GOVERNMENT OF WEST BENGAL
OFFICE OF THE DIRECTOR GENERAL
WEST BENGAL FIRE & EMERGENCY SERVICES
13-D, MIRZA GALIB STREET,
KOLKATA- 700016.

Memo No.-WBFES/6324/17/Kol-CB/983/17(983/17) ; Dated:. 21/08/17

From:

Divisional Fire Officer
Fire Prevention Wing
West Bengal Fire & Emergency Services

To: Mr. Amit Sarda, Designated Partner
Genpact India, Simplexinfra Technopark LLP
Candor Kolkata One Hi-Tech Structures Pvt. Ltd.
Candor TechSpace, IT/ITES SEZ, Block – G, Tower- G3,
Ground, 1st & 2nd Floor, Plot No.- 1,2,3 & 3/1,
New Town, Action Area- II,
Kolkata- 700156.

W.B. Fire & Emergency Services ★ Prevention Wing ★ सत्यमेव जयते

Sub: Fire Safety Recommendation for proposed construction of G+XXV storied under group of Businesss Building at premises No.- DP- 6, Sector- V, Salt Lake, Kolkata- 700091.

This is in reference to your letter no.- STLLP/GENPACT/WBFES/2017/07/01 ; Dated: 13.07.17 regarding Fire Safety Measures for proposed construction of G+XXV storied under group of Businesss Building at premises No.- DP- 6, Sector- V, Salt Lake, Kolkata- 700091.

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

Enclo :

1. One set of plan drawing.
2. Recommendation placed in this file.

17/8/17

Divisional Fire Officer
Fire Prevention Wing
West Bengal Fire & Emergency Services

RECOMMENDATION

A) CONSTRUCTION:

1. The whole construction of the proposed building shall be carried out as per approved plan drawings conforming the relevant building rules of local Municipality Body.
2. The interior finish decoration of the building shall be made low flame spread materials conforming I.S. specifications.
3. Materials for rapid flame spread categories including untreated wood fibre board etc. shall not be used. The doors and windows preferably shall be made of metal.
4. Arrangement shall have to be made for sealing all the vertical and horizontal ducts by the materials of adequate fire resisting capacity.
5. Fire rating test certificate of all interior finish decoration should be submitted to this office before taking occupancy.
6. Service ducts and shafts shall be enclosed by a wall of two hours and doors of one hour fire rating. All such ducts shall be properly sealed and fire stopped at all floor levels.

B) OPEN SPACE AND APPROACH ROAD:

1. The open spaces surrounding the building shall conform the relevant building rules as well as permit the accessibility and maneuverability of Fire Appliances with turning facility.
2. The approach roads shall be sufficiently strong to withstand the load of Fire Engine weighting 45M.T.
3. The width and height of the access gate into the premises shall not be less than 5.0 mts. and 5.0 mts. respecting the abutting road.
4. Drive way should be free from any type of obstruction. No parking will be allowed on the drive way.
5. All the Passage way should be kept clear for free access.

C) STAIRCASE:

1. The staircase of the building shall be enclosed type. Entire construction shall be made of bricks/R.C.C. type having Fire Resisting capacity not less than two hours.
2. The staircase of the building shall have permanent vents at the top equal to 5%of the cross sectional area of the staircases enclosures and openable sashes at each floor level equal to 15% of the said cross section shall have to be provided in the external walls of the building.
3. All principal staircases from ground to top floor level shall be pressurized. A positive pressure of 25-30 pa shall be maintained inside the staircases round the clock.
4. The width of the staircase shall be made as marked in the pan. Corridors and the exit doors shall conform the relevant Building Rules with up to date amendment.

5. All the staircases shall be extended up to terrace of the building and shall be negotiated to each other without entering into any room at each floor.
6. Fire and smoke doors at the entrances of all the staircase enclosures as marked in the plan at each floor level shall be provided. The F.C.D. shall be of at least one hour Fire Resisting wire glass window fitted with self-closing type openable in the direction of escape.
7. The width of the staircases and corridors and travel distance of different categories of occupancies shall have to conform the relevant building rules.
8. Considering the staircases are only means of evacuation, emergency lighting arrangements, directional exit signs etc. shall be made conforming the relevant I.S. Code in this regards.

D) LIFT:

1. The walls of the lift enclosure shall be at least two hours Fire Resisting type.
2. Collapsible gate shall not be permitted.
3. The lift of the building shall be designed at high speed " Fire Lift " and one of the lift shall be designed for Fire Lift. The word "FIRE LIFT" shall conspicuously written at ground floor.
4. The Electric power shall be from separate supply mains in the building and cables run in the Lift shafts, Lights and fans in the lift cars shall be operated by 24 volts supply on emergency in case of failure normal power supply and lifts shall automatically trip over with alternative power supply.
5. Pressurization system shall have to be provided at the lift shaft and lobbies, where the lifts are provided at the core of the building or, mechanical extraction systems may be provided at the lift machine room and in the lift shaft.
6. Exhaust fans at the lift machine rooms shall be provided to extract smoke from the lift shaft. In case of failure of normal power supply, it will automatically switch over to the alternative power supply.
7. Exit doors of the lift lobbies shall be through a self-closing smoke stop floor of one hour fire resistance and the speed of fire lifts in the building shall be such that it can reach the top from the ground floor within one minute in visual indications of the floor numbers shall incorporated in the lift cars.
8. All other requirements shall conform the I.S. specifications including the communication facility in the lift cars connecting with the Fire control Room of the building.

E) REFUGE AREA:

1. Refuge area is not less than 15 sqm. and shall be provided on the external wall with cantilever projection or other suitable means at above 24.95 mtrs., 38.91 mtrs., 54.91 mtrs., 70.91 mtrs. & 86.91 mtrs. levels of the building as shown/marked in the drawings.

2. The refuge areas shall be at least four hours of Fire Resisting construction and protected with self-closing F.C.D. at the entrance from the corridors at staircase lobbies.
3. The position of refuge areas shall be such so that they are negotiable by the Fire Service Ladder from the ground level.

F) FIRE FIGHTING WATER:

Underground water reservoir having water capacity of 350000 ltrs. and overhead water reservoir having capacity of 20000 ltrs. exclusively for fire-fighting purpose with replenishing arrangements @ 1000 ltrs/min. preferably from two different sources of water supply shall be provided. The water reservoirs shall have overflow arrangement with the domestic water reservoir as well as to avoid stagnancy of water. The water reservoir shall be kept full at all time. 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 duel power supply units.

G) WATER LAYOUT SYSTEM:

a. Yard Hydrant, Wet Riser and Hose Reel systems:

1. The building shall be provided with Wet Riser of 150 mm. internal diameter pipe line with provision of landing valves at the staircase landings/half landings at the rate of one such riser for 1000 sqm. of floor area. The system shall be so designed that shall be kept charged with water all the time under pressure and capable to discharge 2850 ltrs /min. at the ground level outlet and minimum 900 ltrs/min. at the top most outlet. In both cases the running pressure shall not be less than 3.5 kgs/sq.cm. All other requirements shall conforming I.S. 3844-1989.
2. Provision for Hose Reel in conjunction with Wet Riser shall be made at each floor level and conforming the relevant I.S. Specifications.
3. Ringman Hydrant with provision of adequate numbers hydrant with one number of Fire Service Inlet shall be installed in the building in accordance with relevant I.S. specifications.

b. Automatic Sprinkler Installation:

The automatic sprinkler installation shall be provided in all floor areas of the building as per I.S. 9972. Alarm Gong to be incorporated along with the sprinkler system.

c. High Velocity Water Spray Projector System:

The Electric installations viz. Transformer, HT & LT Switch Gear etc. Shall be protected by High Velocity Water Spray Projector System as per suitability.

H) FIRE PUMP:

1. Provision of the Fire Pump shall have to be made to supply water at the rate-designed pressure and discharge into to the Water based system, which shall be installed in the building. One such pump shall always be kept on stand-by preferably be of diesel driven type.

2. A Separate Fire Pump shall preferably be made for the total Sprinkler Installation of the building. Provision of the two nos. of Jockey Pumps shall also have to be made to keep the water based system under pressurized condition at all the time. All the pumps shall be incorporated with both manual and auto starting facilities. 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.

I) ELECTRICAL INSTALLATION AND DISTRIBUTION:

1. The electric distribution system of the building shall be made in the form of concealed wiring or in heavy gauge M.S. conductor continuously bonded to the earth cables shall be I.S. marked and preferably be of F.R.L.S. categories.
2. The electrical installation including Transformers, Switch Gear, Main & Meters etc. and the distribution system of the premises shall be made satisfying the code of practice for Fire Safety in general building as laid down in I.S. specification 1946-1982.
3. The vertical and horizontal electrical ducts shall be sealed at each floor level by fire resisting materials.
4. The electrical installation shall be adequately protected with CO2/D.C.P. Fire Extinguishers.
5. Arrangement for **alternative power supply** shall have to be made to supply power with the help of a generator to operate at least the Fire Pump, Deep Tube-Well Pump, Fire Alarm System etc. and also for illuminating the Staircase, Corridors, Lobbies etc. and other places of assembly of the building in case of normal power failure.

J) INTELLIGENCE ANALOGUE SYSTEM:

1. Auto Fire Alarm System with Analogue Addressable Smoke/Heat Detectors as per suitability shall be installed in each floor.
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 dialing facility to the local Fire services unit.
4. Both way Public Address Systems shall be made available in all floors of the building. The system shall be connected to the main Control Room.
5. All the installations shall also be satisfy the I.S. specifications 2189 (as amended) and the code of practice as laid down in the N.B.C. Part- IV.

K) MULTI LEVEL AUTOMATED MECHANIZED CAR PARKING SYSTEM:

1 **Structural design:-** The MLCP shall be constructed of structural steel construction.

2 **Vertical Deck Separation:-** For MLCP having Multi Car Parking level, vertical Fire separation between the upper and lower decks by using a non-perforated and non-combustible materials (Structural Steel Plate) shall be provided. This is to minimize

direct impingement of flame to the car in the upper deck and also to prevent dripping of any possible leaking fuel to the lower deck. Proper drainage system shall have to be provided for accidental leaking of oil from the car and sand bed shall be provided at the ground level.

3 **Fire Engine Access Way:-** Access way shall be provided for the Fire Engine to gain access to the car park entrance and exit.

4 **Fire Hydrant:-** Fire Hydrants are to be provided in accordance with Cl 4.4 .

5 **Natural Ventilation:-** Each Car Parking deck shall be provided with at least 50% external ventilation opening of the perimeter wall areas and uniformly distributed.

6 **Sprinkler & Detection System: -** Open Modular Type Sprinkler along with Detectors shall be provided in all MLCP areas as per relevant I.S. Specification. Cross zone wise Sprinkler system shall have to be implemented.

7 **Fire Pump:-** Separate Jockey and Sprinkler pump of suitable capacity shall have to be installed for the MLCP areas.

8 **Operating System:-** Both Mechanical and Manual type operating system shall have to be provided.

L) AIR CONDITIONING SYSTEM (If any):

1. The A.H.U. shall be separated for each floor with the system. Air Ducts for individual 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 Units room shall not be used for storage of any combustible materials.

M) FIRST AID FIRE FIGHTING SYSTEM:

1. First Aid Fire Fighting arrangement in the style 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.

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

4. The employees and security staffs shall be conversant with installed Fire Fighting Equipments of the building and to operate in the event of Fire and Testing.
5. Arrangement shall be made for regular checking, testing and proper maintenance of all the Fire Safety installation and equipments installed in the building to keep them in perfectly good working conditions at all times.
6. A crew of trained Fireman under the experienced Fire Officer shall be maintained round the clock for safety of the building.
7. Mock Fire practice and Evacuation Drill shall be performed periodically with participation of all occupants of the building.
8. Each year a 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 installation of the building.

On compliance of all the above **Life and Fire Safety Recommendation**, the **Director General, West Bengal Fire & Emergency Services** shall be approved for necessary inspection and testing of all 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 **Fire Safety Recommendation** will be treated as cancelled.

17/6/12

Divisional Fire Officer
Fire Prevention Wing
West Bengal Fire & Emergency Services

W.B. Fire & Emergency Services ★ Prevention Wing ★ सत्यमेव जयते