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**THE DEVELOPMENT AND ADMINISTRATIVE ISSUES OF  
STRATUM TITLE FOR UNDERGROUND LAND  
RESOURCES IN MALAYSIA**

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## **1.0 INTRODUCTION**

The establishment of shop lots below the Merdeka Square about fifteen years ago, the recently completed Petronas Twin Towers and Light Rail Transit are the comprehensive developments of underground land in Malaysia. Being a new form of land development several problems have been encountered, which includes the legal implications to the landowners above the developments and technical problems pertaining to building structures and the safety of the occupants. To overcome some of the problems the National Land Code (NLC), the principal land legislation in this country was amended in 1990 to enable the State Authority to issue Stratum Title to spaces underground. These Stratum Titles can be issued separately from the land titles issued for the surface land.

What are the different legal rights that the “landowners” on the surface and the one below have? What are the technical matters that need to be considered before the Stratum Titles are issued? These are the queries that this paper is to address and their answers will possibly facilitate a smoother process in the development of underground spaces.

## **2.0 CONCEPT OF UNDERGROUND LAND**

Before the amendments to the NLC, land was generally looked upon as two dimensions that are in terms of length and breadth and measured in hectares or square meters. With the coming into force of the new amendments, land took on an additional dimension of “depth”, that is land below the surface of the earth. Therefore land that was only disposed of in two dimensions in linear measures, can now be disposed of in cubic measures like cubic meters. This was a significant addition to the NLC to make it keep up with current trends and new needs in land utilisation, system of land tenure and construction technology. In addition to land being a “lot” of land, we can now have a “stratum lot”.

## **3.0 LEGAL PROVISIONS PERTAINING TO UNDERGROUND LAND**

Prior to the amendments to the NLC, the rights of the proprietor of any alienated land was limited to the “exclusive use and enjoyment of only so much of the land below that surface as is reasonably necessary to the lawful use and enjoyment of the land.” There is nothing specific as to how deep the proprietor can use his land. His use of the land is restricted to as deep as he wants to use the land so long as it is “lawful”. Presumably, it should not be inconsistent with the category of land use, implied conditions, and express conditions on the title and in conformity with planning requirements and local authority by-laws. These restrictions are also applicable to the underground land below reserved land.

Nobody bothered about the restrictions above until the present times when the rapid pace of development in Peninsular Malaysia, especially in urban areas such as the Federal Territory of Kuala Lumpur, has created an urgent need to maximise the utilisation of land. In addition to the existing land surface, new developments had to move upwards and even downwards. Development skywards was taken care of by the Strata Titles Act 1985. For development downward, the National Land Code was amended as stated above.

It should also be noted that recent technological developments in the construction industry, materials technology, more reliable geological and geo-technical investigations have made it possible to undertake underground projects. It is becoming safe to construct buildings with spaces far deeper than ever before for such uses like three or four levels of basement car parks.

### **3.1 The Uses of Underground Land Independent Use and Use Unrelated to the Surface Land**

The uses to which underground land can be put into are specified in the NLC. Firstly, “such use as is reasonably necessary to the lawful use and enjoyment of the surface of the alienated land”. The underground land must be used for a purpose that complements the surface use. For example, car parking spaces below a condominium or store below a factory. Secondly, “use which is independent of and unrelated to any lawful use to which

the surface of the alienated land may at any time be put, or any category of land use or any express conditions, to which the alienated land is subject". The underground land can be used in whatever way the proprietor wishes after obtaining the approval of the State Authority. Provisions in the NLC even allow different uses for different parts of the underground land. Thirdly, a mixture of the first and second types of uses described above. This makes the opportunities available for multiple uses of the underground land flexible.

The amendments to the NLC in 1990 have introduced another new and significant feature relating to the land use of the whole or part of the underground land directly and immediately below any alienated land or reserved land. The concept of independent use, which is unrelated to any lawful use to which the surface land is being put or may at any time be put, has far reaching implications. The three main categories of land use under the NLC can be combined. This may sound rather unusual at first, but it is actually an ingenious way of making the best possible uses of the land, on the surface, above the surface and below the surface. The surface land may be used for residential or commercial purposes while the land below may be used for industrial or even agricultural uses. Technological advances have made it possible to have many different types of uses simultaneously above and below one another without disastrous consequences. If there is a need to use the underground land, if it is technically feasible and if safety is assured, then the State Authority will consider favourably applications made under the new provisions of the NLC. This has happen in Kuala Lumpur-with buildings and roads on the surface and mass public transport systems above and under the ground.

#### **4.0 TECHNICAL CONSIDERATIONS**

The technical aspects are the other important consideration in any land development proposals. Indirectly they will shape the development besides involving several professionals like architects, engineers, land surveyors, quantity surveyors etc. in dealing amongst others the engineering, design and environmental aspects. In stratum

development the technical consideration is more important particularly determining the accuracy or exact nature of development as it involves land underground. This factor is crucial as it may affect future dealings when the landowner of the 'land volume' transacts or rent the property or in the determination of property tax or valuation of the underground premises.

#### **4.1 Surveying**

It is beyond the scope of this paper to explain in detail the survey of underground land. Thus this matter will only be dealt with very briefly. Accurate cadastral survey and plans are central to the Torrens system of land administration. The alienation of a stratum of underground land is something new to the cadastral survey system in this country.

The survey of underground land is certainly more complex than the ordinary surface land survey. But it is not beyond the skills of our local land surveyors. The title survey by the land surveyor shall be carried out by first class survey method. The three dimensional characters of the underground stratum lot should be clearly shown in relation to the surface. The volume of the underground land should also be indicated. The alienated underground land that has been surveyed may be conveniently referred to as a 'stratum lot'.

#### **4.2 Engineering**

Similarly it is beyond the scope of this paper to explain in detail the engineering aspects that need to be considered for underground development. Thus this matter will only be dealt with very briefly. It is without doubt that compared to development and construction on the land surface, soil condition, geological factors, earth pressure, soil structure and the bearing capacity need to be investigated in greater detail for underground development. The endeavour involves specialists such as geologists, soil and rock mechanics engineers, public-works designers, mining engineers, contractors, equipment and materials manufacturers, planners, and also lawyers, who aid in the

search for more equitable contractual methods to share the risks of unknown geology and resulting extra costs.

Public safety is an important related area of concern particularly when underground construction is undertaken in a developed city. In the construction of the underground corridor special safety measures need to be used to ensure that vibrations do not affect structures above. If required existing foundations of buildings need to be strengthened before underground tunnelling is done. Vibration analysis studies need to be carried out to confirm that the level of vibration likely to be caused by the underground operations is well within the stringiest international yardstick.

## **5.0 UNDERGROUND DEVELOPMENT IMPLEMENTATION**

It is suggested that the State Authority uses the additional powers under the NLC regarding the disposal of underground land below three types of land, namely state land, alienated land and reserved land so as to facilitate the smooth operations of the development process for underground land in this country. Some of the main powers that the State Authority now has are as follows:

- i. to specify the minimum depth that is to be disposed (and the consequent effect is that the land below such a minimum depth shall remain vested in the State Authority as State Land and such underground land can be disposed of to any person or body;
- ii. to specify the use or uses to which the underground land may be used for and different uses may be specified for different parts of the underground land;
- iii. to specify the express conditions and these shall include conditions to regulate such important matters like the following:
  - a. provisions of protection and support to all adjoining underground land;

- b. provisions of access at one or more places from the underground land to the surface either as proposed by the applicant or by the State Authority itself;
- iv. to specify any other conditions as the State Authority may deem fit on such other matters as follows:
  - a. the construction of any structures in the underground land;
  - b. the protection of the rights of the State Authority that is the extraction of any metal or mineral and removal of rock materials from the underground land still require separate applications and approvals from the State Authority;
  - c. to provide for the removal, relocation or relaying of any drain, sewer, pipe, cable or wire, together with all necessary supports and any works ancillary thereto, at the expense of the proprietor,
- v. to specify any other conditions whatsoever which the State Authority may deem fit. These may include matters such as provisions to provide for the prevention of any protection against fire and flood, lighting inside the stratum, proper ventilation, public access within the stratum, emergency exits etc.
- vi. to formulate clear guidelines for the development of underground land to be adopted by various parties including Department of Land and Mines; Town and Country Planning Department; Land Administrators; Local Authorities, Public Works Department, developers and landowners.
- vi) to make provisions in the State Land Rules to determine the premium rate and quit rent rate according to volume, category of land use and land classification i.e. town or country

All these conditions mentioned above shall be endorsed on the title as required under NLC and shall operate as express conditions. These run with the land and failure to comply with any one or more of such conditions shall be dealt with under the relevant sections of the NLC regarding breach of conditions.

The minimum depth that the State Authority specifies shall not be less than the minimum depth necessary for the land. This means that the State Authority can specify a minimum depth that is reasonable and appropriate for any particular disposal. For example, if the use is for building, the minimum depth shall be determined after taking into consideration the underground land necessary for the foundation and stability of the building and other related uses.

The State Authority has to determine all these terms and conditions to make sure that the underground land can be used for the intended purposes. Conditions for adequate safety features will also be imposed so that the underground land will be very safe and not become a threat to public safety.

For all intents and purposes, the alienated underground land is no different from the alienated surface land. The rights and responsibilities that the proprietor of the surface land has under the NLC shall also apply to the proprietor of the underground land. The right to effect dealings will continue to be enjoyed by the proprietor. Other rights like sub-division, partition, amalgamation and even applications under the Strata Titles Act 1985 are available if it is technologically possible and the State Authority approves it.

## **5.0 CONCLUSION AND FUTURE RESERACH**

For successful implementation of the underground land development co-operation among all parties involved is necessary. The State Authority, the land administrators, property-related professionals, local authorities, proprietors and the private sectors must be able to come up with positive ideas to develop land underground. Underground land has a lot of potential for various forms of developments that can complement development on the



surface of the land. An integrated approach to development using both surface and underground lands need to be worked out. With proper planning and foresight, it can open new opportunities for maximising land use to cater for current and future needs. The National Land Code has been amended and modified to accommodate for futuristic developments. However future research is necessary to determine the technical requirements of underground development in this country.

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