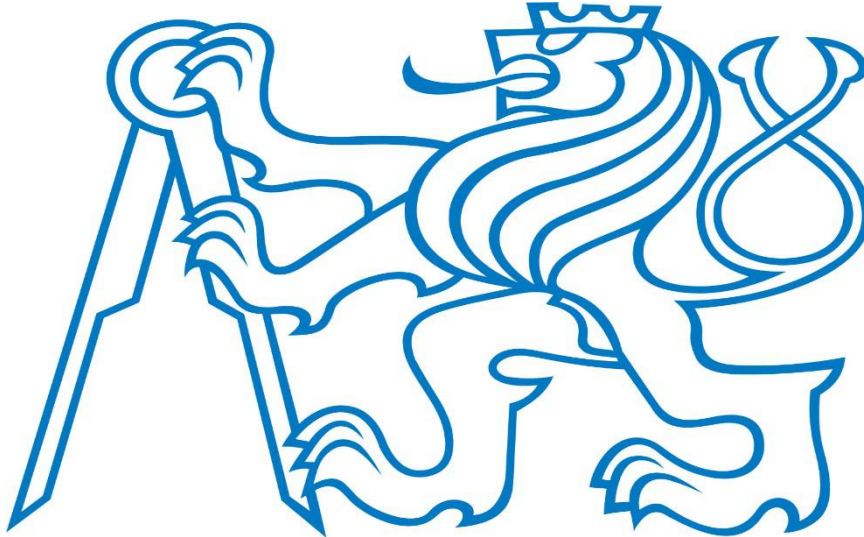


Czech Technical University in Prague

Faculty of Civil Engineering Thákurova 7, 166 29 Praha 6



TECHNICAL REPORT **PART FOUNDATION**

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According to CSN 731001 ,Foundation soil under shallow foundation'

DIPLOMA PROJECT **RESIDENTIAL APARTMENT BUILDING**

Name: Bc.Yosufi Mohammad Fayez
Supervisor: doc.Ing. František Kulhánek, CSc.
Consultant: Ing . Jan Salak ,CSc
Academic year:2019/2020
Signature:

Identification data:

- **Project name:** Residential apartment building (Multifunctional)
- **Location:** Prague Pod Harfou
- **Function of the building:** Apartment building, Administrative, Shopping, Garage.
- **Stage :** Building permits.
- **Investor :** Private.
- **supplier:** will be selected by tender.

General description of engineering design of the foundations:

a) Purpose of this object:

- This Apartment building will be located in an urban area Pod Harfou Prague 09 Czech Republic the total area of the building is 667 m² this building is consists of seven floors including of the basement, the basement is provided for car parking, ventilation and boiler rooms for the whole residence of the building and on the ground floor there is stores and storage's, staircase , elevators, roof is not accessible to public except repair and maintain reason there is also four Apartments.

b) Structural solutions of foundation:

- Basically the general vertical load of the building is distributed vertically by two course of the shallow foundations into subsoil.
 - 1) By reinforced concrete wall from whole round of the building including of concrete core, in subsoil bearing capacity shall be provided with strip footing.
 - 2) By reinforce concrete columns which is positioned mainly inside of the building, in subsoil bearing capacity shall be provided with Centric spread footing.

Generally this strip foundation is a continues reinforced concrete strip on which the load bearing walls with the thickness of 300 mm are built centrally.

This represents a level base for the walls and its dimensions must be sufficient to allocate the load imparted to the foundation to subsoil area capable of supporting the building weight without excessive compaction, so due to the fact that the use of concrete as it is easy to place, spread and level in the foundation trench. Due to its ability to harden concrete creates a basis for walls and develops proper compressive strength to support the foundations' load therefore The basic purpose of this foundation is to spread the load over a larger area so that the soil is able to withstand the stress, and safe bearing pressure is not exceeded.

Geotechnics values of soils of covering formations:

Subsoil sections:	Petrographic compositions:
GT1: 0,0 – 2.30 m	Sandy loam and loamy sand with waste, Poorly graded sand (SP) medium dense.
GT2: 2.30 – 4.50m	Sandy loam and loamy sand, well graded gravel (GW) medium dense.
GT3: 4.50 - 7.40m	Sand with boulders and loamy admixture.
GT4: 7.40 - 13.40m	Loamy sandy gravel.
GT5: 13.40 – 13.80m	Weathered clayey shales.
GT6: 13.80 – 15 m	Slightly weathered clayey shales.

Non-weathered shale.

Ground-water is located at the position of the 12.10 m below ground level.

The position of my final footing for extreme one is at the depth of 4.60 m therefore I will consider the design consideration GT2: 2.30 - 4.60m sandy loam and loamy sand, so it mean that The foundation of this building is effected by this layers which is initiated from 0 level till the 4.60 m deep therefore my calculation will focused more in this sub-layers.

Further Justifications of calculations and parameters shall be determined by GEO5 & RFEM.