

ICS 91.020
CCS P 50



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 51358-2019

Standard for urban underground space planning

Issued on: March 13, 2019

Implemented on: October 1, 2019

**Issued by: Ministry of Housing and Urban-Rural Development of the
People's Republic of China;
State Administration for Market Regulation**

Table of Contents

- 1 General
- 2 terms
- 3 Basic Regulations
- 4 Located in key urban development areas.

1 General

1.0.1 This standard is formulated in order to strengthen the protection and scientific utilization of urban underground space resources, promote the overall coordination and comprehensive utilization of above-ground and underground spaces, and standardize the planning and implementation of urban underground space planning.

1.0.2 This standard is applicable to urban underground space planning in the stages of overall urban planning and detailed planning.

1.0.3 The utilization of urban underground space should abide by the basic principles of equal emphasis on resource protection and coordinated development, combination of near and far, combination of peacetime and wartime, public priority and system priority.

1.0.4 The urban underground space planning shall not only comply with this standard, but also comply with the provisions of the current relevant national standards.

2.0.1 urban underground space

The natural or artificially developed space below the surface of the urban administrative area is the extension and supplement of the ground space. Underground space in this standard refers to urban underground space.

2.0.2 urban underground space planning

The comprehensive deployment, specific arrangement and implementation management of the development and utilization of urban underground space in a certain period of time.

2.0.3 Assessment on underground space resources

According to the urban stratum environment and structural characteristics, it is necessary to determine the influence of the natural, environmental, cultural and urban construction elements of rock mass and soil within a certain depth on the development and utilization of urban underground space, and to clarify the suitable scale and distribution of underground space resources. An important basis for underground space planning.

2.0.4 analysis of underground space demand

According to the development goals, construction scale, social and economic development level and underground space resource conditions of the planning area, it is necessary to analyze and judge the necessity and feasibility of urban underground space utilization, the scale and function ratio of underground space utilization within a certain period of time. Important guidance and basis for urban underground space layout.

2.0.5 underground space master plan

The comprehensive arrangement and overall deployment of the basic principles, objectives, strategies, scope, overall scale, structural features, functional layout, underground facility layout, etc. of the utilization of urban underground space resources in the planning area within a certain period of time.

2.0.6 underground space detailed plan

The scope, scale, spatial structure, number of development and utilization floors, layout of public space, layout of various facilities, development scale of various facilities by item, traffic corridors and traffic flow for the development and utilization of underground space in key areas or nodes of urban underground space The planning control and guidance requirements proposed by line organizations, etc.

2.0.7 underground transportation facilities

Facilities that use urban underground space to realize transportation functions, including underground road facilities, underground rail transit facilities, underground public pedestrian passages, underground transportation stations, underground parking facilities, etc.

2.0.8 Underground road facilities underground road facilities

The general term for passages and supporting facilities below the surface or mainly located below the surface for motor vehicles or both non-motor vehicles and pedestrians.

2.0.9 underground rail transit facilities

The general term for railways, urban rail transit lines, stations and supporting facilities that are below the surface or mainly located below the surface.

2.0.10 underground transit station underground transit station

The general term for underground or semi-underground transportation stations, including urban rail vehicle bases, highway passenger and freight stations, bus stations and taxi stations, etc.

2.0.11 underground municipal and utility facilities

Facilities that use urban underground space to realize municipal public functions such as urban water supply, power supply, gas supply, heat supply, communication, drainage, and sanitation, including underground municipal stations, underground municipal pipelines, underground municipal pipe galleries and other underground municipal public facilities.

2.0.12 utility tunnel

Structures and ancillary facilities built underground in cities to accommodate two or more types of urban engineering pipelines.

2.0.13 Underground pipeline underground pipeline

A general term for pipelines and ancillary facilities for water supply, drainage, gas, heat, electricity, communication, industry, etc. laid under the surface.

2.0.14 Underground civil air defense facilities underground civil air defense facilities

Underground protective buildings built to meet the needs of civil air defense command, communication, and shelter, including underground communication command engineering, medical rescue engineering, air defense professional team engineering, and personnel shelter engineering.

2.0.15 comprehensive disaster prevention of underground space

According to the conditions of urban underground space resources and the characteristics of urban disasters, the unified organization and coordination of different systems such as command and communication, personnel shelter and evacuation, emergency refuge, fire rescue, medical rescue, transportation and evacuation, public security, living security, and material storage, etc. Deployment, put forward the strategy and spatial layout of using urban underground space to improve urban disaster prevention ability and urban underground space's own disaster defense.

3 Basic Regulations

3.0.1 The phase division of urban underground space planning should correspond to the urban planning phase, and the planning time limit should be consistent with the urban planning time limit of the corresponding phase.

3.0.2 Urban underground space planning should pay attention to the overall protection of ecological environment and cultural heritage.

7.2.2 The entrances and exits of underground rail transit stations should be

comprehensively set in consideration of the surrounding land use status and planning, station layout and vertical buried depth, and should be connected with the pedestrian system around the station.

7.2.3 The planning and control scope of underground rail transit lines shall comply with the relevant current national standards. The planning control scope of the transition section and the station shall be determined after special research.

7.3 Underground Transportation Station Facilities 7.3.1 Passenger transport stations connected with underground rail transit stations or underground space can be set underground. Taxi depots that are closely integrated with underground rail transit stations should be arranged underground. Bus stations with the functions of waiting for passengers and loading and unloading passengers should not be arranged underground.

7.3.2 A buffer space shall be set up between the underground transportation stations with environmental impacts such as exhaust gas and noise and functions such as residence and office.

7.3.3 The clear height of the underground bus parking lot shall comply with the current relevant national standards. When there are double-decker buses parked, the clear height should not be less than 4.6m.

7.3.4 Underground transportation stations should take measures such as setting up semi-open spaces, transparent roofs, and light pipes to reduce artificial ventilation and artificial lighting.

7.4 Underground road facilities 7.4.1 Underground roads can be set up in areas with high ecological environment, landscape requirements, high land value or complex traffic organization. The setting of underground roads shall be determined by special demonstration.

7.4.2 When underground roads intersect, one-way traffic organization should be adopted.

7.4.3 When the underground road intersects with the underground rail transit line section, the underground road should be arranged on the upper layer of the rail line section. When the underground road intersects with the underground rail transit station, the underground road shall be determined through special research.

7.5 Underground parking facilities 7.5.1 Connecting roads should be set up between the underground garages in the central areas of the city at all levels, and a network should be formed.

7.5.2 It is advisable to adopt the underground parking method for newly-built residences to realize the three-dimensional separation of people and vehicles.

7.6 Underground public pedestrian passages 7.6.1 The number of elevation changes should be reduced for underground public pedestrian passages, and escalators should be