मेचीनगर नगरपालिका

नगर कार्यपालिकाको कार्यालय , ईटाभट्टा

झापा जिल्ला, कोशी प्रदेश नेपाल

प.सं. :२०८१/०८२

च नं. :2602

मिति :२०८१/१०/०९

बिषय : NBC २०६: २०२४ तथा Structure Analysis Checklist लागु गरिएको सुचना !

प्रस्तुत बिषयमा नेपाल सरकार ,शहरी विकास मन्त्रालयद्वारा NBC २०६:२०१५ Architectural Design Requirements लाई परिमार्जन गरि भवन ऐन ,२०५५ को दफा ५ को उपदफा २ बमोजिम परिमार्जित राष्ट्रिय भवन संहिता NBC २०६:२०२४ Architectural Design Requirements स्वीकृत गरि ऐ. ऐन को दफा १८ को उपदफा (१) बमोजिम राजपत्रमा समेत प्रकासित भइसकेकोमा, हालसम्म पनि पुरानै संहिता बमोजिम नक्सा पेस भएको देखिएको हुदा, उल्लेखित परिमार्जित राष्ट्रिय भवन संहिता र सो संग सम्बन्धित यसै सूचनासँग राखिएको अनुसूची १ बमोजिमको Checklist अनिवार्य रुपमा पेस गर्ने र राष्ट्रिय भवन संहिता बमोजिम RCC Structure Analysis प्रतिबेदन पेस गर्दा यसै सूचनासँग राखिएको अनसूची - २ बमोजिमको, भवन विभागबाट जारी भएको ढाचाँमा, Checklist पेश गर्नुहुन सम्बन्धित सबैमा जानकारीका लागि यो सुचना प्रकाशन गरिएको छ ।

होमनाथ भण्डारी

नि. प्रमुख प्रशासकीय अधिकृत

नि. प्रमुख प्रशासकीय अधिकृत

B. GENERAL CHECKLIST FOR NBC-206

	BUILDING ELEMENT	As per submitted Design	Remarks
1.	**CLASSIFICATION OF BUILDING**		
	Building Purpose		
	Subgroup		
2.	**MEANS OF EXIT**		
	Effective Occupant Load for exit calculation		
	Max. travel distance to exit point in each floor(m)		
	Min. width of exit door including frame (mm)		
	Min. height of the exit door including floor (mm)		
	No. of staircase and Ramps		
	Total Width of the Staircase/ Ramps(mm)		
	Tread of Staircase (in mm)		
	Riser of Staircase (in mm)		
	Max. no. of riser on one single flight (Nos)		
	Height of the Handrail (in mm)		
3	**COMPONENT OF BUILDING**		
3.1	Average Plinth height (mm)		
3.2	Room Height (m)		
3.3	Light & Ventilation		
	Min. ratio of opening area for natural light(O) to area of habitable room (A) – (O/A)		
	Min. ratio of opening area for natural ventilation (O) to area of habitable room(A) – (O/A)		
3.4	Lifts		
	Presence of fire lift	☐ Yes ☐ No	
	Size of Lift car(m)		
3.5	Basements		
	Percentage of vent. in basement		
3.6	Parking		
	Parking area allocated for each car (L X B) (mm)		
	Gradient of ramp for vehicle use		
4.	**BUILDING CATEGORY BASED ON HEIGHT**		
	Height of parapet wall or balcony handrail(m)		
	Provision of fire escape and fire safety	☐ Yes ☐ No	
5.	**DISABLED ACCESSIBILITY CATEGORY**	None/1/2/3	
	No. of floors accessible to wheelchair bound people		
	Max. gradient of ramp		
	Min. width of ramp(m)		

अनुसूची २

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1	Owner's Name:	
2	Address:	
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9	Name of the Consulting Firm:	

S. No.	Description	Input Data	Units	Remarks
A	Geometrical Configuration of Building:			
A.1	No. of Block		no.	
A.2	Number of Storeys Considered in the Design		no.	
A.3	Design Provision for Future Extension:	[ ] Yes [ ] No		
	(Future Extension No. of Additional Floors) If Yes			
A.4	Plan Shape of Individual Block			
A.5	Story Height:			
	i. Lower Basement		m	
	ii. Upper basement		m	
	iii. Ground Floor		m	
	iv. Typical Floor		m	
A.6	Total Height of Building Structure		m	
A.7	Height Considered of Fundamntal Time Period Calculation		m	
A.8	Length of Building (L)		m	
A.9	Width of Building (B)		m	
A.10	Height to Width Ratio of Building (H/W)			
A.11	Length to Width Ratio of Building (L/W)			
A.12	Parapet Height		m	
A.13	Wall Type (External & Internal)			
	i. External Wall + Plaster Thickness:		mm	
	ii. Internal Wall + Plaster Thickness:		mm	
	iii. Others...		mm	
A.14	External & Internal Wall Partition	[ ] Brick [ ] AAC [ ] Board [ ] Others		
A.15	No. of Column (Plinth Area):		no.	
A.16	No. of Lift:		no.	
A.17	Type of Lift Casing Material According to Construction Materials			
A.18	No. of Staircase:		no.	
A.19	Type of Staircase According to Construction Materials			
A.20	Roof System:			
B	Defining Basic Material Properties of the Building.			
B.1	Material Properties			
	a) Characteristics Strength of Concrete Grade:			Clause 2.1
	i. Columns		MPa	Annex A

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S. No.	Description	Input Data	Units	Remarks
	ii. Beams		MPa	
	iii. Slabs		MPa	
	iv. Shear Wall (If Applicable)		MPa	
	v. Foundations (If Applicable)		MPa	
	vi. Pile Foundations (If Applicable)		MPa	
	b) Characteristics Strength of Rebar Grade:			Clause 2.1 (A)
	i. Flexural Reinforcement		MPa	
	ii. Confinement Reinforcement (Ties)		MPa	
B.2	Density of Materials:			NBC 101:1994
	i. Weight Density of Concrete		kN/m3	
B.3	Mechanical Properties of Construction Materials:			NBC 101:1994
	i. Masonry Weight		kN/m3	
	ii. Rebar Weight per Unit		kN/m3	
	iii. Other...		kN/m3	
B.4	Load Patterns Considered			
	a) Dead Loads			NBC 102:1994
	Self-weight, Wall Load, Floor Finishing, Partition Load, Parapet Walls, Staircase Dead	[ ] Yes [ ] No		
	Other ...			
	b) Imposed Loads			NBC 103:1994
	Floor Live Loads (Non-Storage Type and Storage Type), Roof Live Load, Staircase Live	[ ] Yes [ ] No		
	Others ...			
	c) Wind Load	[ ] Yes [ ] No		NBC 104:1994
	If No			
	Note: For this Building, The Seismi Load was found larger than Wind Load. Hence, The Wind Load was not Accounted for Design of the Building.			
B.5	Detailed Load Calculations			NBC 101:1994
	i. Detailed Load Calculations	[ ] Yes [ ] No		
B.6	Direction & Eccentricity			Clause 5.7
	i. X Direction:	[ ] Yes [ ] No		

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S. No.	Description	Input Data		Units	Remarks
	ii. X Direction + Eccentricity:	[ ] Yes [ ] No			
	iii. X Direction - Eccentricity:	[ ] Yes [ ] No			
B.7	Accidental Eccentricity	X-direction	Y-direction		Clause 5.7
	i. Acc. Eccentricity Considered in X and Y-Direction			%	
B.8	Story Range				From Software
	i. Top Story :				
	ii. Bottom Story :				
B.9	Load Combinations:				Clause 3.6
	a) For Parallel System				Clause 3.6.1
	i. 1.2*DL+1.5*LL	[ ] Yes [ ] No			
	ii. DL + λLL ± EX	[ ] Yes [ ] No			
	iii. DL + λLL ± EY	[ ] Yes [ ] No			
	b) For Non-Parallel System				Clause 3.6.2
	i. 1.2*DL+1.5*LL	[ ] Yes [ ] No			
	ii. DL+ λLL ± (EX ± 0.3*EY)	[ ] Yes [ ] No			
	iii. DL+ λLL ± (EY ± 0.3*EX)	[ ] Yes [ ] No			
	c) Others				
	i.				
	ii.				
	iii.				
B.10	Mass Source Considered for Seismic Weight				Clause 5.2
	i. Storage (0.6)	[ ] Yes [ ] No			Table 5-1
	ii. For Other Propose (0.3)	[ ] Yes [ ] No			
	iii. Roof (Nil)	[ ] Yes [ ] No			
B.11	For System with Vertical Acceleration Consideration				
	Is the Vertical Acceleration included in the load combination ?	[ ] Yes [ ] No			Clause 4.3
	If Yes				
B.12	Modal Damping:			%	Clause 1.3
C	Calculation of Seismic Load as per (NBC 105:2020)				

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S. No.	Description	Input Data		Units	Remarks
C.1	Structural System:	[ ] Equivalent Static Method (ESM) [ ] Modal Response Spectrum Method (MRSM)			Clause 6 Clause 7
C.2	Seismic Zoning Factor, (Z)				Clause 4.1.4 / T. 4-5
C.3	Type of Building				
C.4	Importance Class (I, II, III)	[ ] I [ ] II [ ] III			Clause 4.1.5
C.5	Importance Factor, (I)				Table 4-6
C.6	Height of the Building, (H)			m	
C.7	Type of Structure	[ ] Moment Resisting Concrete Frame Systems [ ] Moment Resisting Steel Frame Systems [ ] Braced Frame Systems [ ] Structural Wall Systems [ ] Dual Systems			Clause 5.4.2
C.8	Factor, k_t=				Clause 5.1.2
C.9	Approximate Fundamental Time Period Empirical Equation, $T_1=kt*H_{0.75}$			sec	
C.10	Amplification of Approximate Time Period, $T_1'=1.25*T1$			sec	Clause 5.1.3
C.11	Fundamental Time Period from Rayleigh's Formula, T_1			sec	Clause 5.1.1
C.12	Adopted Time Period, T_1 (Refer C.10)			sec	Clause 5.1.2
C.14	Spectral Shape Factor:				
	i. Site Sub-Soil Type	C	D		Clause 4.1.3
	ii. Spectral Shape Factor, $C_h(T)$ for ESM	2.5	2.25		Clause 4.1.2
	iii. The Lower Period of the Flat Part of the Spectrum, T_a for ESM	0			Table 4-1
	iv. The Lower Period of the Flat Part of the Spectrum, T_a for RSM	0.1	0.5		
	v. The Upper Period of the Flat Part of the Spectrum,T_c	1	2		
	vi. Peak Spectral Acceleration Normalized by PGA, α	2.5	2.25		
	vii. Coefficient that Controls the Descending Branch of the Spectrum, K	1.8	0.8		
C.15	Calculation of Elastic Site Spectra				
	a) Elastic Site Spectra for Horizontal Loading for Ultimate Limit State (ULS)				Clause 4.1.1
	$C(T)= Ch(T)*Z*I=$				
	b) Elastic Site Spectra for Horizontal Loading for Serviceabilty Limit State (SLS)				Clause 4.2
	$C_s(T)= 0.20*C(T)=$				
	c) Elastic Site Spectra for Vertical Loading,				Clause 4.3
	$C_v(T_v)= (2/3)*C(T)=$				
C.16	Ductility & Overstreogth Factors:				

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S. No.	Description	Input Data		Units	Remarks
	a) Ultimate Limit State (ULS):				Clause 5.3.1 / 5.4.1
	i. Ductilty Factor for ULS, R_μ				Table 5-2
	ii. Overstrength Factor for ULS, Ω_μ				
	b) Serviceability Limit State (SLS):				Clause 5.3.2 / 5.4.2
	i. Ductilty Factor for SLS, R_s				Table 5-2
	ii. Overstrength Factor for SLS, Ω_s				
C.17	Calculation of Horizontal Base Shear Coefficients:				Clause 6.1
	a) For Ultimate Limit State (ULS), $C_d(T_1)$= C(T1)/(R_μ*Ω_μ)		(Seismic Coefficient)		Clause 6.1.1
	b) Serviceabilty Limit State (SLS), $C_d(T_1)$= Cs(T1)/Ω_s		(Seismic Coefficient)		Clause 6.1.2
C.18	Calculation of Horizontal Base Shear:				
	a) Seismic Weight, W			kN	(From ETABS)
	b) For Ultimate Limit State (ULS), V= Cd(T1)*W			kN	Clause 6.2
	c) For Serviceabilty Limit State (SLS), V= Cd(T1)*W			kN	
C.19	Exponent for Vertical Distribution of Seismic Forces	T	K		Clause 6.3
	i. For Structure having Tie Period T < 0.5 sec, k=1	0.5	1		
	ii. Exponent for Vertical Distribution of Seismic Forces, k			k	
	iii. For Structure having Tie Period T < 2.5 sec, k=2	2.5	2		
C.20	Initial Scale Factor for Scaling of Base Shear in MRSM				
	Acceleration due to gravity (g) =	9810		m/sec	
	a) Ultimate Limit State:				Clause
	i. Factor in X-direction, SFx= Z*I*g/(R_μxΩ_μ)				
	ii. Factor in Y-direction, SFy= Z*I*g/(R_μxΩ_μ)				
	b) Serviceabilty Limit State:				
	i. Factor in X-Direction, SFx= 0.2*Z*I*g/(R_μxΩ_μ)				
	ii. Factor in Y-Direction, SFy= 0.2*Z*I*g/(R_μxΩ_μ)				

D	Modeling of the Building		
D.1	Software used for design of structure along with version :		Version
D.2	Element Sizes:		From Software
	i. Column Sizes		

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S. No.	Description	Input Data	Units	Remarks
	ii. Main Beam Sizes			
	iii. Secondary Beam Sizes			
	iv. Slab Thickness			
	v. Staircase Waist Slab Thickness			
	vi. Shear Wall Thickness (if applicable)			
D.3	Types of Slabs:	[ ] Slab [ ] Drop [ ] Ribbed [ ] Waffle		From Software
D.4	Slab Modeling Type:	[ ] S-Thin [ ] S-Thick [ ] Membr. [ ] Layered		From Software
D.5	Property/Stiffness Modifiers:			Clause 3.4 Table 3-1
	a) Columns:	Flexural Stiff.	Shear Stiff.	
	i. Shear Area in 2 Direction			
	ii. Shear Area in 3 Direction			
	iii. Moment of Interia about 2 Axis			
	vi. Moment of Interia about 3 Axis			
	b) Main Beams & Secondary Beams:	Flexural Stiff.	Shear Stiff.	Clause 3.4 Table 3-1
	i. Shear Area in 2 Direction			
	ii. Shear Area in 3 Direction			
	iii. Torsional Costant			
	iv. Moment of Interia about 2 Axis			
	v. Moment of Interia about 3 Axis			
	c) Shear Wall:	Flexural Stiff.	Shear Stiff.	Clause 3.4 Table 3-1
	Stiffness of Cracked or Un-Cracked	[ ] Cracked [ ] Un-Cracked		
	i. Membrane F11 Direction			
	ii. Membrane F22 Direction			
	iii. Membrane F12 Direction			
	iv. Bending M11 Direction			
	v. Bending M22 Direction			

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S. No.	Description	Input Data		Units	Remarks
	vi. Bending M12 Direction				
	vii. Shear V13 Direction				
	viii. Shear V23 Direction				
	Note: Please note that the modifiers for shear for both beam & column shall be taken as 1 since the modifiers are expressed in terms of shear modulus in SAP2000 & ETABS, $G=E/[2*(1+\mu)]=0.4*E$				
D.6	Slab Diaphragm Type:	[ ] Rigid [ ] Semi-Rigid			Clause 5.5.2.3
D.7	Modal Combination Method:	[ ] CQC [ ] SRSS			Clause 7.4
D.8	Support Condition of the Foundation:	[ ] Fixed [ ] Hinge [ ] Roller			From Software
E	Result for Analysis of Building				
E.1	Auto Seismic User Coefficient	Weight	Base Shear		
	i. EqX-ULS			kN	
	ii. EqY-ULS			kN	From Software
	iii. EqX-SLS			kN	
	iv. EqY-SLS			kN	
E.2	Base Reaction				
	a) For Ultimate Limit State:	FX (kN	FY		From Software
	i. EqX-ULS (Linear Static)			kN	
	ii. EqY-ULS (Linear Static)			kN	
	iii. RsX-ULS(Linear Response Spectrum)			kN	
	iv. RsY-ULS (Linear Response Spectrum)			kN	
	b) For Serviceability Limit State:	FX	FY		
	i. EqX-SLS (Linear Static)			kN	From Software
	ii. EqY-SLS (Linear Static)			kN	
	iii. RsX-SLS (Linear Response Spectrum)			kN	
	iv. RsY-SLS (Linear Response Spectrum)			kN	
E.3	Final Scale Factor (When VR<V) (After Scaling):				Clause 7.5
	a) For Ultimate Limit State:				
	i. Factor in X - Direction= $(V_{ULS}/V_{RS})*SF_{scale,ULS}$			kN	
	ii. Factor in Y - Direction= $(V_{ULS}/V_{RS})*SF_{scale,ULS}$			kN	
	b) For Serviceability Limit State:				

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S. No.	Description	Input Data		Units	Remarks
	i. Factor in X - Direction= $(V_{SLS}/V_{R,SLS})*SF_{initial,\ SLS}$			kN	
	ii. Factor in Y - Direction= $(V_{SLS}/V_{R,SLS})*SF_{initial,\ SLS}$			kN	
E.4	Mass Participation Ratio	Acceleration Unit (mm/sec2)			Clause 7.3
	a) No. of Modes Considered				
	Modal	Sum Ux	Sum Uy		
	i. 1st Modes Considered			mm/sec2	
	ii. 2nd Modes Considered			mm/sec2	
	iii. 3rd Modes Considered			mm/sec2	
	iv. Last Modes Considered for at least 90%			mm/sec2	
	b) The Modes with Natural Frequency less than 33 Hz			Hz	
E.5	Story Displacement of Building				Clause 5.6.1
	a) For Ultimate Limit State: (ULS: 0.025 * H) Permissible	Eq-X / Rs-X	Eq-Y / Rs-Y		
	15th Floor			mm	
	14th Floor			mm	
	13th Floor			mm	
	12th Floor			mm	
	11th Floor			mm	
	10th Floor			mm	
	9th Floor			mm	
	8th Floor			mm	
	7th Floor			mm	
	6th Floor			mm	
	5th Floor			mm	
	4th Floor			mm	
	3rd Floor			mm	
	2nd Floor			mm	
	1st Floor			mm	
	b) For Serviceability Limit State: (SLS: 0.006 * H) Permissible	Eq-X / Rs-X	Eq-Y / Rs-Y		
	15th Floor			mm	
	14th Floor			mm	Clause 5.6.1
	13th Floor			mm	
	12th Floor			mm	
	11th Floor			mm	

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S. No.	Description	Input Data		Units	Remarks
	10th Floor			mm	
	9th Floor			mm	
	8th Floor			mm	
	7th Floor			mm	
	6th Floor			mm	
	5th Floor			mm	
	4th Floor			mm	
	3rd Floor			mm	
	2nd Floor			mm	
	1st Floor			mm	
E.6	Inter Story Deflection (Drifts)				Clause 5.6.3
	a) For Ultimate Limit State: (ULS: 0.025 Permissible)	Eq-X / Rs-X	Eq-Y / Rs-Y		
	15th Floor				
	14th Floor				
	13th Floor				
	12th Floor				
	11th Floor				
	10th Floor				
	9th Floor				
	8th Floor				
	7th Floor				
	6th Floor				
	5th Floor				
	4th Floor				
	3rd Floor				
	2nd Floor				
	1st Floor				
	b) For Serviceabilty Limit State: (SLS: 0.006 Permissible)	Eq-X / Rs-X	Eq-Y / Rs-Y		Clause 5.6.3
	15th Floor				
	14th Floor				
	13th Floor				
	12th Floor				
	11th Floor				
	10th Floor				

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9	Name of the Consulting Firm:	

S. No.	Description	Input Data		Units	Remarks
	9th Floor				
	8th Floor				
	7th Floor				
	6th Floor				
	5th Floor				
	4th Floor				
	3rd Floor				
	2nd Floor				
	1st Floor				
E.7	Weak Story for Ultimate Limit State (ULS)	> 80% EL(i+1)			Clause 5.5.1.1
		Lateral Strength			
	15th Floor			kN	
	14th Floor			kN	
	13th Floor			kN	
	12th Floor			kN	
	11th Floor			kN	
	10th Floor			kN	
	9th Floor			kN	
	8th Floor			kN	
	7th Floor			kN	
	6th Floor			kN	
	5th Floor			kN	
	4th Floor			kN	
	3rd Floor			kN	
	2nd Floor			kN	
	1st Floor			kN	
E.8	Storey Stiffness (Soft Story)	Eq-X / Rs-X	Eq-Y / Rs-Y		Clause 5.5.1.2
		70% of (i±1)	70% of (i±1)		
	15th Floor			kN/m	
	14th Floor			kN/m	
	13th Floor			kN/m	
	12th Floor			kN/m	
	11th Floor			kN/m	
	10th Floor			kN/m	

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S.No.	General Informtion:	
1	Owner's Name:	
2	Address:	
3	Location of Building	
4	Occupancy Type of the Building as per Byelaws:	
5	Name of the Structural Designer:	
6	Nepal Engineeering Council No.:	
7	Contact Number of the Structural Designer:	
8	E-Mail ID of Designer:	
9	Name of the Consulting Firm:	

S. No.	Description	Input Data		Units	Remarks
	9th Floor			kN/m	
	8th Floor			kN/m	
	7th Floor			kN/m	
	6th Floor			kN/m	
	5th Floor			kN/m	
	4th Floor			kN/m	
	3rd Floor			kN/m	
	2nd Floor			kN/m	
	1st Floor			kN/m	
E.9	Mass Irregularity (Kg)	Kg	50% EL(i+1)		Clause 5.5.1.5
	15th Floor				
	14th Floor				
	13th Floor				
	12th Floor				
	11th Floor				
	10th Floor				
	9th Floor				
	8th Floor				
	7th Floor			kg	
	6th Floor			kg	
	5th Floor			kg	
	4th Floor			kg	
	3rd Floor			kg	
	2nd Floor			kg	
	1st Floor			kg	
E.10	Torsion Irregularity for Ultimate Limit State (ULS):	Eq-X / Rs-X	Eq-Y / Rs-Y		Clause 5.5.2.1
	Max Corner Displacement			mm	
	Min Corner Displacement			mm	
	Ratio				
E.11	Check for Re-entrant Corner Irregularity	[ ] Yes [ ] No			Clause 5.5.2.2
E.12	Check for Diaphragm Discontinuity Irregularity	[ ] Yes [ ] No			Clause 5.5.2.3
E.13	Check for Out-of-Plane Offset Irregularity	[ ] Yes [ ] No			Clause 5.5.2.4
E.14	Dual System Check	X-Direction	Y-Direction		Clause 3.1

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1	Owner's Name:	
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7	Contact Number of the Structural Designer:	
8	E-Mail ID of Designer:	
9	Name of the Consulting Firm:	

S. No.	Description	Input Data		Units	Remarks
	Percentage of Total Design Base Shear by Columns in X and Y Direction			%	
E.15	Separation between Blocks (if applicable)	[ ] Yes [ ] No			
	If Yes	Block A	Block B		
	15th Floor			mm	
	14th Floor			mm	
	13th Floor			mm	
	12th Floor			mm	
	11th Floor			mm	Clause 5.6.2
	10th Floor			mm	
	9th Floor			mm	
	8th Floor			mm	
	7th Floor			mm	
	6th Floor			mm	
	5th Floor			mm	
	4th Floor			mm	
	3rd Floor			mm	
	2nd Floor			mm	
	1st Floor			mm	

F	Geological Investigation and Design of Foundations			
F.1	Geological Investigation Conducted	[ ] Yes [ ] No		
	If Yes	See Below		
F.2	Name of the Consulting Firm:			
F.3	Name of Designer:			
F.4	NEC Council No.:			
F.5	Designer Master Degree:	[ ] Yes [ ] No		
F.6	Allowable Bearing Capacity of Soil		kN/m2	Soil Report
F.7	N-value:			
F.8	Type of Soil:			Clause 4.1.3
F.9	Water Table:			Soil Report
F.10	Liquefaction Potential:	[ ] Yes [ ] No		
F.11	Adopted Value as per NBC 205, Table 3-1	[ ] Yes [ ] No		NBC 205 T:3-1
F.12	Site Considertion as per NBC 108 ?	[ ] Yes [ ] No		NBC 108:1994
	If No			
F.13	Terrain (Slope or Flat)			NBC 108:1994

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3	Location of Building	
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6	Nepal Engineering Council No.:	
7	Contact Number of the Structural Designer:	
8	E-Mail ID of Designer:	
9	Name of the Consulting Firm:	

S. No.	Description	Input Data	Units	Remarks
F.14	Software used for design of foundation along with version :			Version
F.15	Foundation System	[ ] Mat [ ] Combined [ ] Isolated [ ] Strap [ ] Pile		
F.16	Calculated Maximum Pressure on Foundation:		kN/m	From Software
F.17	Thickness of Foundation		mm	
F.18	Punching Shear Ratio (Less than 1)			
G	Design of Structural Elements of Concrete			
G.1	a) Reinforced Concrete Design Code:			Reference Code
	i. Concrete Design Code Referred:	[ ] IS 456:2000		
	ii. Design & Detailing of Reinforced Concrete Structures:	[ ] NBC 105:2020 (Annex - A)		
	iii. Design of Structural Elements Foundation, Slab, Staircase, etc:	[ ] IS 456:2000		
	iv. Others...			
G.2	Member Design			
	a) Check for All Members Passed or Failed	[ ] Yes [ ] No		From Software
	If No	Design/Check Again		
	i. Design of Columns	[ ] Yes [ ] No		
	ii. Design of Beams	[ ] Yes [ ] No		
	iii. Design of Shear Wall (if applicable)	[ ] Yes [ ] No		Clause 5.2/5.3 (A)
G.3	Design of Tie/Plinth Beam	[ ] Yes [ ] No		Manual Calcuations
G.4	Design of Critical Panel of Slabs	[ ] Yes [ ] No		
G.5	Design of Cantilever Slabs (Without Beam Supports)	[ ] Yes [ ] No		
G.6	Design of Waffle Slabs	[ ] Yes [ ] No		
G.7	Design of Deep Beams	[ ] Yes [ ] No		
G.8	Design of Corbel	[ ] Yes [ ] No		
G.9	Design of Cantilever Beams	[ ] Yes [ ] No		
G.10	Design of Staircases (Dog Legged, Open-well & Helical)	[ ] Yes [ ] No		
G.11	Design of Foundations (Isolated, Combined, Strap Footing)	[ ] Yes [ ] No		
G.12	Design of Pile Foundations	[ ] Yes [ ] No		
G.13	Design of Retaining Wall	[ ] Yes [ ] No		
G.14	Deflection Check for Critical Beam (For Span< 6 m)			Manual Calcuation
	Design of Long & Short Term Deflection and Crack Width	[ ] Yes [ ] No		
G.15	Check for Column-Beam (C/B) Capacity Ratio	[ ] Yes [ ] No		Clause 4.4.4
	If No	Provide 3 Critical Samples		Manual Calcuation
G.16	Check for Beam-Column Joints	[ ] Yes [ ] No		Clause 4.4
G.17	Column Size on Basis of Horizontal Development Length		mm	Clause 4.4.2

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5	Name of the Structural Designer:	
6	Nepal Engineering Council No.:	
7	Contact Number of the Structural Designer:	
8	E-Mail ID of Designer:	
9	Name of the Consulting Firm:	

S. No.	Description	Input Data	Units	Remarks
G.18	Minimum Diameter of Transverse Rebar in Beam/Column on Basis of Lapping/Splicing Zone		mm	Clause 4.5.1 (g)
G.19	Minimum Diameter of Special Confining Column Ties For Rectangular/Square/Circular Column		mm	Clause 4.3- (4.3.2/4.33)
G.20	Design of Other Members:			
	Detailed Design of other Structural Members such as Roof Truss, Steel Structural Members etc (if any)	[ ] Yes [ ] No		
G.22	Check for Max. & Min. Percentage of Reinforcement			Clause 4.2.2
	i. Max. Percentage of Rebars provided in Columns		%	
	ii. Max. Percentage of Rebars provided in Beams		%	
	iii. Max. Percentage of Rebars provided in Shear Walls		%	