Isotect Engineers
CIVIL & STRUCTURAL ENGINEERING CONSULTANT
Where Innovation Meets Quality Designs

Address: Lots 4 & 5, Naliga Road, Narere, Nasinu
Postal: P.O.Box 435, Nabua, Fiji Islands
Phone: +679 844 6827
E-mail: isotectengineersfiji@gmail.com
krishneelram2009@gmail.com

STRUCTURAL DESIGN CERTIFICATE FOR NEW BUILDINGS

Version 5.3

DESIGN CERTIFICATE NO: DC1315

[FOR NEW BUILDINGS ONLY]

I, **KRISHNEEL SANJAY RAM**, being a Corporate Member of the **FIJI INSTITUTION OF ENGINEERS** hereby certify that I have supervised the design of and the computations for **NATIONAL DISASTER MANAGEMENT OFFICE/ KOICA/ IOM UN MIGRATION** shown on the accompanying plans prepared by **PACIFIKA BUILDING DESIGNZ** numbered **S00 – S11** titled **PROPOSED ROKOVUAKA MULTI PURPOSE EVACUATION CENTRE** at **TAILEVU** and described in the accompanying specifications for a:

☑ New ☐ Renovated

Name of Registered Owner: NATIONAL DISASTER MANAGEMENT OFFICE/ KOICA/ IOM UN MIGRATION
Address: TAILEVU
Location: STAILEVU
Certificate of Title: - **Lot No.:** - **NL No.:** -

I further certify that the works defined above have been designed in accordance with sound and widely accepted Engineering principles; that they have been designed to the National Building Code of Fiji and the following specific Reference Codes:

NZS 3101:2006, NZS 3404:1997, AS/NZS 1170.0:2002, AS/NZS 1170.1:2002, AS/NZS 1170.2:2011, NZS 1170.5:2004

I further state that I have ascertained to the best of my ability that the stresses and combinations of stresses in the various materials of construction under the above loads will not exceed the maxima to ensure the safety and stability of the structure if erected in accordance with these plans and specifications.

SCHEDULE OF PRINCIPAL DESIGN CRITERIA FOR BUILDINGS

1. BRIEF DESCRIPTION OF STRUCTURE:

☐ Residential ☑ Others

Single storey structure with hip roof.

2. BUILDING DIMENSIONS: Length (m): 28.550 Width (m): 17.300 Height (m) – 4.500 (eave)
Refer Architectural Drawings for Exact Dimensions

3. GROSS FLOOR AREA: 494.000 m^2 Refer Architectural Drawings for Exact Floor Area (all buildings)

4. No. OF LEVELS: 1 max

5. DESIGN METHOD: Ultimate Limit State

6. FOUNDATIONS: 100 kPa (To be verified before construction)

7. LIVE LOADS:
Roofs (kPa) : 0.50
Ground (kPa) : 4.00

ISOTECT ENGINEERS (FIJI) PTE LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
Where Innovation Meets Quality Designs
P.O. BOX 435, NABUA
PH: 844 6827

8. SEISMIC LOADS *(NZS 1170.5:2004)*:

Site Subsoil Class	: C	Spectral Shape Factor $C_h(T_1)$	: 2.36
Hazard Factor (Z)	: 0.25	Return Period Factor (R)	: 1.00
Near Fault Factor N (T, D)	: 1.00	Structural Ductility Factor (μ)	: 1.25
Structural Performance Factor (S_p)	: 0.925		
Horizontal Design Response Spectrum $C_d(T_1)$	: 0.300		

9. WIND LOADS *(AS/NZS 1170.2: 2021)*:
Structure Importance Level : 2.0

Design Working Life	: 50 years
Return Period (R)	: 1/500 at ULS and 1/25 at SLS
Regional Gust Wind Speed ($V_{R\,(u)}$) *(Limit State)* (m/s)	: 80.00
Regional Wind Gust Speed ($V_{R\,(S)}$) *(Serviceability State)* (m/s)	: 53.00
Terrain/ Height Multiplier ($M_{(z,\,cat)}$)	: 1.01 (Terrain Category 1)
Shielding Multiplier (M_s)	: 1.00
Wind Direction Multiplier (M_d)	: 0.90
Topographic Multiplier (M_t)	: 1.00
Climate Change Multiplier (M_c)	: 1.05
Design Wind Speed ($V_{(des,\theta)}$) *(Limit State)* (m/s)	: 76.36 m/s
Design Wind Speed ($V_{(des,\theta)}$) *(Serviceability State)* (m/s)	: 50.59 m/s

PRESSURE COEFFICIENTS:

External Roof ($C_{p,e}$)	: -0.90
Wall ($C_{p,e}$)	: +0.8/-0.5
Internal ($C_{p,i}$)	: 0/-0.3

10. BUILDING ENVELOPE:

I certify that the building envelope (windows, doors and cladding) is capable of resisting impact loading as stipulated under Clause 2.5.7 of AS/NZS 1170.2: 2011 *(Equivalent to a 4 kg piece of timber of 100 mm x 50 mm cross-section, projected at 28m/s horizontally and at 7m/s projected vertically).*

11. EXPIRY DATE OF THIS CERTFICATE: *(for cyclone Insurance Purpose Only) N/A*

(Maximum 7 years subject to conditions stated below.)

The validity of this *Design Certificate* is subject to the property being regularly maintained by the building owner. Regular maintenance shall include but be not limited to the following: roof gutters and its fasteners, roof cladding, capping and fasteners, any service unit such as water tanks, solar panels, etc, all exposed timber and steel including the fasteners forming the roof and other building structural components and shutters and fasteners for the externally glazed areas. Fasteners shall include but not be limited to the following: nails, screws, straps, bolts, welds, plates, brackets, etc.

12. GENERAL NOTES: *N/A*

13. WAIVERS

This certificate excludes any ancillary fixings such as gutters and downpipes.

14. PROFESSIONAL INDEMNITY INSURANCE:

I state that I hold a current Professional Indemnity Insurance Policy No: **FJ110003242PIL** for the sum of **FJ$3,000,000.00**, which expires on the **30th APRIL, 2024**.

15. INSPECTION CERTIFICATE:

I have been engaged to carry out structural supervision of the construction and will issue an Inspection Certificate to certify that the work is in accordance with the drawings.

Signature: _____ Date: **03rd March, 2024** FIE Corporate Membership No: **561**

Name: **KRISHNEEL SANJAY RAM**

Professional Qualifications: **B.Tech Civil - India & Dip. in Civil Eng – Fiji**
CMEngNZ IntPE(NZ) / APEC Engineer, MIEAust CPEng NER APEC Engineer IntPE(Aus), MFIE, MASCE, MCSCE, MJSCE & GMICE

Company Stamp:

ISOTECT ENGINEERS (FIJI) PTE LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS
Where Innovation Meets Quality Designs
P. O. BOX 435, NABUA
PH: 844 6827

For and on behalf of: **ISOTECT ENGINEERS (FIJI) PTE LTD**
Address: **LOTS 4 & 5, NALIGA RD, NARERE, NASINU**