

TENDER NO : XXX – XXX

SENTECH BRIXTON TOWER – STRUCTURAL REMEDIATION

Particular Specifications (P.S)

This document (P.S) should be read in conjunction with the original structural assessment report, and the BOQ. All remediation measures outlined herein are to be undertaken in accordance with the findings and recommendations of the original assessment to ensure comprehensive and effective repair or reinforcement of the structure. All equipment used for repair and/or replacement must be in accordance to the relevant SANS standards. It should be noted that whenever a product specification is followed by the phrase “or similar approved,” it is required to provide a specifications sheet detailing the specifications of the approved alternative product. The contractor undertaking this project shall be an approved applicator of the FRP system and shall provide supporting documentation confirming compliance.

P.S 1: SLAB STRENGTHENING (FRP SYSTEM)

The scope of work with reference to the slab strengthening includes, but not limited to:

- Mechanical preparation of slab soffit is required by grinding to remove laitance and expose sound concrete.
- Cleaning of prepared surfaces to achieve a dry, dust-free, and contaminant-free substrate.
- Supply and installation of SikaWrap® 300C – 50cm carbon fibre strips or similar approved product. The slab strengthening design, using Sika’s software is attached in Annexure B.
- Application of Sikadur-330 epoxy adhesive in accordance with manufacturer’s specifications.
- Installation of FRP strips in accordance with drawing in Annexure A.
- Application of uniform pressure to ensure full bond and removal of entrapped air.
- Allowance for curing time prior to loading of strengthened elements.
- All works to comply with SANS 10100-1 and manufacturer’s specifications.
- Due diligence shall be exercised by the Contractor to ensure that no interference with or damage to Sentech equipment occurs during the remediation works.

P.S 2: REINSTATEMENT AND PAINTING

The scope of work with reference to the roofing elements includes, but not limited to:

- Preparation of all repaired and disturbed surfaces by cleaning, sanding, and removal of contaminants.
- Application of suitable primer using Sikagard® or similar approved (specifications to be submitted for approval).
- Application of minimum two coats of protective coating system suitable for internal concrete surfaces.

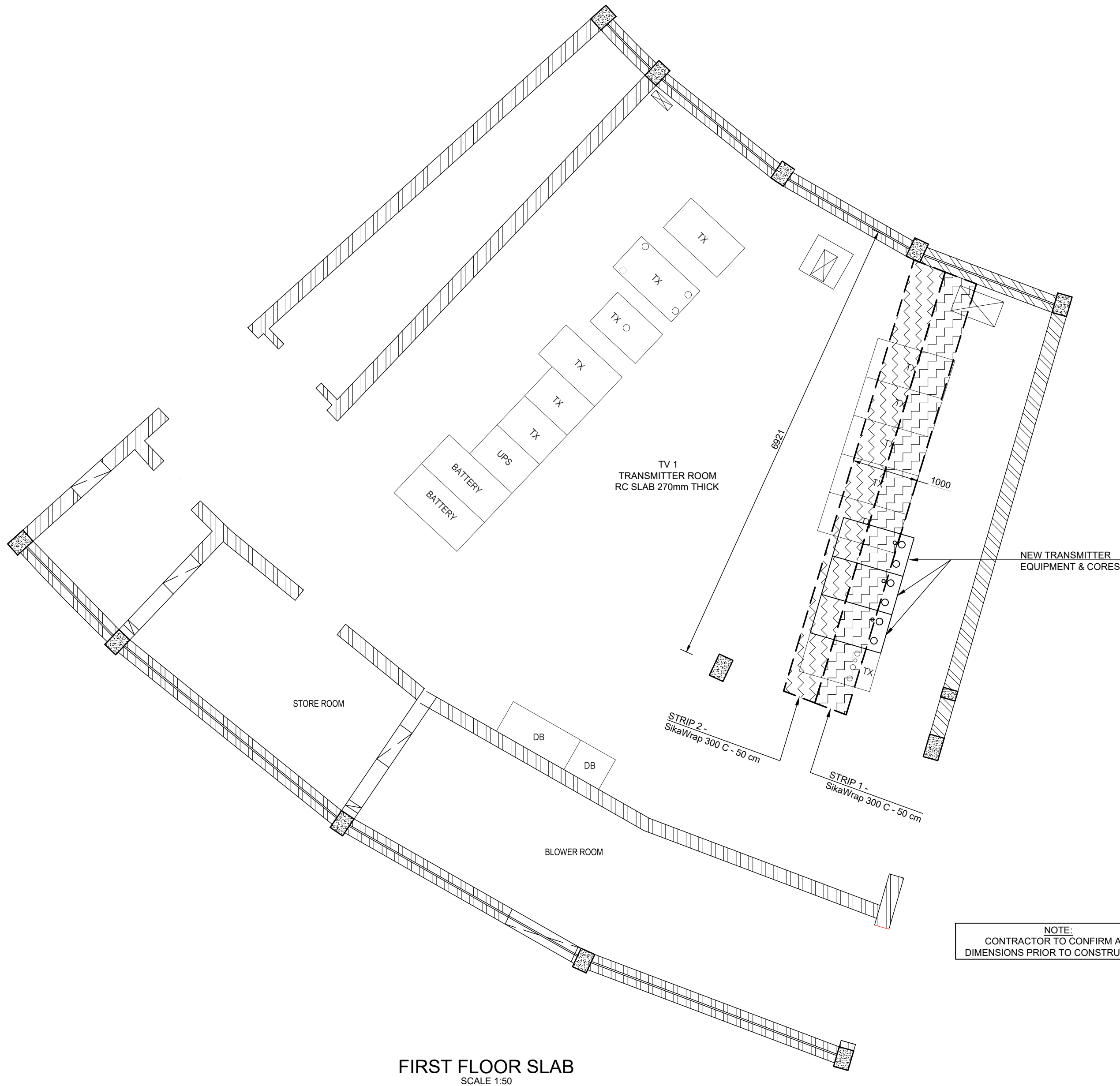
- All edges and transitions to be neat and continuous.
- All works to be carried out in accordance with SANS 12944.
- Due diligence shall be exercised by the Contractor to ensure that no interference with or damage to Sentech equipment occurs during the remediation works.

P.S 3: CORING AND DRILLING

The scope of work with reference to coring and drilling includes, but is not limited to:

- Contractor to be approved or authorised to use core drilling equipment.
- Core drilling shall be carried out using rig-mounted, water-lubricated diamond core drilling equipment suitable for reinforced concrete elements. Hilti DD 200 G02 Diamond Core Drill System or a similar approved system to be used. Handheld drilling methods will not be permitted.
- Supply and use of rig-mounted equipment, diamond core bits suitable for reinforced concrete, including all consumables and wear-and-tear items required to complete the works.
- Continuous water management during drilling operations, including containment and removal of slurry and wash water to maintain a clean and safe working environment. It is the responsibility of the contractor to ensure no water makes its way into any of the Sentech equipment which may lead to serious damage.
- Contractor to ensure removal, handling, and disposal of all concrete cores and drilling waste generated during the works.
- Cleaning of all completed cores to ensure they are free of debris, slurry, and obstructions prior to handover.
- Allowance for working in reinforced concrete containing steel reinforcement, including potential obstruction by rebar, with no claims for additional time or costs arising therefrom.
- Reference shall be made to Sentech drawings T09700/A/101B and T09700/A/102B for all setting out, notes, and special requirements prior to execution of works. Execution of coring through reinforced concrete floor slabs and walls to the diameters and thicknesses as indicated on the drawings. (See Annexure C).
- All works shall comply with applicable project specifications and relevant standards, including SANS 10100-1, where applicable.
- Due diligence shall be exercised by the Contractor to ensure that no interference with, or damage to, existing Sentech services, equipment, or surrounding structural elements and finishes that may lead to damage, spalling, or cracking during drilling operations.

ANNEXURE A



NOTE:
CONTRACTOR TO CONFIRM ALL
DIMENSIONS PRIOR TO CONSTRUCTION.

FOR CONSTRUCTION

0	2026-05-18	LEE	AI / MYS	FOR CONSTRUCTION
REV	DATE	DRAWN	CHECKED	DESCRIPTION

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DRAWING & PROJECT

SENTECH TOWER
FIRST FLOOR SLAB STRENGTHENING LAYOUT

	RESPONSIBLE PERSON		DATE
DESIGNED	AI / MYS		2026-05-18
DRAWN	LEE		2026-05-18
CHECKED	AI		2026-05-18
REVISION	0		2026-05-18
SCALE	AS SHOWN	SHEET SIZE	A2
DRAWING NUMBER			REVISION

1124-300-001

0

DRAWING STATUS CODE: C

R = REPORT
D = DETAILED
T = TENDER
P = PRELIMINARY
C = CONSTRUCTION
A = AS BUILT

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ANNEXURE B

BUILDING TRUST



Sika® CarboDur® Calculation Software

FRP STRUCTURAL STRENGTHENING

PROJECT INFORMATION

Calculation title	Strengthening of Beam Strip
Project reference	
Project name	Sentech Brixton Tower
Element	Beam Strip
Customer	Garry Pio
Date	5/14/2026, 10:21:23 AM
Calculation by	Mohamed Yusuf Sheik
Approved by	Althaaf Ibrahim
Remarks	
Catalogue country	ZA
Sika's contact	



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1. DESIGN DATA

1.1. Type of project

Flexural strengthening of beams by FRP.

1.2. Regulations

- Concrete Society Technical Report No. 55 (TR 55): design guidance for strengthening concrete structures using fibre composite materials, Third Edition 2012.
- EN 1992-1-1. Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings.

2. ELEMENT DATA

2.1. Materials

2.1.1. Concrete

Compressive strength	f_{ck}	35 MPa
Tensile strength	f_{ctk}	2.2 MPa
Effective creep ratio for initial loads	$\varphi_{ef,i}$	5
Effective creep ratio for design loads	$\varphi_{ef,d}$	2

$$f_{cd} = \alpha_{cc} \frac{f_{ck}}{\gamma_c}$$

Concrete data are reported in the table.

		Limit states		
		ULS	Accidental damage	Fire
Partial safety factor	γ_c	1.5	1.2	1
Long-term coefficient	α_{cc}	1	1	1
Design strength	f_{cd}	23.3 MPa	29.2 MPa	35 MPa

2.1.2. Steel

Yielding strength	f_{yk}	450 MPa
Elastic modulus	E_s	200 GPa

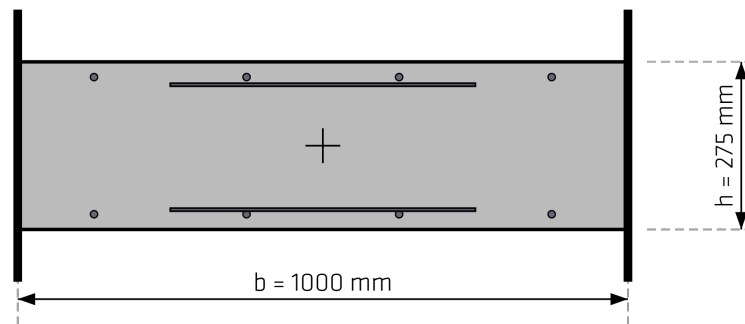
$$f_{yd} = \frac{f_{yk}}{\gamma_s}$$

Steel data are reported in the table.

		Limit states		
		ULS	Accidental damage	Fire
Partial safety factor	γ_s	1.15	1	1
Design strength	f_{yd}	391.3 MPa	450 MPa	450 MPa

2.2. Geometry

The geometry of the cross section is depicted below.



The reinforcements from the top are:

- $A = 339 \text{ mm}^2$, $c = 35 \text{ mm}$
- $4 \Phi 12 \text{ mm}$: $A = 452 \text{ mm}^2$, $c = 25 \text{ mm}$

The reinforcements from the bottom are:

- $4 \Phi 12 \text{ mm}$: $A = 452 \text{ mm}^2$, $c = 25 \text{ mm}$
- $A = 339 \text{ mm}^2$, $c = 35 \text{ mm}$

3. LOADS

Load data are reported in the table.

	N [kN]	M [kNm]
Initial load	0	70
ULS load	0	125
Characteristic load	0	0
Fire load	0	0

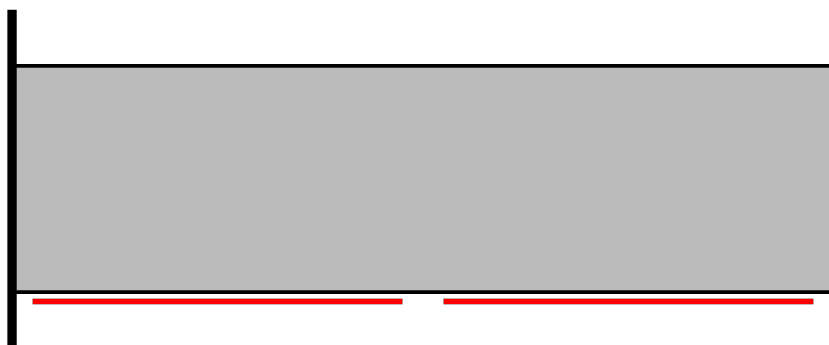
4. STRENGTHENING

Sika® product details and geometry are reported in the tables.

Product details for position main

Strengthening position	Main
Product	SikaWrap® 300 C - 50 cm
Fraction	1/1
Type of fibers	C
Width	500 mm
Single layer thickness	0.167 mm
Characteristic elastic modulus	220 GPa
Characteristic ultimate strain	14.5 ‰
Characteristic strength	3190 MPa
Arrangement	EBR
Number of plies	1
PSF for manufacture of FRP	1.2
PSF for elastic modulus	1.1
PSF for ultimate strain	1.25

The geometry of the strengthening is depicted in the figure.



5. RESULTS

5.1. Ultimate limit states

The strength check is reported below

$$M_{Ed} = 125 \text{ kNm} \leq 129.8 \text{ kNm} = M_{Rd}(N_{Ed})$$

Additional check according to TR55 §6.2.4

$$1.15 M_{Ed} = 143.8 \text{ kNm} \geq 129.8 \text{ kNm} = M_{Rd} \Rightarrow \varepsilon_s = 0.0093 > 0.0040 = 0.002 + f_{yk}/(E_s \gamma_s)$$

5.2. Serviceability limit states

Concrete

$$\sigma_c = 0 \text{ MPa} \leq 21 \text{ MPa} = 0.6 f_{ck}$$

Reinforcement steel

$$\sigma_s = 0 \text{ MPa} \leq 360 \text{ MPa} = 0.8 f_{yk}$$

Fiber (main)

$$\sigma_f = 0 \text{ MPa} \leq 1047.2 \text{ MPa} = 0.65 f_{fd}$$

6. LEGAL DISCLAIMER

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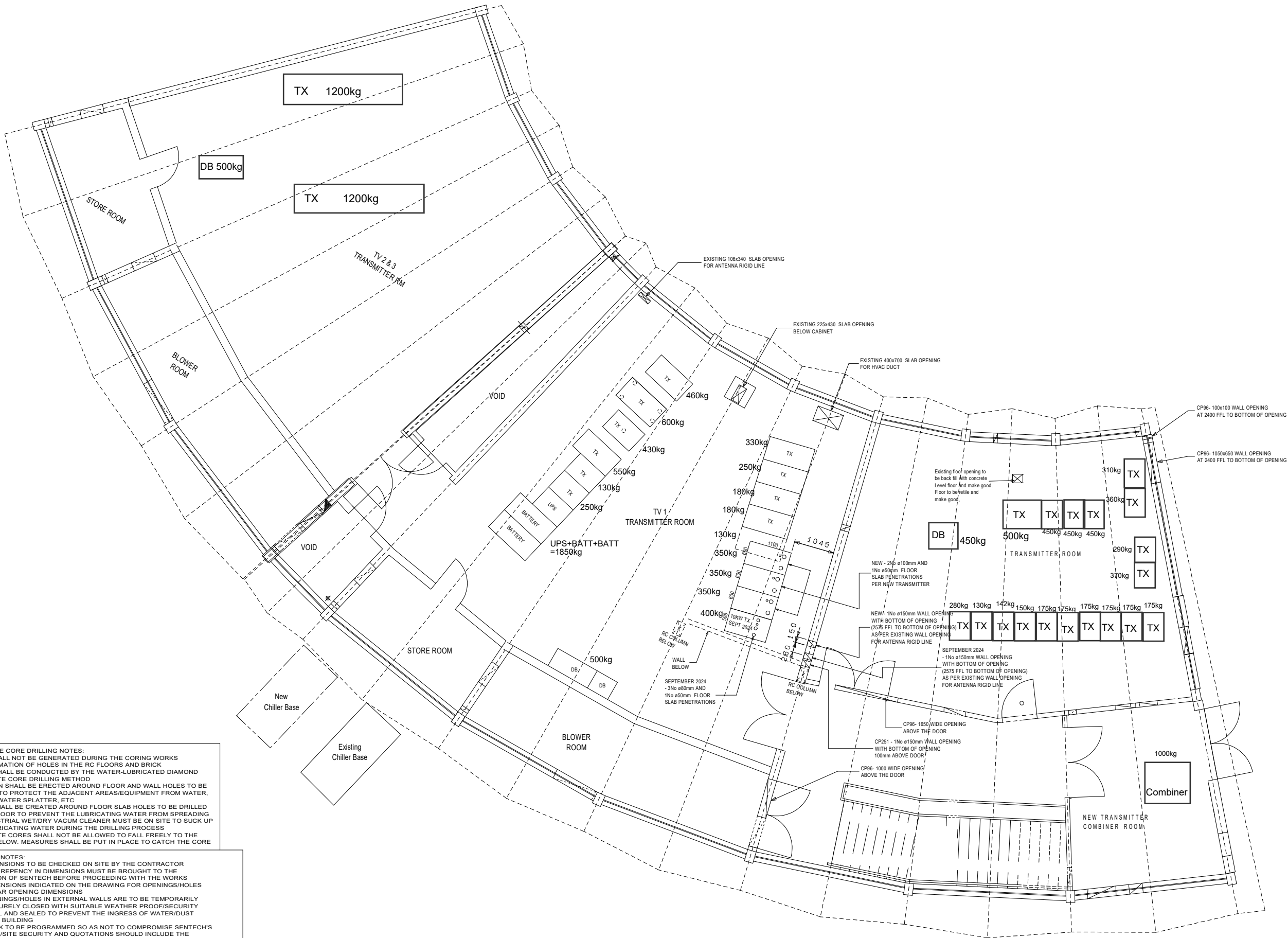
7. ABOUT CARBODUR® CALCULATION SOFTWARE

Engineered by

Sphera engineering s.r.l.
via Accursio n. 15
50125 Firenze (Italy)
www.spheraeng.com



ANNEXURE C



FIRST FLOOR

CONCRETE CORE DRILLING NOTES:
-DUST SHALL NOT BE GENERATED DURING THE CORING WORKS
-THE FORMATION OF HOLES IN THE RC FLOORS AND BRICK WALLS SHALL BE CONDUCTED BY THE WATER-LUBRICATED DIAMOND CONCRETE CORE DRILLING METHOD
-A SCREEN SHALL BE ERECTED AROUND FLOOR AND WALL HOLES TO BE DRILLED TO PROTECT THE ADJACENT AREAS/EQUIPMENT FROM WATER, DEBRIS, WATER SPLATTER, ETC
-A DAM SHALL BE CREATED AROUND FLOOR SLAB HOLES TO BE DRILLED IN THE FLOOR TO PREVENT THE LUBRICATING WATER FROM SPREADING
-AN INDUSTRIAL WET/DRY VACUUM CLEANER MUST BE ON SITE TO SUCK UP THE LUBRICATING WATER DURING THE DRILLING PROCESS
-CONCRETE CORES SHALL NOT BE ALLOWED TO FALL FREELY TO THE FLOOR BELOW. MEASURES SHALL BE PUT IN PLACE TO CATCH THE CORE

GENERAL NOTES:
-ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR
-ANY DISCREPANCY IN DIMENSIONS MUST BE BROUGHT TO THE ATTENTION OF SENTECH BEFORE PROCEEDING WITH THE WORKS
-THE DIMENSIONS INDICATED ON THE DRAWING FOR OPENINGS/HOLES ARE CLEAR OPENING DIMENSIONS
-ALL OPENINGS/HOLES IN EXTERNAL WALLS ARE TO BE TEMPORARILY AND SECURELY CLOSED WITH SUITABLE WEATHER PROOF/SECURITY MATERIAL AND SEALED TO PREVENT THE INGRESS OF WATER/DUST INTO THE BUILDING
-ALL WORK TO BE PROGRAMMED SO AS NOT TO COMPROMISE SENTECH'S BUILDING/SITE SECURITY AND QUOTATIONS SHOULD INCLUDE THE NECESSARY MEASURES TO CATER FOR THIS
-ALL SENTECH EQUIPMENT SHOULD BE PROTECTED FROM DUST, DEBRIS, WATER, ETC. QUOTATIONS SHOULD INCLUDE THE NECESSARY MEASURES TO CATER FOR THIS
-VERTICAL AND HORIZONTAL OPENING REVEALS TO BE REPROFIED WITH SIKA REP (OR SIMILAR APPROVED) TO PROVIDE CLEAR OPENINGS AS INDICATED ON DRAWINGS
-WHERE OPENINGS COINCIDE WITH A CAVITY PORTION OF A BRICK WALL, FILL THE CAVITY WITH EXPANDING POLYURETHANE FOAM AND ONCE CURED CUT FLUSH AND FINISH TO CLEAR OPENING SIZE
-MAKE GOOD ALL ADJACENT DAMAGED AREAS TO MATCH EXISTING FINISHES AND REMOVE ALL RUBBLE FROM SITE

WYSIGING BESKRYWING REVISION DESCRIPTION	SWAAR GETEKEN	DATE DATUM

GENESIS1S FILE : C:\MASTER-PLANS-BUILDINGS\

DWG STORED AS : T\T97\JOHANNESBURG\00A102B

OORSPRONKLIKE GROOTTE
ORIGINAL SIZE
A1

DO NOT SCALE. USE ONLY FIGURED DIMENSIONS WHICH
MUST BE CHECKED ON SITE. MOENIE SKAAL NIE. GEBRUIK
ALLENLIK GESYFERDE AFMETINGS WAT OP TERREIN NAGE-
GAAN MOET WORD.



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DRAWING TITLE/TEKENING TITEL
JOHANNESBURG T97
TV TRANSMITTER BUILDING
FIRST FLOOR PLAN

SKAAL	GETEKEN	NAGESIEN	GOEDGEKEUR	DATUM
1/50	GP	GP	GP	??/07/15
SCALE	DRAWN	CHECKED	APPROVED	DATE
INDEX N°	PROJ. N°			
INDEX N°	CP ???			
DRAWING N°/TEKENING N°				REV./WYS.
T09700/A/102B				-