GENERAL CONCLUSIONS

Based on the visual survey of non-residential premises store "Billa", located at Bolshie Krylatskie holmy str. 6, Moscow, the following conclusions can be drawn:

1. **The surveyed premise is located at** 1st floor. The building is detached, complex in shape, variable number of storeys, 1-2-storeyed. Functional purpose is commercial of free planning. It is recommended to determine the technical condition of the load-bearing and enclosing structures of the building, survey of engineering networks (electric supply), to identify faulty and emergency overlap areas and to develop recommendations for their repair and reinforcement.
2. **The structural building scheme is** framed. The basic load-bearing structures are columnar precast reinforced concrete foundations, metal columns; secondary and major metal joists and covers, monolithic overlap and coating on metal beams. The building’s spatial rigidity and stability is ensured by rigid sealing of the columns in the ground work, elements of the braced framing in the transverse direction, including connections along the columns, hard disks of the ceilings and coverings.
3. . **The ground works** under framing’s columns are columnar, prefabricated reinforced concrete on a natural basis. ***The general condition of the ground work is estimated as operational.***
4. **The building frame**

The columns of frame are metallic, represented by the main cell, 4x9m. Cross-section of columns is I-beams # 30K1. Corrosion, rolls of columns are not available. Conjugation of columns with binding joists is rigid welded, made by metal tables.

The main joists are of 9 meters bay in the transverse direction of the T-section No. 35. Secondary joists are of I-section No. 20. Corrosion, rolls, deflections are not available. The metal structures are painted. The column support in the transverse direction is rigid, made by metal tables.

The overlap is made on a metal profiled sheet with a height of 75 mm, with reinforcement in each wave. The overlap height is 150 mm

During the survey, selective measurements of the geometric parameters of the framework, sections, and thickness of the elements were made.

When the building was reconstructed, a frame reinforcement and inter-floor overlap under a separate project was carried out (see Appendix No. 4. Archival materials).

**The bearing capacity of a reinforced concrete slab of 20 cm thick floors along the ground of the first floor amounts to 1000 kg / m2 of running load.**

**The load-bearing capacity of a monolithic intensified overlap of first floor on metal beams amounts to 800 kg / m2 of running load.**

***The overall technical condition of frame constructions is assessed as operational***

**5. Partitions**

The partitions in the building are mostly made of brick, with a thickness of 150 mm, considering the plaster, in some places from the plasterboard on a metal frame and from gas silicate blocks. Masonry material: in wet rooms is solid ceramic bricks with cement-sand mortar, in the other premises is slit ceramic bricks on cement-sand mortar. Lintels above the doorways are prefabricated, reinforced concrete.

Vertical and horizontal cracks in the partitions, cracks in the finish in the places of conjugation of partitions from the plasterboard with reinforced concrete frame and with brick areas are not revealed.

***The technical condition of the partitions as a whole is rated as operational.***

**6. Enclosure structures**

Exterior walls are represented as foam concrete blocks, insulated with ventilated facade throughout the building perimeter.

Glazing replacement of the front facade is not required.

It is necessary to determine by the project additional insulation of the facades.

The coating is made of sandwich panels on a metal frame.

The condition of the enclosing structures are suitable for further use, the roof panels in the ventilation chamber are in unsatisfactory condition (seam opening of the panel joint, the deflection is exceeded with respect to the normative by 2-5 cm). It is necessary to perform a detailed survey and reinforcement under a separately designed project.

7**. Utilities**

The following utilities are involved in the building: water supply, sewerage, hot water and central heating from city networks, electricity, video surveillance, ventilation and air conditioning, refrigeration, communication networks. The survey revealed the availability of hot and cold water meters, located in the central chillers of the building. Electricity is available in the electrical room on the 1st floor. Heat meters of heat supply are located in the Trade Hall behind the roller shutter together with the unit and block terminal of local heat distribution and metering station.

**Summarizing the results of the survey, it can be concluded that at the present moment the overall technical condition of the building structures is estimated as operational.**

**It is recommended to carry out a complex of measures for the repair of structures in places where defects exist at specially designed project.**

7. GENERAL RECOMMENDATIONS FOR CONSTRUCTIONS REPAIR

1. In the process of operation, it is required to take measures to prevent 1st floor overloading by temporary load of goods with liquid by loading them to the ceiling of the first floor in the corridors and warehouses of the technical area of the store premises

2. It is recommended to perform periodic inspection of load-bearing structures of the first floor for the presence of girders deflections, roll of columns during the store premises operation after renovation works.

**7.1 Removable structures**

In the process of the reconstruction of trading hall premises the following structures are to be and can be removed.

1. The suspended ceilings are to be/can be removed.

2. Decorative plasterboards of walls and ceilings are to be/can be removed.

3. It is required to expand the necessary openings of brick walls after reinforcing the openings with metal bridges.

4. All necessary partitions (especially in the technical area) from plasterboard, bricks up to 150 mm thick, gas silicate with thickness up to 200 mm are to be/can be removed.

5. The low power networks in the ceiling area are to be/can be removed.

6. The lighting and outlet networks in the ceiling area are to be/can be removed.

7. The general ventilation network in the ceiling area are to be/can be removed.

**7. Unremovable structures.**

In the process of the reconstruction of trading hall premises the following structures cannot be removed:

1. Columns and joists of the building's frame, brick bearing walls and party walls of the building.

2. Fire hydrants and fire safety system (partial local transfer is possible according to the requirements of the technology section).

4. The heating system of premises (partial local transfer is possible according to the requirements of the technology section).

5. Transit communications (stand pipes sewn into separate plasterboard boxes) sewerage, storm sewage, water supply, ventilation and heating from adjacent premises.

6. It is not required to stone the light openings in the walls of the main facade.

7. It is not recommended to pierce the openings in the bearing structures of walls and ceilings without prior reinforcement.