

## **PROPERTY FORMATION AND THREE-DIMENSIONAL PROPERTY UNITS IN SWEDEN**

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### **ABSTRACT**

Legislative work is currently in progress in Sweden aimed at making possible the formation of properties in strata. At the moment, the government is preparing the bill. The proposed law may get legal force not earlier than 2003.

A Commission proposed in 1996 that real property will consist of either a part of the surface of the ground or a three-dimensional space which contains a building or part of a building. Thus it will not be possible to create properties which permanently will consist merely of air or a volume of rock. The subdivision into horizontal strata must be terminated if the building is not erected or is destroyed. Today a Commission investigate the possibility of also introducing strata titles or condominiums in Swedish law.

At the National Land Survey of Sweden, Lantmäteriet, a pre study is currently investigating how to implement the new law within the Real Property Register and the digital Cadastral Index Map.

### **INTRODUCTION**

Legislative work is currently in progress in Sweden aimed at making possible the formation of properties who are three-dimensionally delimited, i.e. have both horizontal and vertical boundaries. At present properties can only be delimited at ground level (SOU 1996:87).

For quite a long time now in urban areas there has been a demand for dividing up ownership in buildings so that different people can own different parts or can own a delimited space below ground, a demand which the existing legislation is unable to meet (Julstad, B. 1994). The question can arise of dividing ownership between one part used for commercial activities – shops, for example – and another part of the same building which is used for housing purposes. The question can also arise of using rock storage caverns for different types of activity, which have no connection with the use of the ground above.

The need for a change in the law is of course due to the demand for three-dimensional property use, coupled with the impossibility of forming property units which are three-dimensionally defined. To a certain extent, though, this demand can be met by other means. For example, the formation of easements and other transfers of rights in land can accommodate a certain demand. Grants of right of user, for a longer or shorter period, are not an attractive proposition in Sweden, the reason being that rights of use always constitute personal property and cannot be separately registered. Nor can rights of user and facilities erected in such an area be mortgaged in the same way as real property.

### **The structure of the essay**

This essay sets out to describe the proposed Swedish legislation and its implications for property formation activities in Sweden, as regards both the consequences of the proposal itself – if realised – and the preparations for its implementation, which are now in progress within the National Land Survey in Sweden.

To facilitate understanding of the deliberations involved in the legislative process and in the practical preparations, a description will first be given of land ownership and its connection with division into property units in Sweden, as well as the procedure for changing property units. An account will also be given of certain rights in land and of the interaction between property subdivision and political control of land use.

### **Title to land and property formation**

All land in Sweden, and in principle all water areas as well, are divided into property units or joint property units. Thus we have a comprehensive division into property units, entered in the Swedish real property register (Cf. Jensen, U. 1997). There are no public unregistered areas. The only areas not included in property subdivision are those consisting of public water areas, which are in the sea and in four of Sweden's largest lakes.

For practical purposes, a Swedish property unit can be described as a certain specified land area (one or several spaces), which has come about through an official decision. In exceptional cases, property units can occur in other forms, but these are of practically no importance today. Swedish law does not include any direct definition of the term “property unit”, but there are provisions within the Land Code<sup>1</sup> (jordabalken) concerning real property and its division into property units. There are also provisions concerning what pertains to a property unit, and there are special provisions on the formation and alteration of property units and on the mandatory existence of a comprehensive real property register. Although there is no formal definition of “property unit”, in the practical context there is no doubt concerning what a property unit is. Any uncertainties may concern the structure and content of a particular property unit, but this has nothing to do with the legal concept.

One important principle regarding land ownership, and also regarding the content of property units, is that land ownership is indivisible. This means that different people cannot own different functions within a property unit. By the same token, a property unit cannot be transferred for a limited period of time. Fixed-term transfers are never equated with real property. There is, however, one exception to the indivisibility principle, in that ownership of a water area can be separated from ownership of the fishing rights in the same area of water. Thus there may be one property unit comprising the fishing rights and another consisting of water in the same area. The Swedish legal system also has a grant of the right of user, which is very similar to real property, namely site leasehold, which is a form of tenure in a property unit owned by a national or local authority. Site leasehold, which has to comprise the entire property unit, can be compared to shared ownership. Although, formally speaking, site leasehold is personal property, to a great extent it is treated like real property. (Cf. Victorin, A. 1997).

Delimited areas of land and water can also constitute what are called joint property units. An area of this kind is shared, in fixed proportions, between several property units. This is made clear by the Real Property Formation Act<sup>2</sup>. An area of land constituting a joint property unit or a property unit's share in the same cannot be separately transferred. In this way its ownership differs from joint ownership of a property unit, with several persons owning a property together.

Landowners in Sweden always own complete property units. An owner may have one or more such units. Transfer of a certain area of a property unit

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<sup>1</sup> See *Swedish Land and Cadastral Legislation (1998)*.

<sup>2</sup> See *Swedish Land and Cadastral Legislation (1998)*.

always has to be followed by a change in the property subdivision, through the creation of a new property unit agreeing with the area transferred or through the addition of a pre-existing property unit. Failing this, the transfer will be invalid; see below. Thus land ownership and property subdivision are directly connected.

The formation and re-formation of property units can only be accomplished by an official decision. Changes of property division are normally made through a cadastral procedure under the Property Formation Act. This is the responsibility of the public cadastral authorities. There are both national and municipal authorities of this kind, and national responsibility is vested in the National Land Survey.

In certain special situations, property subdivision can also be amended under a court order, e.g. as a result of expropriation under the Expropriation Act. In addition to that Act there are a number of enactments regulating procurement of land for different types of space for publicly available infrastructure, such as streets in urban areas. These are expropriation-like by nature and authorise the use or purchase of areas for particular purposes. Purchase changes the division into property units. Land procurement is sometimes possible by alternative procedures, and in many situations, property formation handled by the cadastral authorities provides an alternative to judicial purchase.

The buildings and other facilities erected by a property owner on a property belong to it (fixtures). They cannot be transferred to a new owner except by transferring the entire property unit, buildings included. Forest and other vegetation also belong to the property unit.

The ownership content of a property unit can be expanded by legally attaching various forms of rights in land, rights which accompany the property unit when it changes hands. Certain rights attached to property units can be created both by official decision and by agreement. Others can only be created officially. Just as a property unit becomes entitled to use space in another property unit, the possibility of a property owner exercising his right of ownership can of course be restricted on the property unit where the right is granted. A property unit may also come to be encumbered by rights of user in favour of natural or legal persons. Rights of user in favour of individual persons can only be created by agreement.

Natural resources are normally included in the title to land, but this is not to say that the landowner can freely dispose of them. In many cases their extraction requires a special permit. For example, a property owner may only extract gravel on his property for domestic needs. Extraction for

commercial purposes requires a permit. As regards extraction of natural resources like minerals, the landowner does not have any priority. Draft legislation is contained in SOU 2000:89.

### **The extent of the property unit below and above the ground**

According to Swedish land law real property is “ground”. The ground - and the property - is not restricted to the surface of the ground. Title to land is sometimes described as an inverted cone (Cf. Butt, P. 1988). If title to land were to look like this, it would mean ownership extending a long way out into space and to the centre of the earth. In purely practical terms, asserting ownership that far is very difficult indeed.

Swedish legislation contains no provisions on how far a property unit extends above the ground and below it. One commonly accepted view, however, is that the extent of the property unit is such that no one but the owner is entitled to use the space above or below ground for the construction of different facilities. This means that it is impossible, for example, to construct a tunnel below a property unit without the owner’s consent or after applying a law which contains provisions on the expropriatory grant of the space. In the latter case the property owner is always involved in the transfer and is entitled to compensation for the encroachment. Very often the encroachment can be judged practically negligible, but that is another matter.

Today, as we began by noting, the extent of the property unit cannot be changed upwards or downwards, e.g. by forming one property unit out of the space above ground and another out of the space below ground. Property units, in other words, are not stackable. As a consequence, land and building or different parts of a building constituting real property cannot form different property units. Nor, given the requirement of congruence between property subdivision and land ownership, can separate parts of them be owned by different people. A building on someone else’s land is personal property if it is built and owned by a person other than the property owner. If the property owner erected the building, he forms part of the property unit and cannot be separately transferred: it can only be granted with right of user.

### **Easement, leasehold and other rights attaching to the property units<sup>3</sup>**

Easements are a common method of meeting a property unit’s need of space for a particular purpose in another property unit. An easement can be

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<sup>3</sup> Cf. *Hurndall, A. Ed (1998)*.

formed by cadastral proceeding under the Property Formation Act. This is the usual way, for example, of providing one property unit with a necessary road across another. Easements can also be created under the Land Code through written private agreements between the property units concerned.

Easements in Sweden cannot be granted in favour of a person, nor can an easement be partly or wholly transferred separately from the property unit it belongs to. But there is a right which can be compared with a personal easement, namely a utility easement, which can be used to secure the right to land for utilities of public importance, such as power and telecommunication lines. A right of this kind can only be created through a cadastral proceeding under the Utility Easements Act (*ledningsrättslagen*). The Swedish Utility Easements Act contains provisions on land procurement for commonly available utilities of different kinds. Title to space can be granted both to a property unit and to a person<sup>4</sup>.

When several property units have a collective need for different types of facility which are not publicly provided, these can be established as joint facilities by a cadastral procedure under the Joint Facilities Act (*anläggningslagen*)<sup>5</sup>. At the same time the right of using a certain defined space in one or more property units is granted to the property units included in the joint facility. A joint facility can be established for a wide variety of purposes, ranging from a forest road to load-bearing structural parts of a building in an urban environment where certain parts of a facility are jointly used by several property units. It is usual for play spaces, car parks, garages etc. in terrace housing areas to take the form of joint facilities. In the normal instance, the space utilised for a joint facility is granted through an easement to the participating property units in common. In certain situations the land used can be purchased freehold for the property units which are to participate in the joint facility. The area purchased becomes a joint property unit in which the property units have shares.

A joint facility can be managed by a special association, a joint property management association, which constitutes a legal person. The frames of the association's management activities are defined by statutory provision, articles of association and decisions by meetings. Running costs are paid to the association by each property owner. If a property owner refuses to pay his share of the running costs, the money is directly obtainable by attachment of the property unit. A joint property management association is formed at a meeting conducted by a cadastral authority. Often a meeting of this kind takes place in direct conjunction with the formation of a joint

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<sup>4</sup> See *Swedish Land and Cadastral Legislation (1998)*.

<sup>5</sup> See *Swedish Land and Cadastral Legislation (1998)*.

facility. A joint facility can also be managed through what is termed part-owner management, in which case all activities are subject to complete agreement between the part-owners of the facility. Joint facilities with several part-owners are usually managed by a joint property management association.

As has already been mentioned, it is also possible for right of user to be granted to a person, e.g. different kinds of leaseholds. A right of this kind is always of limited duration. In rural areas its maximum duration is 50 years, and in urban areas with detailed development plans it is 25 years. A right of user can, however, be granted for a person's lifetime. Right of user is regarded as personal property, just as a building or a facility constructed in such an area becomes personal property. If, before the right of user is granted, there is a building on the land belonging to the property unit which makes the grant, that building is included in the grant of right of user, just like the land. The title is unaffected. An area subject to right of user, with or without buildings or other facilities, cannot be mortgaged in the same way as real property. (See Jensen, U. 1997 concerning liens on real property.)

### **Property unit boundaries**

Sweden is classed among countries with a system of fixed boundaries. It is a cardinal principle that all boundaries shall be clearly defined. A boundary resulting from property formation shall be marked on the ground to the necessary extent. New boundaries are subject to a fairly high standard of exactitude. Normally they are carefully marked on the ground at the time of their creation, but there still exist older boundaries which were privately created in the days when this was permissible. The importance of boundary markings is reflected by it being a punishable offence, for example, to remove or shift a boundary marking or to set out what can be taken for a boundary marking.

### **Land policy requirements concerning property subdivision**

The view taken in Sweden is that the division into property units shall reflect the current use of the land. Thus property units cannot be freely constructed, as witness for example the provisions of the Property Formation Act requiring property units to be found suitable for their intended purpose. When a property unit is formed for housing purposes, for example, the construction of a dwelling house must be feasible, there must be access to a road, it must be possible for the home to be supplied with water and sewerage, and so on. By the same token, it is not normally possible for a new housing property to be formed next to an environmentally disruptive activity. It is further stipulated that property

units may not be formed at variance with existing plans or other land-regulating provisions<sup>6</sup>. Shoreline areas in Sweden, for example, are under general protection, so as to make them accessible to the general public. Property units may not be formed in these areas if this would frustrate the purpose of the provisions. The rules of land policy sometimes preclude partial transfers of property units.

The Land Code includes a special provision whereby property formation has to be applied for within a certain time and a transfer will be voided if the property formation cannot be completed.

### **Property formation – Cadastral proceeding**

The cadastral authorities handle business under the enactments which have now been mentioned – the Property Formation Act, the Utility Easements Act and the Facilities Act – through a cadastral procedure. This proceeding is conducted and determined by a cadastral surveyor. The cadastral procedure differs from judicial procedure in that the cadastral surveyor has an independent duty of investigation as regards judging the permissibility of the measure applied for. This includes investigation and co-operation with landowners and the relevant public authorities, the latter partly in order to procure supportive documentation for assessing the compatibility of the intended measure with the land policy requirements applying to the area concerned. Within the framework of the cadastral proceeding, the cadastral surveyor can engage an expert, e.g. to compile supportive data for complicated compensation decisions or to plan a road. Thus decisions are not exclusively based on the submissions made by the parties. The same applies in cases where there are disputes involved, e.g. concerning the proper location of a boundary. See Larsson, G (2000).

Rules on the formation and re-formation of property units are contained in the Property Formation Act. For the formation of new property units there are three distinct procedures: subdivision, partition, and amalgamation. There is only one re-formation procedure, namely reallocation. Reallocation, however, can refer to several different changes. Land can be transferred from one property unit to another. This can involve major reallocations or the moving of a boundary between two property units. Reallocation can also be used as a means of forming joint property units and amending participation in them. It is also a means of forming, amending and cancelling easements. In addition, the Property Formation Act contains provisions on property definition whereby the extent of a property unit can be determined,

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<sup>6</sup> Cf. *Karlbro, T. and Mattsson, H. (1995)* e.g. about planning systems in Sweden.



e.g. as regards the correct course of a boundary or the existence of an easement. (Cf. Millgård, O. 1997).

Cadastral procedure can be used for making certain coercive decisions, e.g. concerning procurement of land for streets within areas subject to a detailed development plan or by entitling one property unit to construct a road across another, against the wishes of the owner of the servient property.

Property formation proceedings are documented in cadastral documents, which normally comprise minutes together with a description of the property formation and a cadastral map. Anyone dissatisfied with the cadastral authority's decision can appeal it in a court of law.

When a cadastral proceeding has acquired force of law, an entry to this effect has to be made in the real property register. A cadastral proceeding is deemed complete when this entry has been made. The real digital property register lists all property units and joint property units in Sweden and is thus comprehensive. It comprises a cadastral part and a land register part (which used to be separate registers). The cadastral part consists of one part with written documentation and the cadastral index map.

### **Three-dimensional property use under current legislation**

As things now stand, title to a three-dimensional space within a property unit can be ensured by creating rights of user in favour of a property unit. Thus it is only spaces supplementing existing property units that can be three-dimensionally delimited. It is quite possible, then, for a housing property to be granted the right, under an easement, of using a space beneath the neighbouring property unit for a garaging facility when necessary. When a space of this kind is jointly needed by several property units, a joint facility can be created. Ownership of a property unit, however, is not always sufficient for a right to be attached to it, because there are fairly close restrictions on the formation of easements or joint facilities (Julstad, B. 1994).

One possible way of dividing up the ownership of a building could be for different parts of it to be owned as personal property. Thus there would be no grant of real property, but a kind of shared ownership could be achieved. But, owing to rules of accession, not even this kind of shared ownership is deemed possible except where distinguishable parts are stacked on top of each other, as for example with portacabins. It is possible, on the other hand, for personal and real property to be mingled in a building, so that within a property unit a person other than the landlord can make an addition to a building belonging to the property unit, thereby giving rise to

split ownership, though not to a three-dimensional partition of the property unit.

### **Proposed introduction of three-dimensional division into property units**

A report proposing the introduction of three-dimensional division into property units was presented to the Government in 1996 by a Commission whose full report was presented in SOU 1996:87. The proposal is currently being processed within the Swedish Ministry of Justice, with the aim of introducing legislation on the subject.

The following description is based on the proposal (hereinafter called “the 3D proposal”) presented in the above mentioned report. The proposal may of course come to be modified before it is finalised. Since a great deal of Swedish property formation legislation is of an outline character, any three-dimensional division into property units in Sweden will be affected by a subsequent interpretation, case law and doctrine.

Under the 3D proposal, it will be possible for property units to be defined three-dimensionally. The rules for the formation of such property units will be incorporated in the existing legislation, in particular the Land Code and the Property Formation Act. This means that three-dimensionally defined property units will normally be formed by cadastral proceeding. They will be subject to land policy requirements, just like any other property units, and rules concerning easements and other property-related rights will apply to them in the usual way.

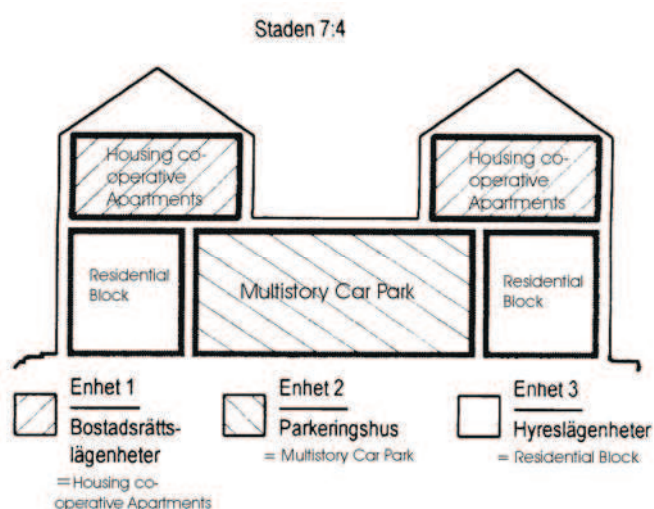
In order for the formation of three-dimensionally divided property units to be possible, amendments will have to be made to Land Code and the Real Property Formation Act. The intention is that only a few special rules will be needed for this type of property unit. Formation and alteration will follow a similar procedure to that applying to other property units.

The 3D proposal refers to three-dimensional property units as facility property units. It is debatable whether the law needs a special designation for this type of property unit, given that there is no special terminology for any other types. In everyday speech, on the other hand, special names are used, and for present purposes three-dimensional property units will be referred to as 3D property units.

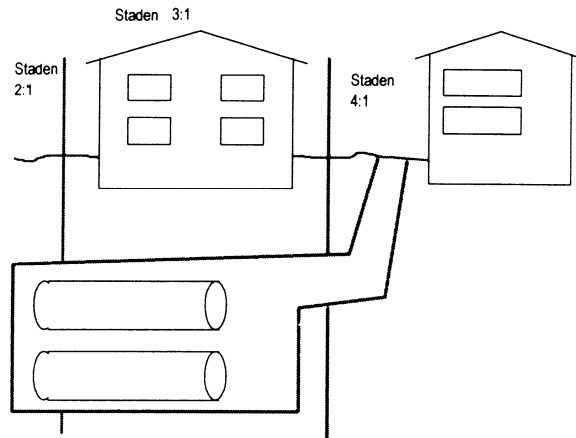
Certain special conditions are proposed concerning the design of these new property units. One stipulation directly voiced in the 3D proposal is that the property units shall be occupied by, or destined to be occupied by, a

building or some other facility. The intention is for property units, in principle, to be filled with a building or some other facility and not to consist merely of air or a volume of rock. Thus it will not be possible to create “air space parcels”, as happens, for example, in British Columbia in Canada (Cf. Gerremo, J. and Hansson, J. 1998).

A 3D property unit need not consist of an entire building or facility. It can also comprise part of a building or of some other facility. This means that a building can be divided up into different, stackable property units, always provided that these units, like other property units, are judged suitable for their purpose. An express provision is proposed, however, to the effect that a 3D property unit must be assured of access to the ground surface. This access can be secured through the creation of easements when the property unit is formed or, when several property units are to have a common connection, through the formation of a joint facility; see above. Even without this express permission, it would have been necessary for the land policy requirements of suitability to be satisfied. A property unit consisting, for example, of a rock cavern with no access to the ground surface or the upper part of a building with no access to a lift or staircase is not a suitable property unit.



See SOU 1996:87 p. 135. A building consisting of three 3D-properties – strata – used for different purposes. (Two of the properties consist of two spaces.)



See SOU 1996:87 p. 136. A space below several real properties, which has no connection with the “ground properties” except access to the surface.

An important limitation is proposed on the possibility of forming three-dimensional property units. A property unit may not be a space consisting of only one unit for housing purposes. Thus the proposed legislation does not afford scope for the creation of strata titles or condominiums (Cf Hurndall, A. Ed. 1998, Chapter 18 Sweden). The political view expressed when the 3D proposal was drafted was that a form of grant implying owner units should not be permitted. Today, however, an investigation is in progress concerning the possibility of also introducing such units in Sweden, and a report is to be submitted to the Government at the end of 2001.

The provision in the 3D proposal forbidding a property unit to be formed from a dwelling unit does not mean, however, that homes cannot be included in three-dimensional division into property units. Part of a building containing several dwelling units may constitute a 3D property unit. A building can, for example, be divided up in such a way that an underlying part with commercial premises constitutes one property unit, the part above it, consisting of offices, constitutes a second property unit and a third part over the office property consists of a property unit containing dwelling units<sup>7</sup>.

The fact that a 3D property unit must comprise a building or other facility or a part thereof does not mean that the property unit has to be developed when formed. Transitionally, property units can be permitted which consist of air space or unused spaces below ground. But property units of this kind will not be allowed to be formed “any old how”. To make fairly sure that a planned building will really be constructed, a building permit must have been granted. Furthermore, division into property units must conform to

<sup>7</sup> For Housing Law in Sweden see *Lilleholt, K. Ed.*

the building permit documents. Obtaining building permission, however, is no guarantee of the building development taking place or of the property units formed acquiring a tangible content. The 3D proposal therefore includes rules making it possible for three-dimensional property units which have not materialised to be deleted; see below.

It is proposed that 3D property units should not be bound by the basic division into property units in the sense of a newly formed 3D property unit always having to come within the volume of the original property unit. It shall be possible to form property units which transcend the boundaries of the original property unit. Thus it will be possible for property units to be created by three-dimensional spaces from several different property units together forming a new property unit. It will be possible for “trans-boundary” property units of this kind to be formed below ground, e.g. by a rock storage cabin to be constructed beneath several different property units or when one storey of a building is to be added to the building on the neighbouring property unit. The Swedish proposal resembles the Australian possibility of forming stratum parcels. This differs, for example, from the air space parcels of British Columbia, which only can be formed within a traditionally, two-dimensionally defined property unit.

One question which has not been settled in detail is how joint ownership or use of different parts of facilities within a building is to proceed in different situations. This is being left for examination in the cadastral procedure whereby the 3D property units are formed. As regards access to ground level (see above), no indication has been given of how this is to be secured, only that it shall be guaranteed.

One reason for refraining from detailed control is that, with the structure permitted by freedom from horizontal subdivision, conditions can vary immensely and so, consequently, can the most appropriate solution. Another significant reason is that Sweden already has an effective regulatory structure concerning co-operation between different property units, and this can also be applied to the new 3D units. It is above all the form of co-operation described above, namely a joint facility under Joint Facility Act, coupled with a joint property management association, that is intended to apply. When a building consists of several property units, stairwells, lifts and other communal spaces can be established as joint facilities. Load-bearing structural parts, roofs and suchlike, can also be included in a joint facility of this kind. The various property units within the building participate, helping to cover the cost both of the construction of the facility and of running it. For the apportionment of the costs, property units are allotted one participatory share for construction and one for operation.

One particular question is who is to own and manage the area of land on which a building divided into 3D property units is located. Here again, no detailed provision is proposed. Various alternatives are conceivable. One of them is for an original developer to remain as the owner of the property unit consisting of the land, the developer becomes a passive owner. The land is then granted for the use of the joint facility which is also established for other common spaces. One practical solution may be for “the land property unit” then to be acquired by the joint property association which manages the joint facility. As a legal person, the association can be a landowner, just like any other person. Another possibility is for a property owner to own the land and parts of the building where other parts have been divided into separate property units. The part which the first mentioned owner is not to use privately will be included in the grant for a joint facility. Where only two property units are to co-operate, the building can be divided in such a way that load-bearing structural parts are included in each property unit and access to necessary spaces for entering and leaving the building is assured by easements. Even when there are only a few property owners, however, the best solution may be to make a joint facility out of the parts on which the 3D property units are jointly dependent.

An alternative way of resolving ownership and management is by creating a joint property unit of the land on which the divided building stands. The 3D property units become part-owners of the joint property units, which is delimited in such a way that common spaces will be included in it. By this method one obtains a direct link between property ownership and ownership of common parts because the property unit and its share in the joint property unit cannot be separately conveyed. One drawback to this procedure is that, unless a joint facility is established at the same time, only part ownership in the joint property unit will be regulated. There is no facility for deciding cost apportionment.

Joint ownership of land and building parts by the different owners of 3D property units in a building is not an appropriate solution in Sweden, partly because there is no possibility of linking ownership of a jointly owned property unit directly to ownership of another property unit, in such a way that they will be inseparably united and cannot be separately conveyed.

The purpose of the proposal, as explained earlier, is for 3D property units to consist of a whole or part of a building or other facility. In the event of property formation taking place on the strength of a building permit before the building has been erected, however, one cannot exclude the possibility of the building thus planned never materialising. In such a situation, “air parcels” would be created unless special rules were introduced for dealing with the situation of undeveloped 3D property units. Rules of this kind are

proposed for the eventuality of a building or facility not being erected or a facility being destroyed, e.g. by fire. The purpose of these rules is to eliminate or re-form unutilised three-dimensional property units.

The proposal covers the situation of not all property units in a destroyed building wanting to reconstruct their parts and also the situation of a building never having been constructed. For the first situation, special compulsory purchase provisions are proposed, whereby a property owner wishing to reconstruct the building, which has been destroyed will be entitled to acquire freehold the property unit or units whose owners are unwilling to re-erect their part. In connection with this kind of compulsory purchase, the division into property units will be changed in such a way that the purchased parts will be transferred to the property unit owned by the purchaser. In the event of several property owners within the destroyed facility wishing to purchase the same property unit, it is proposed that the property owner with the most valuable unit be given precedence. In the event of no building having been erected, rules are proposed for reversion to the property unit, which the ground surface encompasses. In this way an ordinary property unit will be re-created whose boundaries are defined in two dimensions only.

Preparations for the introduction of three-dimensional property division in Sweden

Within the National Land Survey, experimental work and development is in progress to prepare for the introduction of three-dimensional property formation.

Fictitious cadastral proceedings referring to actual construction projects are being carried out to see whether implementation of the statutory changes contemplated will work satisfactorily, and to compile supportive data for future implementing recommendations. Preparations are also under way for the entry of three-dimensional property units in the Swedish real property register. This means entry both in a written register and on a cadastral index map.

As property formation proceedings are complete when the cadastral proceeding has been entered in the real property register. This, of course, will also apply concerning the formation or re-formation of 3D property units. Accordingly, these are to be entered in the “written part” of the real property register and on the cadastral index map.

The report on three-dimensional division into property units does not deal specifically with the way in which 3D property units are to be documented

in cadastral documents, how they are to be registered or how they are to be plotted on the cadastral index map. A number of questions thus remain to be tackled. Are 3D property units to be shown on the present-day two-dimensional map, or is a three-dimensional cadastral index map to be created? The same applies concerning presentation on the cadastral map.

Whatever the design of the cadastral map, the delimitation of the property units within a building or below ground will have to be very clearly documented. One possibility is for the building drawings to provide the documentation, either on their own or together with other accounting. Probably a verbal description would also be needed. Another possibility is to show co-ordinates for the delimitation of 3D property units. This will call for measurement of the buildings erected. Thus several different questions remain to be decided on the subject of future implementation.

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