



**OFFICE OF THE DEPUTY FIRE OFFICER,  
BHUBANESWAR CIRCLE, BHUBANESWAR**

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## FORM-II

[See rule-12 (5)]

## Fire Safety Recommendation

File No. 281-2019-BBSR.CIR

1. Address of the proposed building/premises : - Mouza-Rudrapur, Bhubaneswar, Dist-Khurda
2. Name and Address of the applicant (s) : - Sri Deepak Tripathy, Managing Partner, M/s Om Swastika, Shree Vihar, Bhubaneswar
3. Date of receipt of application : - 12.12.2019
4. Proposed Occupancy (type of building) : - The proposed construction of B+S+4 storied building is coming under "Commercial" building as per Bhubaneswar Development Authority (Planning and Building Standards) Regulations, 2018 and "Mercantile" (Group-F, Sub-Division F-2) as per NBCI-2016.  
The proposed construction of S+4 storied building is coming under "Residential" building as per BDA (P & BS) Regulations, 2018 and "Residential" A-4) as per NBCI-2016. Besides, above S+4 residential building is not coming under as per Rules-9(1) of Odisha Fire Prevention & Fire Safety (Amendment) Rules, 2019.
5. Area with plot number and Khata number : - Plot Area - 3441.07 sqm., Plot Number-541 & 544/9187, Khata Number- 415 & 412/1069
6. Date of Inspection : - 23<sup>th</sup> December 2019
7. Recommendation: -

The fire safety recommendation is as follows: -

A.	Floor wise occupancy with area	<u>Proposed Residential Block-A</u>	
		<ul style="list-style-type: none"> <li>➤ Stilt floor-1667.45 sqm- - Parking</li> <li>➤ 1<sup>st</sup> Floor- 1227.30 sqm - Apartment Houses</li> <li>➤ 2<sup>nd</sup> Floor- 1227.30 sqm - Apartment Houses</li> <li>➤ 3<sup>rd</sup> Floor- 1227.30 sqm - Apartment Houses</li> <li>➤ 4<sup>th</sup> Floor- 1227.30 sqm - Apartment Houses</li> <li>➤ Terrace floor - - Open to sky.</li> </ul>	
		<u>Proposed Commercial Block-B</u>	
		<ul style="list-style-type: none"> <li>➤ Basement- 567.37 sqm - Parking</li> <li>➤ Stilt Floor-567.37 sqm - Parking</li> <li>➤ 1<sup>st</sup> Floor- 567.37 sqm - Shopping centre</li> <li>➤ 2<sup>nd</sup> Floor- 567.37 sqm - Shopping centre</li> <li>➤ 3<sup>rd</sup> Floor- 567.37 sqm - Shopping centre</li> <li>➤ 4<sup>th</sup> Floor- 335.84 sqm - Shopping centre</li> <li>➤ Terrace floor - Open to sky.</li> </ul>	
B	Height	<ul style="list-style-type: none"> <li>➤ The height of the proposed Residential Block-A will be 14.90 mtrs from ground level.</li> <li>➤ The height of the proposed Commercial Block-B will be 16.08 mtrs from ground level including height of the roof of the basement above ground level i.e. 1.20 mtrs.</li> </ul>	
C	Parking	<ul style="list-style-type: none"> <li>➤ Provision of stilt floor parking in Residential Block-A have been proposed in the plan.</li> <li>➤ Provisions of basement and stilt parking in Commercial Block-B have been proposed in the plan.</li> <li>➤ Provision of parking shall be made in accordance to Regulation-37 of Bhubaneswar Development Authority (Planning and Building Standard) Regulations, 2018.</li> </ul>	

		<ul style="list-style-type: none"> <li>➤ The off-street parking space to be provided shall be in addition to minimum open space (set-backs) as required under Regulations-32 of Bhubaneswar Development Authority (Planning and Building Standard) Regulations, 2018.</li> </ul>																																			
D	Access to the building	<ul style="list-style-type: none"> <li>➤ As per plan the proposed width of abutting Road or means of access is 91.46 mtrs.</li> <li>➤ One number of main entrance gate of width 6.09 mtrs and one number of another gate of width 6.09 mtrs have been proposed at front side of the building.</li> <li>➤ The main gate shall fold back against the compound wall of the premises.</li> <li>➤ If the main entrance gate is built over, the height of the same shall not be less than 05 mtrs.</li> <li>➤ Provisions for access to the building as shown in the plan satisfies the requirement of Regulation-30&amp; 69 of Bhubaneswar Development Authority (Planning and Building Standard) Regulations, 2018.</li> </ul>																																			
E	Setbacks (in mtrs.)	<ul style="list-style-type: none"> <li>➤ As per the plan, provision of the following setbacks has been proposed:-  <u>Proposed Residential Block-A</u>            Front-04 mtrs, Rear -4.56 mtrs,            Left -6.01 mtrs, Right- 3.05 mtrs  <u>Proposed Commercial Block-B</u>            Front-4.01 mtrs, Rear -3.01 mtrs,            Left -3.01 mtrs, Right- 2.50 mtrs</li> <li>➤ Provision of open space proposed in the plan satisfies the requirement as per Regulation-32 (1) Table-5 of Bhubaneswar Development Authority (Planning and Building Standard) Regulations, 2018.</li> <li>➤ The open 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.</li> <li>➤ The covering slabs of underground water tank, soak pit, recharge tank, septic tank etc, if proposed to be positioned in the compulsory open space must have appropriate load bearing capacity.</li> </ul>																																			
F	Basement & Stilt	<ul style="list-style-type: none"> <li>➤ As shown in the plan there is provision of one Basement floor in Commercial Block and ramp of width 5.4 mtrs connectivity basement to ground.</li> <li>➤ Provision of ramp proposed in the plan satisfies the requirement as per Regulation-37 (8) of Bhubaneswar Development Authority (Planning and Building Standard) Regulations, 2018.</li> <li>➤ Provision of basement and ramp shall be in accordance to Regulation-37(8), 41, Annexure-IV of Bhubaneswar Development Authority (Planning and Building Standard) Regulations, 2018 and Clause-4.6.2, 4.2.19 &amp; 4.4.2.4.3.5 of Part-4, NBCI-2016.</li> </ul>																																			
G	Exits (Type, Number, Dimension & arrangement)	<p>As per plan three numbers of staircases in Residential Block-A of following dimensions and connectivity have been proposed.</p> <table border="1"> <thead> <tr> <th>Nos of staircases</th> <th>Connectivity</th> <th>Width of stairway</th> <th>Width of tread</th> <th>Width of riser</th> </tr> </thead> <tbody> <tr> <td>Stair-1</td> <td>Stilt to Terrace</td> <td>1.5 mtrs.</td> <td>250 mm</td> <td>150 mm</td> </tr> <tr> <td>Stair-2</td> <td>Stilt to Terrace</td> <td>1.5 mtrs.</td> <td>250 mm</td> <td>150 mm</td> </tr> <tr> <td>Stair-3</td> <td>Stilt to Terrace</td> <td>1.5 mtrs.</td> <td>250 mm</td> <td>150 mm</td> </tr> </tbody> </table> <p>As per plan three numbers of staircases in Residential Block-A of following dimensions and connectivity have been proposed.</p> <table border="1"> <thead> <tr> <th>Nos of staircases</th> <th>Connectivity</th> <th>Width of stairway</th> <th>Width of tread</th> <th>Width of riser</th> </tr> </thead> <tbody> <tr> <td>Stair-1</td> <td>Basement To Terrace</td> <td>1.52 trs.</td> <td>300 mm</td> <td>150 mm</td> </tr> <tr> <td>Stair-2</td> <td>Stilt to Terrace</td> <td>1.52 mtrs.</td> <td>300mm</td> <td>150 mm</td> </tr> </tbody> </table>	Nos of staircases	Connectivity	Width of stairway	Width of tread	Width of riser	Stair-1	Stilt to Terrace	1.5 mtrs.	250 mm	150 mm	Stair-2	Stilt to Terrace	1.5 mtrs.	250 mm	150 mm	Stair-3	Stilt to Terrace	1.5 mtrs.	250 mm	150 mm	Nos of staircases	Connectivity	Width of stairway	Width of tread	Width of riser	Stair-1	Basement To Terrace	1.52 trs.	300 mm	150 mm	Stair-2	Stilt to Terrace	1.52 mtrs.	300mm	150 mm
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		<ul style="list-style-type: none"> <li>➤ Provision of exits and staircases as proposed in the building satisfies the requirement as per Regulations-71 and Annexure-IV of Bhubaneswar Development Authority (Planning &amp; Building Standard) Regulations, 2018.</li> <li>➤ No exit doorways shall be less than 01 mtrs. in width and height less than 02 mtrs.</li> <li>➤ The minimum width of an exit passageway/corridors shall be 1.5 mtrs for commercial &amp; 1.25 mtrs for residential.</li> <li>➤ The internal staircase not with external wall shall be pressurized.</li> <li>➤ The staircases are required to be pressurized or provision of natural ventilation be made at each floor landing. The natural ventilation requirement of the staircases shall be achieved through opening at each landing of an area 0.5 m<sup>2</sup> in the external wall.</li> <li>➤ Mechanism for pressurizing the staircase shall operate automatically with the fire alarm.</li> <li>➤ Access to all the staircases of commercial block be gained through automatic closing fire check doors of 02 hrs. rating at all the floors.</li> <li>➤ External exit door of staircase enclosure at ground level shall open directly to the open spaces or can be reached without passing through any door other than a door provided to drought lobby.</li> <li>➤ The exit sign with arrow indicating the way to the escape route shall be provided at all conspicuous places and shall be illuminated by electric light connected to corridor circuits.</li> <li>➤ The floor indication board shall be placed on the wall immediately, facing the flight of stairs and nearest to the landing.</li> </ul> <p>In addition to above all other provisions for exits/doorways/stairways &amp; travel distance shall be made as per clause-4.2 to 4.6.2 of NBCI-2016 and Annexure-IV, XI of Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018.</p>
H.	Lift	<ul style="list-style-type: none"> <li>➤ 04 nos lift having connectivity from Stilt to top floor have been proposed in the Residential building &amp; 02 nos lift having connectivity from Stilt to top floor have been proposed in the Commercial building.</li> <li>➤ Provision of lifts as proposed in the building satisfies the requirement as per Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018.</li> <li>➤ Grounding switch at ground floor level shall be provided.</li> <li>➤ Lift car door shall have a fire resistance rating of 01 Hr.</li> <li>➤ Walls of lift enclosers shall have a fire rating of 02 (two) hrs. Lift shafts shall have vent at the top of area not less than 0.2 sqm.</li> <li>➤ Telephone/talk back communication facilities may be provided in lift cars of commercial building for communication system and lifts shall be connected to the fire control room.</li> <li>➤ As lift communicating from basement, lift lobbies shall be segregated and pressurized through fire check doors of two hours rating as per Annexure-IV of Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018 and Table-6 of NBCI-2016.</li> <li>➤ Photo luminescent safety signs shall be posted and maintain on every floor at or near the lift indicating that in case of fire, occupants shall use the stairs unless instructed otherwise.</li> </ul> <p>In addition to above, other provisions of lift shall comply to the requirements as specified in Building Services, Section 5 Installation of Lifts, Sub-Section 5-A Lifts of Part-8 of National Building Code of India, 2016, Regulations-42 and Annexure-IV, XI of Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018.</p>
I.	Construction	<ul style="list-style-type: none"> <li>➤ The minimum fire resistance rating of structural and non-structural members shall be as given in Table-1 of NBCI-2016.</li> <li>➤ 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.</li> <li>➤ The structural safety design and construction of the building shall be done as per Clause -3.3 &amp; 3.4 of NBCI-2016 and Regulation-73 of Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018.</li> <li>➤ Provision for lightning protection shall be made in the building as per NBCI-2016 and incorporate to relevant BIS Specification. Routing down of conductors (Insulated or Un-insulated) of lightning protection shall not be made through electrical or other service shafts.</li> </ul>


J. Building Services	<p><b>Electrical Services: -</b></p> <ul style="list-style-type: none"> <li>➤ A stand-by electric generator shall 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.</li> <li>➤ The staircase and corridor lighting shall be on separate service and shall 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.</li> <li>➤ Staircase and corridor lighting shall also 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 shall have fire retardant property.</li> <li>➤ 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 shall run in separate conduits. Water mains, telephone cables, intercom cables, gas pipes or any other service line shall not be laid in the duct for electric cables.</li> <li>➤ Transformer if housed at ground floor level shall be cut-off from the other portion of premises by Fire Resisting Walls of 4 hours rating.</li> <li>➤ Electrical Installations in the building shall comply to the provisions given in Clause 3.4.6 to 3.4.7.4 of part-4 NBCI-2016 and Annexure-XI of Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018.</li> <li>➤ Provision for lightning protection shall be made in the proposed building as per IS/IEC 62305 - 4:2010.</li> </ul> <p><b>Air Conditioning: -</b></p> <ul style="list-style-type: none"> <li>➤ Escape routes like staircases, common corridors, lift lobbies shall not be used as return airpassage.</li> <li>➤ Air ducts serving main floor areas, corridors, shall not pass through the staircase enclosure.</li> <li>➤ The air-handling units shall be separated for each floor and air ducts for every floor shall be separated and in no way inter-connected with the ducting of any other floor.</li> <li>➤ Wherever the ducts pass through fire walls or floors, the opening around the ducts shall be sealed with materials having fire resistance rating of the compartment. Such duct shall also be provided with fire dampers at all fire walls and floors unless such ducts are required to perform for fire safety operation.</li> <li>➤ Metallic ducts shall be used even for the return air instead of space above the false ceiling.</li> <li>➤ The materials used for insulating the duct system (inside or outside) shall be of non-combustible material.</li> <li>➤ Air Conditioning system in the building shall comply to the provisions given in Clause 3.4.8 to 3.4.8.4.2 of part-4 NBCI-2016 and Annexure-XI of Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018.</li> </ul> <p><b>Service Ducts and Shafts: -</b></p> <ul style="list-style-type: none"> <li>➤ Openings in walls or floors which are necessary to be provided to allow passages of all building services like cables, electrical wirings, telephone cables, plumbing pipes, etc. shall be protected by enclosure in the form of ducts / shafts and such shaft and inspection doors fitted thereto shall have fire resistance rating not less than as specified in Clause 3.4.5.4 of NBCI-2016 and Annexure-XI of Bhubaneswar Development Authority (Planning and Building Standard) Regulation, 2018.</li> </ul>
K. Fixed Fire Fighting Installations	<p>The following fixed firefighting installations are required to be provided as per NBCI-2016 and BIS specifications as mentioned against each.</p> <p><b>PROPOSED COMMERCIAL BLOCK-B</b></p> <ol style="list-style-type: none"> <li>1. <b>Fire Extinguisher:</b> - Provision of fire extinguishers shall be made in entire building. (BIS:2190:2010)</li> </ol>

2. **First-aid Hose Reel:** - First-aid hose reel hose shall be provided on each floor of the building.(BIS 884:1985 & BIS 3844:1989)
3. **WET RISER:** - The proposed building is required to be provided wet riser with provision of hydrant outlet and hose reel on each floor landing connected to the fire pump. Fire Service inlets at ground level fitted with non-return valves shall also be provided to the rising main for charging it by Fire Service pump in case of failure of static fire pump. The riser shall be fully charged and automatic in operation with adequate pressure at all times (BIS:3844:1989).  
The internal diameter of the riser main shall not be 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.  
Sufficient length of rubber lined fire hoses subject to minimum two lengths of 15 mtrs length fitted with coupling together with branch pipe and nozzle conforming to IS:903:1984 shall be provided and kept adjacent to the hydrant in hose boxes.
4. **YARD HYDRANTS:-**Installation of Yard Hydrants shall be in accordance to relevant BIS specifications
5. **AUTOMATIC SPRINKLER SYSTEM:-**  
Automatic water sprinkler system with sprinkler heads shall be provided in all floors including basement of the proposed building both below & above the false ceiling (Where void space exceeds 800mm) at suitable interval and height. Installations sprinkler shall be provided in accordance to relevant BIS specification (IS/ISO 15105:2002 and 9972:2002).
6. **MANUALLY OPERATED ELECTRONIC FIRE ALARM SYSTEM:-**Manually Operated Electronic fire alarm system at conspicuous places in each floor of the building shall be provided as per relevant BIS specifications. Manually operated electronic fire alarm system shall also include talk-back and Public Address System. (IS/ISO 7240-11:2011)
7. **AUTOMATIC DETECTION & ALARM SYSTEM:** - Automatic Detection & Alarm system shall require to be provided both below and above the false ceiling (if void space exceeds 800 mm) in entire 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 shall be in accordance with 2175:1988 IS/ISO-7240-5-2003,7-2011,11-2011,15-2011,11360:1983 BIS specifications.
8. **UNDER GROUND STATIC WATER STORAGE TANK:** - Static underground storage tank of 1,00,000 ltrs. capacity shall be provided. The tank shall 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. The covering slab shall be able to withstand the vehicular load of 45 tons. Static underground tank shall be constructed in accordance with Clause-5.1.2.1 of Part-4, NBCI-2016.
9. **TERRACE TANK:** - Terrace tank of 10,000 ltrs. capacity shall be provided at the top of the building for firefighting purpose. It shall be ensured that water in the tank is not utilized for any other purpose other than firefighting. The terrace tank shall be connected to rising mains.
10. **FIRE PUMPS:** - Pump house shall be 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 one Electric & one Diesel pump (Stand by) of capacity 2280 lpm. & one electric pump of capacity 180 lpm shall be provided. Installation of pumps shall be made in accordance to Clause-5.1.2.2 of Part-IV, NBCI-2016 and relevant BIS specification.  
Further, it is suggested Fire fighting measures shall be provided in S+4 Residential building (Block-A) as per NBCI-2016 from fire safety point of views..

L.	Fire Command Centre	<p>➤ There shall be a Fire Command Centre on entrance floor of the building having direct access. The Fire Command Centre shall have the main fire alarm panel with communication system (suitable public-address system). All controls and monitoring of fire alarm systems, pressurization systems, smoke management systems shall take place from this room. Fire Command Centre shall have provisions in accordance with Clause-3.4.12 of Part-4, NBCI-2016.</p> <p>The applicant shall provide any additional fire requirements in future if the recommendation is issued by this department.</p>
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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 person concerned to the effect that all the provisions of Bye-Laws / Regulations of Bhubaneswar Development Authority and Recommendations issued from this office 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.


  
26/12/2019  
(R.C Majhi)

Deputy Fire Officer,  
Bhubaneswar Circle, Bhubaneswar

Memo No. 2359/BBS.CIR

Date. 26.12.2019

Copy to Sri Deepak Tripathy, Managing Partner, M/s Om Swastika, Shree Vihar, Bhubaneswar for information and necessary action.

  
26/12/2019  
(R.C Majhi)

Deputy Fire Officer,  
Bhubaneswar Circle, Bhubaneswar

Memo No. \_\_\_\_\_/BBS.CIR

Date. 26.12.2019

Copy submitted to Planning Member, Bhubaneswar Municipal Corporation, Bhubaneswar for information.

(R. C Majhi)

Deputy Fire Officer,  
Bhubaneswar Circle, Bhubaneswar

Memo No. \_\_\_\_\_/BBS.CIR

Date. 26.12.2019

Copy submitted to Chief Fire Officer, Fire Prevention Wing FS Directorate, Cuttack for kind information please with reference file no-C-499/2019.

(R. C Majhi)

Deputy Fire Officer,  
Bhubaneswar Circle, Bhubaneswar

Memo No. \_\_\_\_\_/BBS.CIR

Date. 26.12.2019

Copy submitted to Fire Officer, Central Range, Cuttack for kind information please.

(R. C Majhi)

Deputy Fire Officer,  
Bhubaneswar Circle, Bhubaneswar