

For Information

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**Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways**

Underground Strata Resumption for Railway Projects

Purpose

This paper briefs Members on the resumption of underground strata for railway projects.

Strata Resumption

2. As land is precious, resumption of the underground strata of private land for the construction of underground public infrastructures (e.g. roads and railways) is common in Hong Kong and major cities around the world. Taking Hong Kong as an example, resumption of the underground strata of private land is often necessary for the railways construction, from the Kwun Tong Line in 1970s to the recent projects. Strata resumption does not affect the existing land use above ground or the structure of the buildings thereon.

Need for Strata Resumption for Railway Projects

3. For railways passing through the urban areas, the major consideration in alignment selection is to minimise impacts of the construction and operation on the local communities, traffic, and existing infrastructure and buildings, as well as to minimise the extent of resumption of private land and strata. However, in view of the closely erected buildings in the urban areas, resumption or temporary occupation of the underground strata of some private buildings for the construction of railway tunnels is often unavoidable.

4. Among the railway projects under construction or planning, the underground strata of some private buildings have been or will be resumed for the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link, the West Island Line, the South Island Line (SIL) (East), the Kwun Tong Line Extension (KTE) and the Shatin to Central Link (SCL)¹.

Structural Integrity of Buildings Unaffected by Strata Resumption

5. The foundation design of buildings varies according to major factors such as the geological conditions of strata, loads of buildings, layouts of walls and columns, etc. Some buildings have piles for their foundations. Others have footings that go less deep into the ground. Nevertheless, all buildings have to comply with the safety requirements of the Buildings Ordinance and the related Building (Construction) Regulations, regardless of the foundation design adopted.

6. The MTR Corporation Limited (MTRCL) is experienced in constructing railway tunnels in urban areas. When designing railway facilities, the MTRCL will study carefully the records and drawings of the foundations of buildings provided by the Buildings Department, and conduct detailed site investigation to have a full picture of the foundation designs of the existing buildings. In designing the railway tunnels, the MTRCL has to consider the impact on the buildings along the railway alignment. The foundation loads of the existing buildings will be taken into full account.

7. During the planning stage of a railway project, the MTRCL will, at the detailed design stage, conduct impact assessments for the buildings above or adjacent to the railway tunnel, as well as geological investigations along its alignment. Only when the assessment results indicate that construction of the tunnel will not affect the structural integrity of the buildings, the railway alignment scheme can be eventually adopted. Complying with the best international standards, the assessment methodology adopted by the MTRCL is recognised by the relevant government departments and overseas experts. It has been widely applied internationally. The Jubilee Line Extension and the Crossrail in London, the Circle Line in Singapore, the Dubai Metro in Dubai, the Dublin Metro in Ireland and the Madrid Subway in Spain have all adopted

¹ As the SCL is still at the planning stage, the exact extent of strata resumption is subject to change.

the same assessment methodology.

8. Prior to commencement of construction, the MTRCL will undertake pre-construction condition surveys for the buildings along the railway alignment to protect the interests of the owners or occupiers concerned, and to formulate the most appropriate construction methods and protective procedures to be adopted during the construction period. Monitoring points will be established at the buildings and structures adjacent to the works areas. Monitoring will be conducted throughout the construction stage. If any irregularity is detected during tunnelling, the MTRCL staff of the works sites will promptly follow-up and conduct inspection.

9. Apart from the professionals employed by the MTRCL, the relevant government departments will also monitor the construction of railway projects from time to time to ensure that the contractors have implemented the projects in accordance with the plans. Moreover, suitable professional and technical staff will be deployed to monitor the quality of the construction works so as to safeguard public safety and structural integrity of the nearby buildings.

Building Redevelopment

10. The Administration understands that some residents are worried that the redevelopment potential of their buildings and hence value of their properties may be adversely affected by underground strata resumption.

11. The redevelopment potential of a building is affected by many factors, such as the relevant legislation and land lease conditions. Specific redevelopment proposals have to be approved by the departments concerned. Broadly speaking, restrictions on building development in Hong Kong mainly include the Building (Planning) Regulations (Cap. 123), Outline Zoning Plans and land lease conditions, etc. These requirements will restrict the use, height and gross floor area permissible of the redeveloped building. For instance, if a building has already been developed to the gross floor area permissible of the site, there will not be any increase in floor area upon redevelopment. Such restrictions have nothing to do with resumption of underground strata.

12. From the engineering perspective, railway tunnels are often constructed in the rock strata or other solid strata deep below ground with considerable bearing capacity. As a result, in most cases, the existence of the railway tunnels will not impose insurmountable technical constraints on future redevelopment of the buildings. Even if additional works are required to protect the railway facilities, the affected owners may make claims for extra expenditure incurred in accordance with the Railways Ordinance (Cap. 519). According to the record of the past 3 years, there were around 2 800 applications for redevelopment of or alternations to buildings within the railway protection zones and none was refused because of the need for protecting the railway facilities.

13. Examples of successful for redevelopments in the railway protection zones include the redevelopment in Wing Lok Street, Sheung Wan (a 25-storey building above the tunnel of the Island Line, which is constructed at a depth of about 23 metres); the development in King's Road (a 32-storey building above the tunnel of the Island Line, which is constructed at a depth of about 22 metres); the new hotel in Tin Hau (a 40-storey building above the extended tunnel between Tseung Kwan O Line and the Island Line); and the present redevelopment in Des Voeux Road West (a 34-storey building above the tunnel of the Island Line).

Owners' Interests Protected by Railways Ordinance

14. The Railways Ordinance protects the interests of the owners of the strata to be resumed. In accordance with section 32 of the Ordinance and the time limits as stipulated in Part II of the Schedule to the Ordinance, the owners may serve written claims on the Secretary for Transport and Housing (STH) for any loss arising from strata resumption.

In the event of damage to any building

15. In the event of damages to any building resulting from the railway works, the MTRCL and the concerned contractor will take appropriate follow-up action immediately. According to the Railways Ordinance, the owners may also serve written claims on the STH before the expiration of one year from the date of completion of the railway works.

In the event of constraints on redevelopment

16. In the event that upon future redevelopment, the Building Authority, in order to avoid incompatibility between the building works and the railway facilities, requires the amendment of the plans of the building works or imposes additional conditions, any owner who has reasonably suffered loss as a result of complying with such requirements (including the extra expenditure incurred) may serve written claims on the STH, according to the requirements of the Railways Ordinance, before the expiration of one year from the date of completion of the building works.

Claims procedure

17. The claims procedure has been set out in section 34 of the Railways Ordinance. The claimant must provide the STH with personal particulars, details of the land or property concerned, the amount of the claim and how it is calculated, etc. The claim may be settled by agreement between the parties and thus may not necessarily involve legal proceedings. Enquiries may be made to the Railway Development Section of the Lands Department.

Communication with Residents Affected by Strata Resumption

18. Hong Kong is a densely populated city with limited land. Railways are mass carriers usually constructed underground in populous areas to serve a larger catchment and minimise the occupation of space above ground. As such, resumption of strata for railway projects is often unavoidable. In the course of planning of railways, we will avoid strata resumption as far as possible; and if that is unavoidable, we will strive to keep the extent of strata resumption to a minimum to reduce the impact on the community. However, railway design is a very complicated task and has to take into consideration many factors. The alignment option is subject to adjustment as the study progresses. Therefore, the actual extent of strata resumption can only be ascertained after the detailed plans of the works have been finalised nearing the end of the planning stage.

19. Our experience in the past thirty years has shown that strata resumption for the construction of railway tunnels will not affect the safety of buildings along the alignment or the existing use of the buildings. In case there is a reduction in the scale of future redevelopment or an increase in the cost of future redevelopment as a result of strata resumption, the affected owners will be granted compensation for the difference in accordance with the Railways Ordinance. However, the Administration understands that there might be some residents who still have misgivings about strata resumption. Since mid-2009, we have enhanced the liaison with residents affected by strata resumption for railway projects. We have attended numerous residents' meetings to brief them on the resumption of strata and its impact, as well as to disseminate relevant information such as the conditions of buildings, locations and depth of railway facilities to be built, geological conditions of the site where the building is located, existing plot ratio (and permitted plot ratio) of the building and the claims mechanism, etc.

20. In addition, through the Community Liaison Groups or the information centres, the MTRCL briefed local residents on the progress of the works and addressed their concerns. The Administration will continue to explain to the affected residents, via different channels, the details of strata resumption and relevant information.

21. In fact, in view of the increasing public concern over strata resumption, the Administration has enhanced the communication with the affected residents as soon as possible when implementing new railway projects. For instance, to implement the KTE, SIL (East) and SCL projects, the Administration has approached the institutions and residential developments which would be affected by strata resumption during the gazettal of the projects to explain the details of strata resumption and to listen to their views on the construction works.

Transport and Housing Bureau
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