



**CHAND ENGINEERING CONSULTANTS LTD.**

**CONSULTING ENGINEERS & PROJECT MANAGERS**

**CYCLONE WINSTON PRELIMINARY ASSESSMENT  
SCHOOLS, HEALTH FACILITIES AND PUBLIC BUILDINGS  
FOR  
FIJI INSTITUTION OF ENGINEERS &  
DEPARTMENT OF NATIONAL PLANNING  
(MINISTRY OF FINANCE)**



NAME OF FACILITY: Saivou District School  
TYPE: Primary School  
LOCATION: Rakiraki  
DATE OF ASSESSMENT: 22 March 2016

JOB NO: 16-116  
GOVERNMENT FACILITY NUMBER: GFN-111

**RAPID ASSESSMENT TEMPLATE: CYCLONE WINSTON DAMAGED BUILDINGS  
SCHOOLS, PUBLIC BUILDINGS & HEALTH FACILITIES**

**INSPECTOR:** AAC/ AAD/ RK  
**FIRM/COMPANY:** CHAND ENGINEERING CONSULTANTS LIMITED

**GENERAL INFORMATION**

Building Name: Saivou District School  
Type: School Block  
Location: Rakiraki  
No. of Buildings: 3  
Ariel Plan Available: ~~YES~~ / NO

**Extent of Damage Rating Description**

1	Minor/Cosmetic/Water
2	Some Damage
3	Extensive but Repairable
4	Irreparable

**Types of Buildings**

- School Block
- Staff Quarters
- Toilet Block
- Utility Building (FEA, Services, etc)
- Divisional Hospital
- Sub-Divisional Hospital
- Health Centre
- Nursing Station
- Public Building or Facility

**REPORT**

Page No. : 1  
Building No. : 1  
Building Approx Age: \_\_\_\_\_  
No. of Storeys: 1

**EVALUATION**

Type of Construction	Description	Build Quality	Damage	Extent of Damage Rating	Photo No.
Floor	reinforced concrete slab on ground	1 Good 2 Average 3 Poor	No Visible damage	0	1,2
Foundations	Not visible	1 Good 2 Average 3 Poor	No visible damage-concealed	0	N/A
Walls	150mm blockwall for 1 building and the other is 100% damaged.	1 Good 2 Average 3 Poor	1 building is 100% damaged and the other has no visible damage.	4	1
Rafters	150 x 50mm timber rafters	1 Good 2 Average 3 Poor	1 building is 100% damaged and the other has water damage	4	N/A
Purlins	75 x 50mm timber purlins	1 Good 2 Average 3 Poor	1 building is 100% damaged and the other has water damage	4	N/A
Roof	corrugated roof cladding with 25% of the cladding blown out of 1 building and the other is 100% damaged.	1 Good 2 Average 3 Poor	1 building is 100% damaged and the other has 25% CGI cladding blown out	4	1
Electrical	typical standard switches, GPO's and fluorescent tubelights and bulbs.	1 Good 2 Average 3 Poor	1 building is 100% damaged and not known for the other	4	N/A
Hydraulics	None	1 Good 2 Average 3 Poor	N/A	N/A	N/A
Windows/Doors	louver windows on standard carriers typically for all windows and timber doors.	1 Good 2 Average 3 Poor	1 building is 100% damaged and has no damage.	4	1
Shutters	50 x 50 mesh shutters observed in 1 block and the other is 100% blown out.	1 Good 2 Average 3 Poor	1 building is 100% damaged and no damage for the other.	0	1
Ceilings	Ply board ceiling typically throughout- 25% is blown out and the rest is is water damaged. For 1 building and the other is 100% damaged.	1 Good 2 Average 3 Poor	1 building is 100% damaged and has 25% blown out and water Damage	4	N/A
Terraces/Verandah	concrete floor with 50mm diameter steel post.	1 Good 2 Average 3 Poor	1 building is 100% damaged and has 25% roof blown out.	4	1
Tiles/Floor Covering	combination of concrete plaster and with ceramic tiles	1 Good 2 Average 3 Poor	1 building is 100% damaged and has no visible damage	4	1
Gutters	Standard PVC gutters with proprietary PVC straps fixed to the outside of the gutter with 60% blown out	1 Good 2 Average 3 Poor	1 building is 100% damaged and the other has 60% damage.	4	1
Downpipes	100mm PVC downpipes with PVC straps fixed to the wall with 60% blown out.	1 Good 2 Average 3 Poor	1 building is 100% damaged and the other has 60% blown out.	4	1
Fascia Boards	250x30mm timber fascia board.	1 Good 2 Average 3 Poor	1 building is 100% damaged and the other has 25% damage	4	1
Furniture/Desks etc.		1 Good 2 Average 3 Poor			
<b>Possible Intermediate Solution</b>	Put new roof cladding on 1 building with fascia, gutters, downpipes, flashings. Re-construct the wall and the roof in accordance to the NBCF with new roof trusses, purlins, flashing, gutters, downpipes, flashings for the 100% damaged buildings.				
<b>Possible Long Term Solution</b>	Detailed investigation for roof framing recommended along with checks on wall capacity for uplift/lateral loads for more tolerance towards Cat.4. Much dependent upon detailed investigation by an Engineer. Considering the building age and with the 25% of roof blown out and 1 building and 100% damage on the other, possibly demolish and re-build the whole of the roof and the structure and to comply with NBCF. Estimated cost currently around \$100,000.00 for the new roof and structure with retrofit for a long term solution.				

**Damage Assessment (\$)** \$80,000.00 Intermediate  
**Basis of Calculation** Engineers Estimate-TBC (note can be QS assisted)

**FEES ESTIMATE:**

Design/Documentation: TBC  
Tender/Approval: TBC  
Inspection/End Construction: TBC

**RAPID ASSESSMENT TEMPLATE: CYCLONE WINSTON DAMAGED BUILDINGS  
SCHOOLS, PUBLIC BUILDINGS & HEALTH FACILITIES**

**INSPECTOR:** AAC/ AAD/ RK  
**FIRM/COMPANY:** CHAND ENGINEERING CONSULTANTS LIMITED

**GENERAL INFORMATION**

Building Name: Saivou District School  
Type: Staff Quarters  
Location: Rakiraki  
No. of Buildings: 4  
Ariel Plan Available: **YES** / NO

**REPORT**

Page No. : 2  
Building No. : 2  
Building Approx Age: \_\_\_\_\_  
No. of Storeys: 1

**Extent of Damage Rating Description**

1	Minor/Cosmetic/Water
2	Some Damage
3	Extensive but Repairable
4	Irreparable

**Types of Buildings**

- School Block
- Staff Quarters
- Toilet Block
- Utility Building (FEA, Services, etc)
- Divisional Hospital
- Sub-Divisional Hospital
- Health Centre
- Nursing Station
- Public Building or Facility

**EVALUATION**

Type of Construction	Description	Build Quality			Damage	Extent of Damage Rating	Photo No.
		1	2	3			
Floor	combination of reinforced concrete slab on ground and timber flooring.	1 Good	2 Average	3 Poor	No visible damage	0	3
Foundations	Not visible.	1 Good	2 Average	3 Poor	No visible damage- concealed	0	N/A
Walls	combination of 150mm blockwall and CGI claddings	1 Good	2 Average	3 Poor	No visible damage	0	3,4
Rafters	100x50 timber rafter	1 Good	2 Average	3 Poor	Water damage	1	3
Purlins	75x50 timber purlins	1 Good	2 Average	3 Poor	Water damage	1	3
Roof	corrugated roof cladding	1 Good	2 Average	3 Poor	100% of the roof is blown out and the other quarters has 0-50% damage	4	4
Electrical	typical standard switches, GPO's and fluorescent tubelights and bulbs.	1 Good	2 Average	3 Poor	No damage known	0	N/A
Hydraulics	None	1 Good	2 Average	3 Poor	N/A	N/A	N/A
Windows/Doors	louver windows on standard carriers typically for all windows and timber doors.	1 Good	2 Average	3 Poor	Few louvers shattered	2	3,4
Shutters	no shutters observed	1 Good	2 Average	3 Poor	N/A	0	3,4
Ceilings	Ply board ceiling typically throughout- 1 quarters is 100% damaged	1 Good	2 Average	3 Poor	100% of the ceiling is blown out	4	N/A
Terraces/Verandah	Concrete floor with 50mm steel post	1 Good	2 Average	3 Poor	Verandah roof has blown out	4	N/A
Tiles/Floor Covering	combination of concrete plaster, ceramic tiles and timber	1 Good	2 Average	3 Poor	Water damage	1	N/A
Gutters	Standard PVC gutters with proprietary PVC straps fixed to the outside of the gutter.	1 Good	2 Average	3 Poor	100% damage	4	3,4
Downpipes	100mm PVC downpipes with PVC straps fixed to the wall	1 Good	2 Average	3 Poor	100% damage	4	3,4
Fascia Boards	250x30mm timber fascia board.	1 Good	2 Average	3 Poor	100% damage	4	3,4
Furniture/Desks etc.		1 Good	2 Average	3 Poor			
<b>Possible Intermediate Solution</b>	Re-construct the roof of the quarters in accordance to the NBCF with new roof, trusses, purlins, gutters, downpipes, fascia, flashings.						
<b>Possible Long Term Solution</b>	Detailed investigation for roof framing recommended along with checks on wall capacity for uplift/lateral loads for more tolerance towards Cat.4. Much dependent upon detailed investigation by an Engineer. Considering the building age and with 100% of roof blown out, demolish and re-construct the whole quarters to comply with NBCF. Estimated cost currently around \$30,000.00 for all new quarters with retrofit.						

**Damage Assessment (\$)** \$50,000.00 Intermediate  
**Basis of Calculation** Engineers Estimate-TBC (note can be QS assisted)

**FEES ESTIMATE:**

Design/Documentation: TBC  
Tender/Approval: TBC  
Inspection/End Construction: TBC

**GENERAL DAMAGE  
SCHOOLS, PUBLIC BUILDINGS & HEALTH FACILITIES**

INSPECTOR: AAC/AAD/RK  
 FIRM/COMPANY: Chand Engineering Consultants Limited

**GENERAL INFORMATION**

Building Name: Saint Francis College  
 Location: \_\_\_\_\_  
 No. of Buildings: 8  
 Ariel Plan Available: **YES / NO**

**1 FENCING / GATES / DRIVEWAY / RETAINING WALLS ETC (INCLUDE TYPE / LENGTH ETC)**

N/A

**2 WATER TANKS/METERS/PLUMBING**

N/A

**3 POWER LINES / METERS / WIRING**

N/A

**4 OTHER ITEMS**

Currently, all the classes are being run in the classrooms and a tarpaline has been used to temporarily block out water from leaking with classes going in them. Long term solution would require decent time of 4-6 months of staged construction depending on material availability for a complete long term solution subject to additional cost consideration. Depending on immediate need and capacity, minimum 3 months to construct the whole new roof for the school blocks for full use again and 1 month to construct the new blown out classroom and 3 weeks to construct the teachers quarters and 3 weeks to repair all the fallen gutters and downpipes.

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\_\_\_\_\_

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**TOTAL COST ESTIMATE:**

DESCRIPTION	FEE
School Building	\$50,000.00
Staff Quarters	\$10,000.00
General	\$20,000.00
_____	_____
_____	_____
_____	_____
<b>TOTAL:</b>	<b>\$80,000.00</b>

**TOTAL FEE ESTIMATE:**

DESCRIPTION	FEE
TBC	TBC
TBC	TBC
TBC	TBC
_____	_____
_____	_____
_____	_____
<b>TOTAL:</b>	_____

**PHOTOS- BUILDING 1**



**Photo 1: View of the School Building with Damaged Roof**



**Photo 2: View of the 100% Damaged Classroom**

**PHOTOS-BUILDING 2**



**Photo 3: View of the Damaged Teachers Quarters**



**Photo 4: View of the Damaged Teacher Quarters.**