2b): **1 in 500**	
Region: **C**	Regional ultimate wind speed V_R(m/s): **69.3 m/s**		Terrain Category: **2**	Reference height (m): **10m**
$M_{z,cat}$: **1**	M_s : **1**	M_t : **1**		$V_{des\theta}$ Design Wind Speed at reference height (m/s): **69.3m/s**

Internal Pressure Coefficients ($C_{p,i}$):		**+0.6, -0.3**
External Pressure Coefficients ($C_{p,e}$)	Walls	**-0.65, +0.8**
	Roof	**N/A**
Net Pressure Coefficients: ($C_{p,n}$)	Roof / Walls	**N/A**
Imposed Loads, kPa	Floor / Roof	**N/A**

Earthquake Design Category, EDC (Table 2.1 of AS 1170.4): **N/A**
Annual Probability of Exceedance for Earthquake Actions (BCA Table 1.2b): **1 in N/A**
Importance Level (BCA): **N/A** Hazard Factor, Z (Section 3): **N/A** Class of Sub-Soil (Section 4): **N/A**
Safe Foundation Bearing Capacity, kPa: **N/A** Site classification (AS2870): **N/A**

COMMENTS / EXCLUSIONS (Exclusions to this Certificate must be clearly identified).

The following items are excluded and shall be certified separately:
The structure to which the door is attached shall be assessed and certified independently as required by a suitably qualified engineer.

Comments:
The subject doors are rated up to a maximum opening width (L) and ultimate wind pressure rating as stipulated on engineering drawings. The building design engineer is to ensure that the site specific design wind loadings do not exceed the ultimate design wind pressure ratings given on engineering drawings. Alternative design parameters to what are specified on engineering drawings along with alternative site specific local pressure factors may be adopted provided the calculated ultimate design wind pressures do not exceed the values given on engineering drawings. Doors may be positioned at any location along the building envelope including all local pressure zones (i.e. corners of buildings), provided the calculated ultimate design wind pressures do not exceed the values given on engineering drawings.

CERTIFICATION BY STRUCTURAL ENGINEER

Company Name : James Ellis & Associates Pty Ltd	**Company NT Registration Number : 189148ES**

We certify that reasonable care has been taken to ensure that the structural engineering aspects of the works as described above have been designed in accordance with the requirements of the Building Code of Australia and the Northern Territory Building Regulations.

Name : James Ellis	**Individual NT Registration Number 47429ES**	**Signature** 	**Date : 2nd June 2014**

SCHEDULE OF STRUCTURAL INSPECTIONS REQUIRED

Inspection of construction is required at all stages indicated below.

[ ] **1.** Completion of site preparation/site filling/excavations for footings prior to placement of any reinforcement or concrete.

[ ] **2.** Completion of preparations for placing of concrete strip footings including placement of reinforcement.

[ ] **3.** Completion of preparations for placing concrete slabs including compaction of fill and sand blinding, placement of formwork, reinforcement, starter bars and cast in items.

[ ] **4.** Completion of preparations for placing of concrete pier footings including reinforcement (if any).

[ ] **5.** Starter bars and cast in items after placing of concrete and prior to any covering up work.

[ ] **6** Reinforcement to walls completed prior to core filling (inspection holes and cleanout cores to be completed).

[ ] **7.** Structural steelwork and cold formed steelwork completed and prior to any covering up work. Floor framing system completed before floors are laid or underside is lined.

[ ] **8.** Suspended concrete floor slabs with formwork, reinforcement and cast in items completed, prior to placing of concrete.

[ ] **9.** Wall framing or blockwork wall core filling completed (with windows fixed in place) and roof framing with connections completed and prior to sheeting or lining.

Note: [ ] Prior lodgement of truss manufacturer's drawings, details and certification required.
[ ] Prior lodgement of windows manufacturer's drawings including fixings and certification required.

[ ] **10.** Structural wall linings completed and prior to any covering up work.

[ ] **11.** Final inspection upon completion of all structural work including fixings of external roof and wall claddings, flashings, barges & vents.

[ ] **12.** Other Inspections as required by the building permit

Important Information:

1) The above inspections are required to be carried out by either the certifying engineer or the building certifier who issued the building permit for the work. (If no inspections are indicated refer to the certifying engineer for advice).
2) Where works are prescribed building works under the *NT Building Act*, the building certifier must be provided with a copy of the inspection record and no further works must be carried out by the builder until the building certifier issues a release to proceed with further works.
3) Additional non structural inspections may be required during the course of construction before the issue of a Permit to Occupy (refer to building certifier for requirements).
4) Failure to obtain inspections may prevent the issue of a Permit to Occupy upon completion of the building works.