



**ODISHA FIRE & EMERGENCY SERVICE**  
**FIRE SAFETY RECOMMENDATION**

**FORM-II**

[Under Rule-12 (5)]



<b>RECOMMENDATION No:</b>	RECOMM1101020042023001152	<b>APPLICATION No:</b>	FSR11010200420230000020
<b>Date of Issue:</b>	01-04-2023	<b>Date of Receipt of Application:</b>	25-03-2023

1.	Name & Address of the proposed Building/Premises:	Proposed B+2S+21 floors MIG Residential Apartment Building consisting of 04 towers (Tower-1, 2, 3 & 4), S+14 floors EWS Residential Building, B+G+3 floors Commercial Building and G+2 floors Club House building of M/s. Laxmi Infraventure Pvt. Ltd., over plot no. 1390, 1380/3003 & others, Khata No. 498/111, Mouza- Nuahat, Cuttack.
2.	Name and Address of the Applicant(s):	Sri Rajesh Kumar Nayak, Managing Director, M/s Laxmi Infra Venture Pvt. Ltd, S/o- Surendra Nayak, Plot No. 893/1457, GGP Colony, Rasulgarh, Bhubaneswar-751010.
3.	Proposed Occupancy (Type of Building):	1) As per plan, the proposed B+2S+21 floors MIG Residential Apartment Building consisting of 04 towers (i.e. Tower-1, 2, 3 & 4), S+14 floors EWS Residential Building and G+2 floors club house building (i.e. incidental to main occupancy) are coming under "Residential Building" as per Odisha Development Authorities (Planning and Building Standards) Rules, 2020 and Residential Building (Group-A) Sub-Division-A4 as per NBCI-2016. AND 2) The proposed B+G+3 floors Commercial Building is coming under "Business (office) Building" and "Mercantile Building" as per Odisha Development Authorities (Planning and Building Standards) Rules, 2020 and Mixed Occupancy Building (Group-E & F) Sub-Division-E1 & F2 respectively as per NBCI-2016.
4.	Area with Plot Number and Khata	Plot Area – 23322.41 sqm. (Ac. 5.76 dec.) over Plot No. 1390, 1380/3030&



	Number:	others, Khata No. 498/111
5.	Date of Inspection:	28-03-2023

## 6. Recommendation:

The Fire Safety Recommendation for the following building(s) is/are as follows: -

A.	Structural and construction site requirements:	
i.	Details of the building(s) like height, no. of floors, area on each floor, built up area, etc	<p>B+2S+21 floors MIG Residential Apartment (04 Towers)</p> <ol style="list-style-type: none"> <li>1) Basement- 10475.891 sqm- Parking, Electric Room &amp; STP/ Pump Area,</li> <li>2) Lower Stilt(Stilt-1- 5794.529 sqm- Parking &amp; Electrical Room,</li> <li>3) Upper Stilt (Stilt-2)- 6115.733 sqm- Parking &amp; Electrical Room,</li> <li>4) Podium/ 1st floor- 4135.6 sqm- Creche, Library/ Reading Room, Video Gaming Room, Kids Play Area, Senior Citizen Siting Deck, Indoor Game Space, Yoga Lawn, Meditation Studio, Laundry Service, Gymnasium Space, Locker Room, Kitchen, Pool Deck Area, Cafeteria, Massage Room, SPA/ Beauty Parlour, Society Office, Guest Room &amp; Mini Theatre,</li> <li>5) 2nd to 21st floors of each tower (i.e. T1, T2, T3 &amp; T4)- 964.315 sqm each- Residential</li> <li>6) Terrace floor- Open to sky.</li> </ol> <p>G+2 floors Club House Building</p> <ol style="list-style-type: none"> <li>1) Ground floor- 672.96 sqm- Multipurpose Hall, Sit Out Room &amp; Lounge,</li> <li>2) 1st floor- 293.10 sqm- Drivers Rest Lounge &amp; Filtration Room Swimming Pool</li> <li>3) 2nd floor- 137.57 sqm- Changing Room,</li> <li>4) Terrace Floor- Open to sky.</li> </ol> <p>S+14 floors LIG Residential Apartment Building</p> <ol style="list-style-type: none"> <li>1) Stilt Floor- 670.75 sqm- Parking,</li> <li>2) 1st to 14th floor- 601.461 sqm each- Residential,</li> <li>3) Terrace Floor- Open to sky,</li> </ol> <p>B+G+3 floors Commercial Building</p> <ol style="list-style-type: none"> <li>1) Basement floor- 1088.85 sqm- Parking, Electrical Room &amp; Services,</li> <li>2) Ground floor- 1109.904 sqm- Shops &amp; Electrical Room,</li> <li>3) 1st floor- 1012.626 sqm- Shops &amp; Electrical Room,</li> <li>4) 2nd floor- 990.095 sqm- Office Space &amp; Restaurant,</li> <li>5) 3rd floor- 915.742 sqm- Office Space &amp; Restaurant,</li> <li>6) Terrace floor- Solar Panel,</li> </ol> <p>The height of the aforesaid proposed buildings/ towers are as follows from ground level of the respective building/ tower.</p> <ol style="list-style-type: none"> <li>1) B+2S+21 floors MIG Residential Apartment (04 Towers)- 69.45 mtrs of each tower (T1, T2, T3 &amp; T4)</li> <li>2) G+2 floors Club House Building- 9.3 mtrs.</li> <li>3) S+14 floors LIG Residential Apartment Building- 45 mtrs.</li> <li>4) B+G+3 floors Commercial Building- 19.50 mtrs.</li> </ol> <p>Besides, as per Rule- 39 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020, the height of stilt floor and basement floor of the respective building/ tower shall not be included in the height of the said building, if the height of the ceiling of the stilt floor/ basement roof is not exceeding 2.4 meters and 1.5 mtrs respectively.</p>
ii.	Parking	<p>Provision of parking area at basement floor and stilt floor of the respective building/ tower have been shown in the proposed plan. The off-street parking space to be provided shall be in addition to the minimum open space (setbacks) as required under Rule- 33 (1) Table-6 of ODA (P &amp; BS) Rules, 2020.</p> <p>Provision of parking shall be made in accordance to Rule-37 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.</p>
iii.	Access To The Building	<p>As per plan, the proposed building abuts on a road of width 12.19 mtrs. at two side of the proposed site. Further, there is a proposed road of 24.39 mtrs has been shown in the plan, which shall be made as per Rule-31 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.</p> <p>As per Odisha Development Authorities (Planning and Building Standards) Rules, 2020, the main entrance to the premises shall not be less than 06 (six) meters in width in order to allow easy access to fire engine and the gate shall fold back against the compound wall of the premises, thus leaving the exterior access way, within the plot, free for the movement of fire</p>



		<p>service vehicles. If archway is provided over the main entrances, the height of the archway shall not be less than 5 (five) meters. But, there is provision of two entry/ exit gates of width 12 mtrs. and 09 mtrs, which shall be made as per Rule-71 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.</p>
<p>iv.</p>	<p>Open spaces/ set back (In Mtrs.) Considering the open space from the entry and exit of commercial gate.</p>	<p>Provision of following open space/setbacks have been shown in the plan as per Rule-33 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.</p> <p>B+2S+21 floors MIG Residential Apartment (Tower-1,2,3 &amp; 4) &amp; G+2 floors Club House Building  Front-Max.15 mtrs &amp; Min. 11.47 mtrs,  Rear- Not mentioned, Left-max.- 11.77 mtrs &amp; Min.- 09 mtrs and  Right-Max.- 12.28 mtrs &amp; min. 09.30 mtrs.</p> <p>S+14 floors LIG Residential Apartment  Front-10.86 mtrs, Rear-Max. 11.63 mtrs &amp; Min. 09 mtrs,  Left- Not mentioned &amp; Right- Max. 17.59 mtrs &amp; min. 15.12 mtrs</p> <p>B+G+3 floors Commercial Building  Front-Not mentioned, Rear- max. 9.01 mtrs &amp; min. 8.22 mtrs,  Left- Not mentioned &amp; Right- 8.28 mtrs</p> <p>Besides, the dimension of open space at rear side of B+2S+21 floors MIG residential building, left side of S+14 floors LIG residential building and front &amp; left side of commercial building have not been shown. However, the provision of open space at the respective sides shall be made as per Rule-33 of ODA (P &amp; BS) Rules, 2020. Hence, the required open space shall be provided accordingly. The provision of drive way and open space shall be made from the building line. Further, the provision of open space and drive way for the tower like structures shall be made as per NBCI, 2016 and ODA (P &amp; BS) Rules, 2020.</p> <p>The space set apart for providing access within the premises shall not be used as parking space or spaces for other amenities required for the building. The entire setback / driveway shall be kept unbuilt. It shall be constructed of hard surface capable of taking load of fire engine weighing up to 45 tonnes.</p> <p>As per Rule-33 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020, driveway around the aforesaid building shall be provided and load bearing capacity certificate from the competent authority shall be obtained to that effect.</p> <p>The provision of buildings on podium and its active and passive fire fighting measures shall be as per Clause- 4.6.1 of NBCI, 2016 (Part-3). Accordingly, the drive way, provision of ramp, use of podium, parapet wall, etc. of podium floors and other provisions shall be made.</p>
<p>v.</p>	<p>Exits (Type, Number, Dimension &amp; Ramp Arrangement)</p>	<p>As shown in the plan, provision of exits (staircases) are made in the aforesaid proposed buildings/ towers as follows.</p> <p>B+2S+21 floors MIG Residential Apartment (Tower-1, 2, 3 &amp; 4)  There is provision of 02 no. of staircases in each tower (i.e. Tower-1, 2, 3 &amp; 4), out of which 01 is continuing from basement floor to terrace floor and another one staircase is continuing from lower stilt floor to terrace floor of each tower. Besides, there is provision of 01 no. walking ramp of width 1.5 mtrs in each tower (i.e. Tower-1, 2, 3 &amp; 4) which are continuing from basement floor to Stilt-2 floor.</p> <p>G+2 floors Club House Building  There is provision of 02 nos. of staircase, out of which 01 staircase is continuing from ground floor to 2nd floor and another one staircase is continuing from ground floor to basement floor i.e. near pump house. The provision of another staircase from ground floor to terrace floor shall be made as there is provision of community activities.</p> <p>S+14 floors LIG Residential Apartment  There is provision of 02 no. of staircases in the proposed building, which are continuing from stilt floor to terrace floor.</p> <p>B+G+3 floors Commercial Building  There is provision of 02 no. of staircases in the proposed building, out of which 01 staircase is continuing from basement floor to terrace floor and another one staircase is continuing from ground floor to terrace floor. Besides, 01 no. escalator is continuing from ground floor to 1st floor of the proposed building, in which the provision of fire fighting measures and other requirement shall be made as per Clause 5.4.5 of Annex- J of NBCI, 2016 (Part-IV) along with Part-8, Section-5(b) of NBCI. Further, for escalator openings, the smoke spill shall be avoided by provision of smoke barrier (450-600 mm) thereby creating smoke compartment. The protection shall be ensured through installation of sprinklers on all sides of the cut out opening on each floor.</p>



However, the provision of number of staircases should be based on occupancy load within the purview of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.

As per Rule-2 (iii & iv) of Annexure-IX and Clause No. 4.4.2.4.3.2 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020, the minimum width of stairway for residential buildings shall be 1.25 mtrs., the width of tread shall be 250 mm and the maximum height of riser shall be 190 mm. In case of Assembly, the minimum width of stairway shall be 2 mtrs., the width of tread shall be 300 mm and the maximum height of riser shall be 150mm. In commercial building the width of staircase shall be 1.50 mtrs, the width of tread shall be 300 mm and the maximum height of riser shall be 150mm.

As per Rule-72 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020, exits shall be so arranged as to provide continuous means of access to the exterior of a building or exterior open space leading to a street without passing through any occupied unit. Besides, other provisions i.e. permissible travel distance, dead end corridor length in exit access, connectivity, positioning etc. shall be made as per Rule-72 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020. Hence, the travel distance in 1st floor of commercial building shall be provided accordingly.

As per Rule-1 (Annexure-IX) of Odisha Development Authorities (Planning and Building Standards) Rules, 2020, no exit doorway shall be less than 01 meter in width. Doorways shall be not less than 02 meter in height. Doorways for bathrooms, water closet and stores shall be not less than 0.75 meter in width.

- 1) The escape routes should be well ventilated and provided with safety lighting and free from obstructions.
- 2) Exits must be clearly visible and all routes to reach the exit have to be clearly marked and sign posted to guide the population of the floor concerned. Signages required to be illuminated and wired to an independent electrical circuit on an alternative source of supply.
- 3) Access to the staircases be gained through automatic closing fire check doors of 02 hrs rating.
- 4) The internal staircases not with external wall of the building shall be pressurized and the internal staircases constructed with external wall shall be cross ventilated or pressurized. Wherever pressurized staircase is to be connected to unpressurized area, the two areas shall be segregated by 120 min fire resistant wall. Pressurization of the staircases shall be done as per Clause-4.4.2.5, 4.6, 6.1.1.3 & Annexure-E of Part-4, NBCI-2016.

In addition to above all other provisions for exits / doorways / stairways, means of escape and exit shall be made as per Rule-72 and Annexure- IX of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.

vi.	Firefighting Shaft/ Fire tower	<ol style="list-style-type: none"> <li>1) Firefighting shaft (fire tower) shall be made in the aforesaid all building as per Clause-2.24 of Part-IV, NBCI-2016.</li> <li>2) The protected area of the firefighting shaft shall have 120 min. Fire resistance rating &amp; comprising of protected lobby, staircase &amp; fireman's lift.</li> <li>3) It shall have connectivity directly to exit discharge or through exit passageway with 120 min fire resistance walls at the level of exit discharge to exit discharge.</li> <li>4) Besides, it shall have provision of fireman talk back, wet riser &amp; landing valve in its lobby. Staircase &amp; fire lift lobby of firefighting shaft shall be smoke controlled.</li> <li>5) Hence, the provision of fire fighting shaft in commercial building i.e. B+G+3 floors shall be made as per rules.</li> </ol>
vii.	Lifts	<p>As shown in the plan, provision of lifts are made in the aforesaid proposed buildings/ towers as follows.</p> <p>B+2S+21 floors MIG Residential Apartment (Tower-1, 2, 3 &amp; 4) There is provision of 06 no. of lifts in each tower (i.e. Tower-1, 2, 3 &amp; 4), which are continuing from basement floor to top floor of each tower.</p> <p>G+2 floors Club House Building There is provision of 02 nos. of lifts, which are continuing from ground floor to top floor.</p> <p>S+14 floors LIG Residential Apartment There is provision of 02 no. of lifts in the proposed building, which are continuing from stilt floor to top floor. However, the provision of lift shall be made as per ODA (P &amp; BS) Rules, 2020.</p> <p>B+G+3 floors Commercial Building There is provision of 02 no. of lifts in the proposed building, which are continuing from basement floor to top floor</p> <p>However, the provision of number of lifts should be based on occupancy load within the purview of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.</p>



- 1) Provision of firemen lift shall be made in aforesaid blocks as per Clause 4.4.2.5 of part-4 and 'Building Services, Section 5 Installation of Lifts, Escalators and Moving Walks, Sub-Section 5 A Lifts of Part-8 of National Building Code of India, 2016.
- 2) The Lifts shall not open in staircase landing. Grounding switch (es) at ground floor level shall be provided to enable the fire service to ground the lifts. Besides, telephone / talk back communication facilities shall be provided. Collapsible gates shall not be permitted for lifts and shall have solid doors with fire resistance of at least 1 hour.
- 3) Lift lobby shall be cross ventilated or pressurized as per Clause-4.4.2.5 of Part-IV, NBCI-2016. The mechanism for pressurization shall act automatically with the fire alarm; it shall also be possible to operate this mechanically. Telephone or other communication facilities shall be provided in lift cars and to be connected to fire control room for the building.
- 4) Construction and provisions of fire and life safety measures of lifts shall be in accordance with Annexure – IX of Odisha Development Authorities (Planning and Building Standards) Rules, 2020 and Clause 4.4.2.5 of Part-4 and 'Building Services, Section 5 Installation of Lifts, Escalators and Moving Walks, Sub-Section 5 A Lifts of Part-8 of National Building Code of India, 2016.

viii.

**Building Services**

Electrical Service

Electrical Installations in the building must be comply to the provisions given in Annexure-IX of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.

- 1) An independent, ventilated or air conditioned MV panel room must be provided on the ground level. This room required to be provided with access from outside. The MV panel room must be provided with fire resistant walls and doors of fire resistance of not less than 120 min.
- 2) A substation or a switch station with oil filled equipment must not be allowed to be functional inside the building.
- 3) All transformers must be protected by high velocity water spray systems or nitrogen injection system. As per the plan the placement of transformer has not been clearly shown.
- 4) A stand-by electric generator must be installed to supply power to staircase and corridor lighting circuits, fire lifts, the stand-by fire pumps, pressurization fans and blowers, smoke extraction and damper system in case of failure of normal electric supply.
- 5) The staircase and corridor lighting must be on separate service and must be independently connected so as it could be operated by one switch installation on the ground floor, easily accessible to firefighting staff at any time irrespective of the position of the individual control of the light points, if any.
- 6) Staircase and corridor lighting required to be connected to alternate supply from parallel high-tension supply or to the supply from the stand-by generator. All wires and other accessories used for emergency light must have fire retardant property.
- 7) The electric distribution cables or wiring shall be laid in separate duct which shall be sealed at every floor with non-combustible materials having the same fire resistance as that of the duct. Low and medium voltage wiring running in shaft and in false ceiling run in separate conduits. Water mains, telephone cables, intercom cables, gas pipes or any other service line need not be laid in the duct for electric cables.
- 8) All the transformers shall be protected with high velocity water spray system / Nitrogen Injection System Carbon Dioxide total flooding system in case of oil filled transformer if the capacity exceeds 10 MVA.
- 9) Electric substation transformer shall have clearance on all sides as per BBL/relevant electric rules.
- 10) The electric substation shall have electric supply from alternate source for operation of vent System lighting arrangements.
- 11) Cable trenches shall be filled with sand.
- 12) Party walls shall be provided between two transformers as per the rules.
- 13) Electric control panels shall be segregated.

Air Conditioning

Air Conditioning & mechanical ventilation requirements of different rooms or areas of the building must be as per the provisions given in Annexure-IX of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.



		<p>1) Air conditioning systems circulating air to more than one floor area should be provided with dampers designed to close automatically in case of fire and thereby prevent spread of fire or smoke.</p> <p>2) Escape routes like staircases, common corridors, lift lobbies must not be used as return air passage.</p> <p>3) Air ducts serving main floor areas, corridors, must not pass through the staircase enclosure.</p> <p>4) The air-handling units must be separate for each floor and air ducts for every floor must be separated and in no way inter-connected with the ducting of any other floor.</p> <p>5) Wherever the ducts pass through fire walls or floors, the opening around the ducts must be sealed with materials having fire resistance rating of the compartment. Such duct required to be provided with fire dampers at all fire walls and floors unless such ducts are required to perform for fire safety operation.</p> <p>6) The Air Conditioning required to be coupled with fire detection and alarm system.</p> <p>7) Metallic ducts must be used even for the return air instead of space above the false ceiling.</p> <p>8) The materials used for insulating the duct system (inside or outside) must be of non-combustible material.</p>
	Gas supply/ Gas pipe line	If centrally gas pipe line will be provided, construction and provision of fire safety and fire fighting measures shall be as per relevant BIS and Annexure-IX Clause-7 (VIII) of ODA (P & BS) Rules, 2020.
	Service Ducts and Shafts, Stand-By Source of Power Supply, Lightning Protection & Drainage System	<p>Service Ducts and Shafts: - Openings in walls or floors which are necessary to be provided to allow passages of the building services like cables, electrical wirings, telephone cables, plumbing pipes, etc. must be protected by enclosure in the form of ducts /shafts and such shaft and inspection doors fitted thereto must have fire resistance rating not less than as specified in Annexure-IX of Odisha Development Authorities (Planning and Building Standards) Rules, 2020.</p> <p>Stand-By Source of Power Supply: - There shall be provision for dedicated emergency power supply to fire pumps, lifts, fire alarm system, pressurization system, emergency lighting, escape route lighting, exit signage, public address system, lighting in fire command centre, magnetic door hold open devices, etc. as per Annexure-IX of Odisha Development Authorities (Planning and Building Standards) Rules, 2020. The power supply to the panel /distribution board of these fire and life safety systems shall be through fire proof enclosures or circuit integrity cables or through alternate route in the adjoining fire compartment to ensure supply of power is reliable to these systems and equipment. Cables for fire alarm and PA system shall be laid in metal conduits or armoured to provide physical segregation from the power cables.</p> <p>Lightning Protection: - Provision for lightning protection shall be made in aforesaid buildings as per NBCI-2016 and in accordance to relevant BIS specifications. Routing down of conductors (Insulated or Un-Insulated) of lightning protection shall not be made through electrical or other service shafts.</p> <p>Drainage System:- Provision of drainage system shall be made for the aforesaid buildings as per norms.</p>
ix.	Fire Command Centre	<p>1) There shall be a Fire Command Centre on entrance floor of the building having direct access. The Fire Command Centre must have the main fire alarm panel with communication system (suitable public-address system). All controls and monitoring of fire alarm systems, Detection system, pressurization systems, smoke management systems must be operated from this room. Integrated building management system must be provided for Fire Command Centre.</p> <p>2) Fire Command Centre must have provisions in accordance with Clause-3.4.12 of Part-4, NBCI-2016.</p> <p>3) The owner/occupier shall provide any additional fire requirements in future if the recommendation is issued by this department.</p> <p>4) The site is suitable for construction of above proposed structure subject to condition that the owner/occupier shall provide any additional fire requirements in future if the recommendation is issued by this department.</p>
x.	Basement, Refuge Area, Construction, Compartmentation and Fire Safety Supervisor	<p>Basement:- As shown in the plan there is provision of 02ramps of width 4.5 mtrs each which are continuing from basement floor to Stilt-2 in MIG Residential Building (B+2S+21 floors) and 01 no. ramp of width 06 mtrs is continuing from basement floor to ground floor of B+G+3 floors commercial building.</p>



1) Basement shall be separately ventilated. Vents with cross-sectional area (aggregate) not less than 2.5 percent of the floor area spread evenly round the perimeter of the basement shall be provided in the form of grills or breakable stall board lights or pavement lights or by way of shafts. Alternatively, a system of mechanical ventilation shall be provided so as to permit 12 air changes per hour in case of fire or distress call. Ventilation system shall start automatically on actuation of detector provided in the basement area in addition to provision of manual control. Doors provided in such exit passageway shall be fire rated doors of 2 hrs rating. Smoke exhaust and pressurization of areas shall be done as per the provisions given in Clause- 4.6 of Part-4, NBCI-2016.

2) The basement shall be used for designated purpose only. Adequate provision of exits and ramps shall be made in the basements as per Odisha Development Authorities (Planning and Building Standards) Rules, 2020 and NBCI-2016. The ramp providing access to basement shall be constructed leaving required open space around the building. Door openings leading from upper floors to basement shall need to be protected with fire doors with 120 min. Fire rating except for exit discharge doors from the basements. Adequate arrangement shall be made, so that surface drainage does not enter the basement. The wall and floors of the basement shall be water-tight and be so designed that the effect of the surrounding soil and moisture, if any, are taken in to account in design and adequate damp proofing treatment is given.

3) The use and construction of the basement shall confirm to the provisions given in Rule-41 of Odisha Development Authorities (Planning and Building Standards) Rules, 2020 and Clause – 12.9 of Part-III and Clause – 4.5 & 4.6 of Part-IV, NBCI – 2016.

**Refuge Area:-**

1) Refuge area shall be provided for the aforesaid building of height more than 24 meters. Refuge area shall be approachable from the space they serve by an accessible means of egress. Refuge area (s) shall be provided in the building at/or immediately above 24 mtrs. and thereafter at every 15 mtrs or so. The refuge area shall always be kept clear. No storage of combustible products and materials, electrical and mechanical equipment, etc. shall be allowed in such areas. High rise apartment buildings with apartments having balcony, need not be provided with refuge area. However, the refuge area for apartment buildings of height above 60 mtrs with balcony shall be provided refuge area at 60 mtrs and thereafter at every 30 mtrs. The provision of refuge area shall be made as mentioned in Annexure-E (E-4) as per NBCI, 2016.  
2) Refuge area shall be made as per Annexure-E-4 of Part-IV, NBCI-2016.

**Construction:-**

The minimum fire resistance rating of structural and non-structural members shall be as given in Table-1 and Annexure-C of Part-IV, NBCI-2016. The false ceiling, including all fixtures used for its suspension shall be of non-combustible material and shall provide adequate fire resistant to the ceiling in order to prevent spread of fire across ceiling. The structural safety design and construction of the building shall be done as per Clause-3.3 & 3.4, Table-25 & 26 of Part-IV, NBCI-2016 and Rule-73 of Odisha Development Authorities (Planning & Building Standards) Rules, 2020. For construction of habitable rooms, kitchen, bathrooms, loft, mezzanine floor, store room & garage shall be constructed in accordance to Clause-12 of Part-III, NBCI-2016. Refuge chutes, if any provided in the building shall have opening of at least 01 mtr. above roof level for venting purpose and they shall not be located within the staircase enclosure wall of non-combustible material with fire resistance of not less than 120 min. Refuge chutes shall be made as per Clause 3.4.5.5 of Part-IV, NBCI-2016. But, during inspection it is noticed that there is some existing buildings situated over the plot, which needs to be demolished before construction of new buildings.

**Compartmentation:-**

- a) Compartmentation shall be made in aforesaid buildings as per Clause-4.5 of Part-4 (Fire and Life Safety), NBCI-2016.
- b) Exit access corridors from a compartment to another compartment shall be divided at the compartment intersection by a fire door of 120 min fire rating in the fire compartment wall.

**Fire Safety Supervisor:-**

As per plan, the aforementioned wings are of height more than 45 mtrs. (each) and if the same consist more than 400 dwelling units a Fire Safety Supervisor shall be appointed before occupancy as per Rule – 15 (e) of Odisha Fire Prevention and Fire Safety Rules, 2017.

<b>B.</b>	<b>Fixed Fire Fighting Installations :</b>	
i.	Fire Extinguisher	Provision of fire extinguishers shall be made in all floors of aforesaid buildings/ towers as per BIS:2190:2010.
ii.	First- Aid Hose Reel	First-aid hose reel shall be provided on each floor of aforesaid buildings/ towers in accordance with BIS 884:1985 & BIS 3844:1989. Adequate Hose reels so that Hose reel Hose available within 30 mtrs. from any point at each



		floor level and the horizontal distance between any two adjacent points need not exceed 50 mtrs on each floor and Hose reels hose must be directly connected to Wet riser.
iii.	Wet Riser	The aforesaid buildings i.e. B+2S+21 floors (Tower-1, 2, 3 & 4), S+14 floors LIG Residential Building and B+G+3 floors Commercial building are required to be provided with risers adequately so that available within 30 mtrs. from any point at each floor level and horizontal distance between any two adjacent risers shall not exceed 50 mtr. Provision of wet riser shall be made conforming to BIS standards. (IS-3844:1989, 884:1985 and 9668:1990).
iv.	Down Comer	Provision of adequate down comer should be made available within 30 Mtr. from any point at each floor level of G+2 floors Club House building and the horizontal distance between any two adjacent down comer shall not be exceed 50 Mtr. on each floor of the said building & directly connected to the down comer in accordance to IS:844/1985, 8090/1976 & 3844/1989 specification. All down comer shall have provision of hydrant outlet and hose reel on each floor landing. The down comer mains shall be connected to the terrace pump. Fire Service inlets at ground level fitted with non-returned valves shall also be provided to the down comer main for charging it by Fire Service pump in case of failure of terrace fire pump fitted with the terrace tank. The down comer shall be fully charged and automatic in operation with adequate pressure at all times. The internal diameter of the down comer mains shall be not less than 100 mm. Each hydrant shall be preferably of single outlet and comprise of 63 mm. Gun metal landing valve fitted with 63 mm instantaneous coupling conforming to IS 901:1988. The landing valve on the hydrant shall be at a height of between 1 to 1.2 mtrs above the floor near each floor landing and on the terrace. Sufficient length of rubber lined fire hoses subject to minimum two 15 mtrs length fitted with coupling together with branch pipe and nozzle conforming to IS 903:1993 shall be provided and kept adjacent to the respective hydrant in hose boxes.
v.	Yard Hydrant	Yard hydrant required to be provided around the building i.e. B+2S+21 floors (Tower-1, 2, 3 & 4) and B+G+3 floors Commercial building for adequate approach during fire emergency. The yard hydrants installation should have provision of landing valves at every 30 m apart. The yard hydrant installation shall be in accordance to BIS specification. (IS-13039:2014).
vi.	Automatic Sprinkler System	Automatic water sprinkler system with sprinkler heads shall be provided in all floors including basement of the aforesaid building i.e. i.e. B+2S+21 floors (Tower-1, 2, 3 & 4) and B+G+3 floors Commercial building. Sprinkler shall be fed water from both underground static water storage tank and terrace tank. (IS:15105-2002).
vii.	Manually Operated Electronic Fire Alarm System	Manually operated electronic fire alarm system at conspicuous places in each floor of aforesaid buildings shall be provided. (IS/ISO 7240-11:2011).
viii.	Automatic Detection Alarm System	Automatic Detection and Alarm Systems required to be provided both below and above the false ceiling (If void space exceeds 800 mm) in all floors of the buildings i.e. B+2S+21 floors (Tower-1, 2, 3 & 4) and B+G+3 floors Commercial building including inside the electrical shafts & lift machine rooms etc. Electrical rooms, cabins & other areas in car parking shall have also provision of fire detection system. Installation of automatic fire detection and alarm system must be in accordance to IS 2189:2008.
ix.	Underground Static Water Storage Tank	Underground Static water storage tank capacity of 2,00,000 ltrs. shall be made for B+2S+21 floors MIG residential buildings and it's incidental occupancy, 75,000 ltrs capacity for S+14 floors LIG residential building and 1,00,000 ltrs capacity for B+G+3 floors commercial building. All static tanks must entirely be accessible to fire appliances of the local Fire Service. Provision of suitable manhole shall be made available for inspection, repair and insertion of suction hose etc. Static Underground tank must be constructed in accordance to Clause-5.1.2.1 of Part-IV, NBCI-2016.
x.	Terrace Tank	Terrace tank of 10,000 ltrs. for B+2S+21 floors (Tower-1, 2, 3 & 4) and B+G+3 floors Commercial building, 5,000 ltrs for S+14 floors LIG residential building & 20,000 ltrs for G+2 floors club house building capacity shall be provided at the top of the said building for firefighting purpose. It should be ensured that water in the tank is not utilized for any other purpose other than firefighting.
xi.	Pump Near Underground Static Water Storage Tank/ Fire Pump	Pump house should preferably be installed at ground level. It shall be situated so as to be directly accessible from the surrounding ground level. Required number of sets of pumps each consisting of two Electric & one Diesel pumps (Stand by) of capacity 2850 LPM & two electric pump of capacity 180 LPM shall be provided for B+2S+21 floors and it's incidental occupancy





		and one Electric & one Diesel pumps (Stand by) of capacity 2280 LPM & one electric pump of capacity 180 LPM shall be provided separately for each S+14 floors LIG residential building and B+G+3 floors commercial building. One set of pumps shall be provided for each 100 hydrants or part thereof with a maximum of two sets. In case of more than one pump set installation, both pump sets shall be interconnected at their delivery headers. Alternative to provisions of additional set of pumps, the objective can be met by providing additional diesel pump of the same capacity and doubling the water tank capacity as required for one set of pumps. Lower levels in these high-rise towers are likely to experience high pressure and therefore, it is recommended to consider multi-stage, multi-outlet pumps (creating pressure zones) of variable frequency drive pumps or any other equivalent arrangement. Further, in addition to above provision of independent electric pump (s) of adequate capacity shall be made, if water curtain is used for compartmentation of basement floors. The pumps are to be automatic in action. Installation of pumps shall be made in all the buildings in accordance to Clause-5.1.2.2 of Part-IV, NBCI-2016.
xii.	Pump At Terrace Tank Level With Minimum Pressure Of 3.5 Kg/Cm2/ Terrace Pump	Provision of terrace pump of 450 LPM capacity shall be provided for club house building having connectivity to terrace tank. Besides, the wet riser shall be connectivity to terrace tank. Installation of pumps shall be made in accordance to Clause-5.1.2.2 of Part-IV, NBCI-2016.
xiii.	Instruction	The above fixed firefighting installations are required to be provided in the aforesaid building as per NBCI-2016 and relevant BIS specifications.
C.	Opinion :	After completion of the construction work including installation of fixed firefighting measures as suggested, the applicant shall be required to apply for Fire Safety Certificate as per Rule-13 (1) of Odisha Fire Prevention and Fire Safety Rules, 2017 along with following documents: - i. The applicant shall produce a certificate to be issued by the office/person concerned to the effect that all the provisions of Bye-laws / Regulations of Odisha Development Authority and Recommendations issued from I/c. Chief Fire Officer (SAG), Fire Prevention Wing, Cuttack have been incorporated in the building. ii. The applicant shall produce a certificate of the Competent Authority concerned to the effect that electrical installations have been done as recommended and as per provisions given in Part-8 "Building Services, Section-2 Electrical and allied installations" of NBCI-2016 and Section-7 of National Electrical Code, 2011. iii. The Applicant shall produce a certificate of the agency concerned to the effect that installation of firefighting measures has been done as recommended and as per provisions given in Part-4 of National Building Code of India-2016 and relevant BIS specifications.

I/c Chief Fire Officer (SAG)  
FPW, Odisha

**NOTE**

- (i) It is a digitally signed electronically generated certificate and therefore needs no ink-signed signature.
- (ii) This Certificate is issued as per section 4, 5, & 6 of Information Technology Act 2000 and its subsequent amendments in 2008.
- (iii) For any Query or Verification, Agency /Department / Office may visit <http://agnishamaseva.odisha.gov.in>



(iv) Tampering of this Certificate will attract penal action.

