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Government of West Bengal
Office of the Divisional Fire Officer
West Bengal Fire & Emergency Services
First Floor of Duragapur Fire Station, Durgapur City Centre, P.O.:- Durgapur, P.S.:- Durgapur, Pin:- 713216

Memo No.: FSR/Dy.DFS/263/2013

Date : 03-12-2024

From :
Divisional Fire Officer
Paschim Bardhaman
West Bengal Fire & Emergency Services

To :
D.A.V Model School, Durgapur.
J. M. Sengupta Road, B - Zone, Durgapur Steel Township, Ward no. 07, Mouza Benachity, C.S Plot no. 118(P), J.L. no. 67, P.S Durgapur, Dist. Paschim Bardhaman, Pin - 713205.

Sub : Revised Fire Safety Recommendation of proposed addition and alternation of existing Block-A (Dr. D. Pal: G+3 Storied & Primary: G+1 Storied), Block-B (N.D. Grover: G+3 Storied), Block-C (Pehla Kadam: G+2 Storied), Block-D (Auditorium: G+2 Storied) and Block-E (Mahatma Hansraj: G+3 Storied) instead of existing G+3 storied, all buildings are under group educational in the campus of name and style is "D.A.V Model School, Durgapur " at J. M. Sengupta Road, B: Zone, Durgapur Steel Township, Ward No: 07, Mouza: Benachity, C.S. Plot No: 118(P), J.L. No: 67, P.S: Durgapur, Dist: Paschim Bardhaman, Pin:713205..

This is in reference to your AIN 211882406300000988 dated 25-Oct-2024 regarding the Revised Fire Safety Recommendation of proposed addition and alternation of existing Block-A (Dr. D. Pal: G+3 Storied & Primary: G+1 Storied), Block-B (N.D. Grover: G+3 Storied), Block-C (Pehla Kadam: G+2 Storied), Block-D (Auditorium: G+2 Storied) and Block-E (Mahatma Hansraj: G+3 Storied) instead of existing G+3 storied, all buildings are under group educational in the campus of name and style is "D.A.V Model School, Durgapur " at J. M. Sengupta Road, B: Zone, Durgapur Steel Township, Ward No: 07, Mouza: Benachity, C.S. Plot No: 118(P), J.L. No: 67, P.S: Durgapur, Dist: Paschim Bardhaman, Pin:713205..

The plan submitted by you was scrutinized and marked as found necessary from Fire Safety point of view. In returning one set of plan with recommendation, this office is issuing Revised Fire Safety Recommendation in favor of the aforesaid building subject to the compliance of the



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Recommendation :

A. CONSTRUCTION:

1. The Whole Construction of the building shall be carried out as per the approved plan of the local building authority.
2. Materials for rapid flame spread categories including untreated wood fibreboard etc. shall be not used.
3. The doors and windows preferably shall be made of metal.
4. The whole construction of the building shall be carried out as per approved plan drawings conforming to the relevant building rules of the local Municipal Body.
5. The interior finish decoration of the building shall be made with materials with low flame spread and low smoke and toxic gas generating categories conforming to I.S. Specification.
6. Arrangements shall have made for sealing all the vertical service ducts with materials of adequate Fire resisting capacity.
7. Fire rating test certificate of all interior finish decoration should be submitted to this office before taking occupancy.
8. Service Ducts and shafts should be enclosed by walls of 2 hours and doors of one-hour fire rating.
9. All such ducts shall be properly sealed, and the fire stopped at all floor levels.

B. OPEN SPACE & APPROACH:

1. The open space surrounding the building shall be kept clear and open to the sky and shall conform the relevant building rules as well as permit the easy accessibility and maneuverer ability of the Fire appliances with a turning facility.
2. The approach road and roads surrounding the building shall be sufficiently strong to withstand the load of a Fire Engine weighing up to 45 M.T.
3. The width and height of the entry gates to the premises shall not be less than 5m and 6m respectively.
4. The driveway should be free of any type of obstruction. No parking will be allowed on the Driveway.

C. STAIRCASE:

1. The staircase of the building shall be enclosed type; the entire construction shall be made of brick / R.C.C. type having Fire resisting capacity not less than 4 hours respectively marked in the plan.
2. The staircases shall have permanent vents at the top equal to 5% of the cross-sectional area of the staircase's enclosures and openable sashes at each floor level equal to 15% of the said cross-section shall have to be provided in the external wall of the building.
3. All the staircases of the building shall be negotiable to each other on each floor without entering into any room and shall be extended up to the respective terrace.
4. All principal staircases shall not be permitted from the Basement.
5. If provided then STAIR & stair Lobbies from the basement to the top floor shall be pressurized.
6. The roof of the wall shall be 1M above the surrounding roof area.
7. The width of the staircases and corridors and the travel distance of different categories of occupancies shall have to conform to the relevant building rules.
8. Fire and Smoke check doors at the entrances of the Staircase enclosures at each floor level shall be provided AS PER SUIABLE.
9. The F.C.D. shall be at least two-hour Fire resisting wire glass window fitted with a self-closing type openable in the direction of escape.
10. Considering the staircases are the only means of evacuation, emergency lighting arrangement directional, exit, sign, etc. shall be made conforming to the relevant I.S. Code in this regard.

D. LIFT: -

1. The walls of the lift enclosure of the building shall be at least two hours FIRE resisting type respectively marked in the plan with the event at the top of the area not less than 0.2m².
2. The lift of the building shall be designed at high speed "Fire lift" and conspicuously indicated in the plan.
3. One of the lift cars of the building shall be large enough to accommodate standard Ambulance stretchers and Medical Attendants.
4. The electric power shall be from separate supply mains in the building and cables run with the lift shafts, lights, and fans in the lift cars shall be operated from 24 volts, supplied in an emergency in case of failure of normal power supply lift shall automatically trip over alternate supply.
5. Exit doors of the lift lobby shall be through a self-closing smoke stop door of 1-hour fire resistance.
6. The speed of the fire lifts in the building shall be such that they can reach the top from the ground floor



within 1-minute visual indications of floor numbers shall be incorporated in the lift cars.

7. All other requirements shall conform the I.S. specification including the communication facility in the lift cars connecting to the Fire Control Room of the building.

8. Lift car door shall have a fire-resistance rating of half an hour.

9. The words fire lift shall be conspicuously displayed in fluorescent paint on the lift landing doors at each floor level.

10. A positive pressure of 25-30 pa. Shall be maintained inside the lobby. Pressurization shall be maintained around the clock.

E. FIRE FIGHTING WATER:

1. Underground water reservoirs having a total water capacity of not less than 150000 ltrs Exclusively for Firefighting purpose shall be provided.

2. Overhead reservoirs of not less than 10000 ltrs. Shown/ marked in the plan drawings exclusively for firefighting purpose shall be kept full at all times of all Buildings.

3. The water reservoirs manhole shall have an overflow arrangement with the domestic water reservoirs as well to avoid stagnancy of water.

4. Provision of necessary manhole shall be made on the top of these reservoirs as per specification.

5. Provision of replenishment at the rate of at least 1000 ltrs/min. from two separate sources of water supply shall be made.

6. The deep tube wells for the replenishment of the reservoir shall be incorporated with the auto-starting facility with the actuation of auto-detection and suppression arrangement of the premises and shall also be connected with dual power supply units.

7. Provision of placing Fire Appliances near the underground water reservoir to be made to draw water in case of emergency.

F. WATER LAYOUT SYSTEM:

a. Ring main Hydrant System:

1. 150 mm dia. Ring main water layout arrangement converting the entire premises of the project with provision of pillar type yard hydrants with door Hose boxes, containing 63mm delivery hose and short branch pipe shall be provided at all strategic locations and surrounding the buildings conforming I.S. 3844-1989 (up to date amendment).

2. The system shall be so designed that shall always be kept charged with water under pressure and capable to discharge min. 2280 ltrs. /min. at the pressure of 3.5kg/sq.cm. at any point.

b. Wet Riser & Hose Reels System:

1. The building shall be provided with a separate Wet Riser for sprinkler (where applicable) & Hydrant Riser 100 mm internal diameter pipeline each with the provision of landing valves at the staircase landings/half-landings at the rate of one such rise for 1000 sq. m. of floor area.

2. The system shall be so designed that shall be kept charged with water all the time under pressure and capable of discharging 2280ltrs/min. at the ground floor level outlet and minimum 900 ltrs/min. at the topmost and furthest outlet. In both cases the running pressure shall not be less than 3.5 kgs/sq. cm.

3. Provision for Hose Reel units on swivelling drum in conjunction with Wet Riser shall be made near each landing valves.

4. Hose Reel unit with provision of outlets in each floor at the staircase landing/half landing as per suitable at the rate of one such unit of Wet Riser and Hose Reel per 1000sq.m. of floor area.

5. Yard Hydrant/ Ring Main Hydrant with provision of adequate number of Pillar type hydrant shall be installed surrounding the buildings in accordance with relevant I.S. specifications.

6. Provision of suitable Fire Service inlet shall be made as per relevant I. S. specification.

7. All other requirements of the water base Fire Protection System shall be made as per I.S. Specification 3844-1989 (with up-to-date amendment).

c. Automatic Sprinkler Installation:

The automatic Sprinkler installation shall be provided in all floor areas of the Commercial Block and All assembly areas and entire basement area as per provision of NBC part- IV, 2016 and relevant I. S. 9972. Alarm going to be incorporated along with the sprinkler system.

d. Water projector Protection:

The Electrical installation viz. transformer, HT, LT switch gear etc. shall be protected by high medium velocity water projector system as per suitability.

G. FIRE PUMP:

1. Provision of Fire Pump of 2280 LPM shall have to be made to supply water at the rate designed pressure and discharge into the water-based system which shall be installed in the respective pump room.



2. One such pump of same capacity shall always be kept on stand-by of diesel driven type.
3. Provision of separate pump 2280 LPM for sprinkler system to be made to keep the water base system under pressurized condition at all the time and shall be installed.
4. Provision of separate Jockey Pumps of 180 LPM shall also have to be made to keep the water-based suppression systems i.e. hydrant and sprinkler system separately under pressurized condition at all the time.
5. All the pumps shall be incorporated with both manual and auto starting facilities.
6. The suction of pumps shall preferably of positive type or in case of negative suction the system shall be wet riser-cum down comer with suitable terrace pump with overhead tank.

H. a) ELECTRICAL DISTRIBUTION SYSTEM:

1. Electrical distribution system of all the building shall be made in the form of concealed wiring or in heavy gauge M.S. conducted continuously bonded to earth cables shall be I.S. marked and preferably be F.R.L.S. categories.
2. Electrical distribution system shall conform all the requirement laid down in I.S. 1946-1982.
3. For every 23V wiring above false ceiling 660 grade insulated cable shall be used. Transformer switch gear H.T., L.T. and other electrical rooms shall be at the ground floor level and other electric rooms shall be at least 4 hrs. Fire resisting capacity, adequate ventilation arrangement shall have to be made in all the rooms, Dry and explosion proof type shall preferably be installed.
4. All electrical installation viz. Transformers, Switch Gears, L.T., H.T. rooms shall be protected with both auto detection and suppression system as per suitability.

b) Alternative Power Supply:

Arrangement shall be made to supply power with the help of a generator to operate at least the Fire pump, Pump for the deep tube well, Fire Alarm system, etc. and also for illuminating the staircase, corridors etc. and other place of assembly of the building in case of normal power failure.

c) Public Address System: -

Public address system shall have to be provided and linked between all floors and control room with talk back facility.

d) Intelligence Analogue System: -

1. Auto Fire Alarm System with analogue addressable smoke/ Heat detector as per suitability shall be installed in the commercial areas and assembly areas.
2. Addressable analogue manual call boxes incorporating with sounders shall be installed in all floors area of the building in such a manner that maximum travel distance shall not be more than 22.5 mtrs in order to reach any of the call point.
3. Micro Processor based fire alarm panel shall be installed, and all shall also be connected with main panel at the Fire Control Room of the premises having direct facility to the local fire service unit.
4. Public address system shall be made available in all floors of the building. The system shall be connected to the Main Control Room.
5. All the installation shall also be satisfying the I. S. specifications 2189(an amended) and the code of practice as laid down in the N. B. C. Part-IV.

I. AIR CONDITIONING SYSTEM (If any):

1. The A.H.U. shall be separated for each floor with the System Air Duct for individual floors and in no way interconnected with the ducting of any other floors.
2. Arrangement shall be made for isolation at the strategic locations by incorporating auto dampers in the Air Conditioning system.
3. The system of auto shut down of A.H.U. shall be incorporated with the auto detection and alarm system.
4. The air handling unit room shall not be used for storage of any combustible materials.
5. Escape route like staircase, common corridors, lift lobby etc. shall not be used as return air passage.
6. Whenever the ducts pass through Fire wall of floors, the opening rounding the ducts shall be sealed with fire resisting materials such as asbestos rope vermiculite concrete etc.
7. The metallic ducts shall be used even for the return air instead of space above the false ceiling.
8. The materials used for insulating the ducts system (inside or outside) shall be of non-combustible materials, glass wool shall not be wrapped or secured by any materials of combustible nature.
9. Area more than 750 sq. Mtr on individual floors shall be segregated by a Fire wall and automatic fire damper for isolation shall be provided.
10. If the air handling unit serve more than one floor, the recommendation shall give above shall be comply with in addition to the condition given below:
 - a. Proper arrangement by way of automatic fire dampers working on fuse able link for isolating all ducting at every floor from the main riser shall be made.



b. When the automatic fire alarm operates, the respective air handling unit of the air conditioning system shall automatically be switched off.

11. The vertical shaft for treated fresh air shall be of masonry construction.

12. Inspection panel shall be provided in the main trucking to facilitate the cleaning of ducts of the accumulated dust and to obtain access for maintenance of fire dampers.

13. No combustible materials shall be fixed nearer than 150 mm of any duct unless such duct is properly enclosed and protected with non-combustible materials (glass wool or spun glass with neoprene facing, enclosed and wrapped with aluminium sheeting) at least 3.2 mm thick would not readily conduct heat.

14. The ducting shall be constructed of substantial gauge metal in accordance with good practice.

J. FIRST AID FIRE FIGHTING SYSTEM:

First Aid firefighting arrangement in the style of placing suitable type of portable Fire Extinguishers, Fire Buckets etc. in all floors and vulnerable locations of the premises shall be made in accordance with I.S. 2190 – 1992.

K. Emergency & Escape Lighting: -

Emergency lighting shall be powered from a source independent of that supplying the normal lighting. Escape lighting shall be capable of: -

1. Indicating clearly and unambiguously the escape routes.
2. Providing adequate illumination along such routes. To allow safe movement of persons towards and through the exits.
3. Ensuring that fire alarm call points and firefighting equipment provided along the escape route can be readily located.
4. The emergency lighting should automatically activate within one second of the failure of the normal lighting supply.
5. The emergency lighting system shall be capable of continuous operation for a minimum duration of 1 hour and 30 minutes even for the smallest premises.

L. Service Duct/Shafts: -

1. Service ducts & shafts shall be enclosed by walls of 2 hours & doors of 1-hour fire rating.
2. All such ducts shall be properly sealed & fire stopped at all floor level.
3. A vent opening at the top of the service shaft shall be provided having between one fourth & one half of the area of the shaft.

M. Electrical Service: -

1. The electric distribution cable/wiring shall be laid in a separate duct. The duct shall be sealed at every floor with non-combustible materials having the same fire resistance as that of the duct. Low & medium voltage wiring running in shaft or in false ceiling shall run in separate conduits.
2. Water mains, telephone lines, intercom lines, gas pipes or any other service line shall not be laid in the duct for electrical cable, use of bus ducts/ solid rising mains instead of cables is preferred.

N. Separate Circuit: -

1. Separate circuits for firefighting pumps, lifts, staircases, corridor lighting & blowers for pressurizing system shall be provided directly from the main switch gear panel & these circuits shall be laid in separate conduit pipes, so that fire in one circuit will not affect the others.
2. Such circuits shall be protecting at origin in an automatic circuit breaker.
3. Master switches controlling essentials service circuits shall be clearly labelled.

O. Stand by Electric Generator: -

1. A standby electric generator shall be installed to supply power to staircase & corridor lighting circuit, fire lifts the standby fire pumps, pressurization & damper system in case of failure of normal electric supply.
2. The Generator shall be capable of taking starting current of all the machines & circuits, stated above simultaneously.
3. If the standby pump is driven by diesel engine, the generator supply need not be connected to the main electrical supply were parallel HV/LV supply from a separate substation is provided with appropriate transformer for emergency, the provision of generator may be waived in consultation with authority.

P. Transformer: -

Transformer shall conform to the following:

1. A substation or a switched station with oil filled equipment shall not be located in the building.
2. The substation structure shall have separate fire resisting wall/ surroundings and necessarily be located at the periphery of the floor having separate access from the fire escape staircase.
3. The outside walls ceiling, floor, opening including doors & windows to the substation area shall be provided with a fire resisting door of 2 hours fire rating.



4. Direct access to the transformer room shall be provided, preferably from outside the fire escape staircase.

Q. Fire Control Room: -

1. For all building 15 m in height and above, and apartment buildings with a height of 30 m and above, there shall be a control room on the entrance floor of the building with communication system to all floors and facilities for receiving the messages from different floors.

2. Details of all floors plans along with the details of firefighting equipment and installations shall be displayed in the fire control room.

3. The fire control room shall also have facilities to detect the fire on any floor through indicator board's connection, fire detection and alarm system on all floors.

4. The fire staff in charge of the fire control room shall be responsible for maintenance of the various services and the firefighting equipment & installations in co-ordination with security electrical & civil staff of the building.

R. GENERAL RECOMMENDATIONS:

1. Fire License shall have to be obtained for proposed storing and processing with L.P.G. and other highly combustible articles.

2. Fire Notice for Fire Fighting and evacuation from the building shall be prepared and be displayed at all vulnerable places of the building.

3. Disposable Type B.A Musk to be kept always for emergency fire situation.

4. Floor numbers and directional sign, showing the nearest exit, refuge area, and fire points etc. shall have photo luminescent signals at each floor of the building shall be made available conforming I.S. specification.

5. The employees and security staff shall be conversant with installed Fire Fighting equipment of the building and to operate in the event of Fire and Testing.

6. Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipment installed in the building to keep them in perfectly good working conditions at all times.

7. A crew of trained Fireman under the experienced Officer shall be maintained round the clock for safety of the building.

8. Mock Fire practice and evacuation drill shall be performed periodically with participation of all occupants of building.

9. Fire License shall have to be obtained from this Department after compliance of the above Safety Recommendations before commissioning of the Gas Bank.


10. The certificate is to be obtained from the Director General, West Bengal Fire & Emergency Services certifying about the satisfactory services, performance of all the Life and Fire Safety arrangements and installation of the building.

On compliance of all the above Revised Fire safety recommendations, the Director General, West Bengal Fire & Emergency Services shall be approached for necessary inspection and

testing of the installation, Fire Safety Certificate in favour of the occupancy shall be issued on being satisfied with the tests and performances of safety aspects of installation of the building.

N.B. : Any deviation and changes the nature of use of the building in respect of the approved plan drawing, without obtaining prior permission from this office, this Revised Fire Safety Recommendation will be treated as cancelled.


Principal Cum Regional Officer
DAV Model School
Durgapur-713206 (W.B.)


Manager
DAV Model School
DURGAPUR-713206
WEST BENGAL



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Divisional Fire Officer

West Bengal Fire and Emergency Services

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