

'STRUCTURAL AUDIT REPORT'

"S.P. MANDALI'S"
RAMNARAIN RUIA
AUTONOMOUS COLLEGE,
AT MATUNGA,
MUMBAI - 400 019.

V.V.JOSHI AND ASSOCIATES

Consulting Engineers
Mumbai



V. V. JOSHI AND ASSOCIATES CONSULTING ENGINEERS

5, Ishwar Bhavan, Liberty Garden Cross Road No.2,
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REF: 75/21
DATE: 16.03.2021

STRUCTURAL AUDIT REPORT FOR RUIA COLLEGE

PROFORMA 'B'			
Sub.	STRUCTURAL AUDIT		
Name of Consultant.	V.V.JOSHI		
1 Name Of Building	S P MANDALI'S RAMNARAIN RUIA AUTONOMOUS SENIOR COLLEGE		
2 C.T.S. No./Ward	CS NO 163/10 TO 179/10		
3 No of Storey	PART BASEMENT+GROUND +3 FLOORS		
4 Year of Construction	1937		
5 User Department	EDUCATIONAL INSTITUTE		
6 Mode Of Construction of existing bldg.			
i) Foundation	WALL FOUNDATIONS		
ii) Floors	RCC FLOOR SLABS		
iii) Walls	BRICK WALLS LOAD BEARING AND NON LOAD BEARING		
iv) Beams	RCC FLOOR BEAMS		
v) Columns	RCC COLUMNS		
vi) Roof	FLAT RCC ROOF AND PITCHED ROOF		
7 History of Repairs done year -wise-			
(a) Slab recasting	NOT REQUIRED		
(b) Column Jacketing	NOT REQUIRED		
i) Structural Repairs	2010-11		
ii) Tenantable Repairs	AS AND WHEN REQUIRED		
iii) Roof /Waterproofing	DONE		
iv) Plumbing	AS AND WHEN REQUIRED		
v) Additions/ Alterations if Any	MEZZANINES ADDED		
8 Date of Inspection by Consultant	25th FEBRUARY 2021		
9 Condition of			
i) Internal plaster	OK		
ii) External plaster	OK		
iii) Plumbing	SOME LEAKAGES ARE THERE		
iv) Drains lines/ chambers	OK		
10 a) Doors & windows don't close	DOORS AND WINDOWS GET CLOSED		
b) Columns & Steel exposed	NO COLUMNS CRACKS OBSERVED		
c) Settlement uneven flooring gaps between and skirting & floor	NO UNEVEN SETTLEMENT		
d) Foundation settlement	NO FOUNDATION SETTLEMENT OBSERVED		
e) Deflections/ sagging	NO SAGGING AND DEFLECTION		
f) Major cracks in column/ beams	NO MAJOR CRACKS		
g) Seepages/ Leakages	LEAKAGES ARE PRESENT		
h) Staircase area/ column condition	OK		
i) Lifts walls	OK		
j) U.G. Tank	NO PROBLEM IN THIS AREA		
k) OHT/ Column condition	NO PROBLEM IN THIS AREA		
l) Parapet at terraces	OK		
m) Chhajjas	SMALL CRACKS IN CHAJJAS		
n) Common areas	FOUND OK		
o) Toilet blocks	FOUND OK		
p) Terrace Water Proofing	OK		
12 Test carried out on structure/ observations there of	Findings	Range as per IS Code	
NDT a) Ultrasonic pulser velocity Test (m/sec)	2891.27	3500	
b) Rebound Hammer Test (Avg. Rebound value)	20.2	Fair	
c) Half Cell Potential Test (Mv)	-288	50% corrosion	
d) Carbonation Depth Test (mm)	24	10 to 13.5	
e) Core Test (MPa)	15.63		
f) Chemical Analysis (pH,Cl,SO3)	9, 0.5, 250 mg/l	Not Less than 8, <0.6, > 400mg/l	
g) Loss of thickness of structural members (%)		11.25%	



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13	Distress Mapping Plan & Photograph with caption below about description of structural member and its location	ARE ATTACHED WITH REPORT	
14	Brief Description of repairs to be done	POLYMER MODIFIED MORTAR REPAIRS	
	a) Water proofing	NOT NECESSARY	
	b) External plaster	NOT NECESSARY	
	c) Structural repairs		
	i) Column jacketing	NOT NECESSARY	
	ii) Slab recasting	NOT NECESSARY	
	iii) RCC cover to be replaced	NOT NECESSARY	
	iv) Beam recasting.	NOT NECESSARY	
	d) Partial Evacuation during repairs needed	NOT NECESSARY	
	e) Propping	NOT NECESSARY	
15	Conclusions Of Consultants	Observations	Key reason
	i) Whether structure is Livable/ of wheather it is to be evacuated/ pulled Down.	STRUCTURAL IS LIVABLE	
	ii) Whether structure requires tenantable repairs/ major structural repairs & its time frame	REPAIRS REQD	MINOR TENANTABLE REPAIRS
	iii) Whether Structure can be allowed to occupy during course of repairs	YES	YES
	iv) Nature/ Methodology of repairs.		APPLY POLYMER MODIFIED MORTAR
	v) Wheather Structure requires immediate propping if so its propping plan/ methodology given	NO	
	vi) Whether other immediate safety measures required -what is specific recommendation	NIL	
	vii) Enhancement in life of structure after required repairs /frequency of repairs required in extended life period		
	viii) projected repair cost/sq.ft		
	ix) projected reconstruction cost/sq.ft		
	x) specific remarks ,wheather building needs to be vacated/ demolished/ repairable.		
	xi) whether structure in exetremely critical condition		CRITICAL CONDITION
16	Critical Observation		
17	Classification of Bldg.	C3	Auditors Final conclusion
		C 1	To be evacuated demolition immediately.
		C2- A	To be evacuated and/or partial demolition requiring strctural repairs
		C2-B	No eviction only structural repairs
		C3	No eviction needs repairs only

Signature

Structural Auditor.

V. V. JOSHI
Consulting Engineer
M.C.G.M. Reg. No. STR/J/4



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DATE: 16.03.2021

PROFORMA 'B'			
Sub.	STRUCTURAL AUDIT		
Name of Consultant.	V.V.JOSHI		
1 Name Of Building	S P MANDALI'S RAMNARAIN RUIA AUTONOMOUS JUNIC COLLEGE		
2 C.T.S. No./Ward	CS NO 163/10 TO 179/10		
3 No of Storey	GROUND+4		
4 Year of Construction	1992		
5 User Department	EDUCATIONAL INSTITUTE		
6 Mode Of Construction of existing bldg.			
i) Foundation	OPEN FOUNDATION RCC		
ii) Floors	RCC		
iii) Walls	BRICK WALLS		
iv) Beams	RCC		
v) Columns	RCC		
vi) Roof	FLAT RCC ROOF		
7 History of Repairs done year -wise-			
(a) Slab recasting	NOT REQUIRED		
(b) Column Jacketing	NOT REQUIRED		
i) Structural Repairs	2010-11		
ii) Tenantable Repairs	AS AND WHEN REQUIRED		
iii) Roof /Waterproofing	DONE		
iv) Plumbing	AS AND WHEN REQUIRED		
v) Additions/ Alterations if Any	NOT DONE		
8 Date of Inspection by Consultant	26th FEBRUARY 2021		
9 Condition of			
i) Internal plaster	OK		
ii) External plaster	PLASTER CRACKS		
iii) Plumbing	SOME LEAKAGES ARE THERE		
iv) Drains lines/ chambers	OK		
10 a) Doors & windows don't close	DOORS AND WINDOWS GET CLOSED		
b) Columns & Steel exposed	COLUMN CRACKED AT SOME LOCATIONS		
c) Settlement uneven flooring gaps between and skirting, floor	NO UNEVEN SETTLEMENT FOUND		
d) Foundation settlement	NO FOUNDATION SETTLEMENT OBSERVED		
e) Deflections/ sagging	NO SAGGING AND DEFLECTION		
f) Major cracks in column/ beams	MAJOR CRACK IN ONE COLUMN		
g) Seepages/ Leakages	PRESENT AT SOME LOCATIONS		
h) Staircase area/ column condition	NO PROBLEM IN THIS AREA		
i) Lifts walls	NO PROBLEM IN THIS AREA		
j) U.G. Tank	NO PROBLEM IN THIS AREA		
k) OHT/ Column condition	MINOR CRACKS IN BOTTOM SLAB/COLUMNS		
l) Parapet at terraces	MINOR CRACKS IN PARAPET		
m) Chhajjas	CRACKS IN CHAJJA		
n) Common areas	OK		
o) Toilet blocks	OK		
p) Terrace Water Proofing	NO MAJOR DEFECT		
12 Test carried out on structure/ observations there of	Findings	Range as per IS Code	
NDT a) Ultrasonic pulser velocity Test (m/sec)	2842.45	3500	
b) Rebound Hammer Test (Avg. Rebound value)	27.7	Fair	
c) Half Cell Potential Test (Mv)	-310	50% corrosion	
d) Carbonation Depth Test (mm)	41	10 to 13.5	
e) Core Test (MPa)	20.78		



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	f) Chemical Analysis (pH,Cl,SO3)	9.5,0.4,150mg/l	Not Less than 8, <0.6, > 400mg/l
	g) Cement aggregate ratio	not possible as sample cannot be taken	
13	Distress Mapping Plan & Photograph with caption below about description of structural member and its location	ARE ATTACHED WITH REPORT	
14	Brief Description of repairs to be done	POLYMER MODIFIED MORTAR REPAIRS	
	a) Water proofing	NOT NECESSARY	
	b) External plaster	CRACK FILLING AND PATCH REPAIR	
	c) Structural repairs		
	i) Column jacketing	NOT NECESSARY	
	ii) Slab recasting	NOT NECESSARY	
	iii) RCC cover to be replaced	NECESSARY AT FEW PLACES	
	iv) Beam recasting.	NOT NECESSARY	
	d) Partial Evacuation during repairs needed	NOT NECESSARY	
	e) Propping	NOT NECESSARY	
15	Conclusions Of Consultants	Observa-tions	Key reason
	i) Whether structure is Livable/ of wheather it is to be evacuated/ pulled Down.	STRUCTURAL IS LIVABLE	
	ii) Whether structure requires tenantable repairs/ major structural repairs & its time frame	REPAIRS REQD	MINOR TENANTABLE REPAIRS
	iii) Whether Structure can be allowed to occupy during course of repairs	YES	
	iv) Nature/ Methodology of repairs.	APPLY POLYMER MODIFIED MORTAR	
	v) Wheather Structure requires immediate propping if so its propping plan/ methodology given	NO	
	vi) Whether other immediate safety measures required -what is specific recommendation	NIL	
	vii) Enhancement in life of structure after required repairs /frequency of repairs required in extended life period		
	viii) projected repair cost/sq.ft		
	ix) projected reconstruction cost/sq.ft		
	x) specific remarks , wheather building needs to be vacated/ demolished/ repairable.	No vacating the building during repairs	
	xi) whether structure in exetremely critical condition	CRITICAL CONDITION	
16	Critical Observation		
17	Classification of Bldg.	C3	Auditors Final conclusion
		C 1	To be evacuated demolition immediately.
		C2- A	To be evacuated and/or partial demolition requiring strctural repairs
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Signature

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