Property Valuation and Taxation in The Netherlands

A case study conducted by the Netherlands Council for Real Estate Assessment

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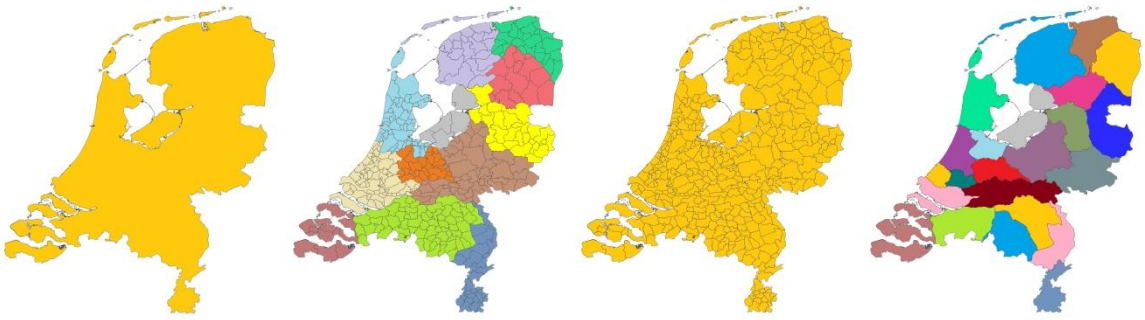
1. Background

The Netherlands recognizes a central, regional (provices) and local government. The central government consists of the administration, ministries and advisory committees. The decentralized government consists of 12 provinces, 393 municipalities and 24 polderboards. Both municipalities and polderboards are a type of local government that are spread over the entire contry. The figure below shows the provinces, municipalities and polderboards.



The Netherlands | 12 provinces | 393 municipalities | 24 polderboards

Both the central, regional and the local government have the authority to levy taxes and in doing so the central and both local governments make use, among other things, of the value of real estate properties for these taxes. Up until 1995 the various authorities were individually responsible for the assessment of the real estate property values for their taxes. These various authorities applied several methods and definitions.

On January 1st, 1995, the Special Act for Real Estate Assessment (in Dutch: Wet WOZ) was initiated. This law had the purpose to establish legislation for the definition and documentation of real estate property values for various taxes. The Special Act for Real Estate Assessment aims to realize the following purposes: efficiency, clarity, quality and uniformity. Initially the Special Act for Real Estate Assessment determined that all municipalities had to assess the value of all real estate properties every four years and that it was mandatory for other government organizations to use these assessed values for their taxation purposes. As of 2007 an annual appraisal has been introduced. This annual appraisal and assessment is done with the value reference date set one year prior to the year of use. The Council for Real Estate Assessment is an independent government organization that supervises and monitors the quality of real estate property assessment.

In 2006 it was decided to make the WOZ-registration (Registration of assessed values) part of the System of Base Registers that is being developed within the Dutch government. In doing so the municipal registration of assessed values became a part of the public sector information system, which now consists of 11 base registrations that are connected with each other. This decision also had consequences for the work procedures underlying the maintenance of public sector information. These work procedures are increasingly being connected with one another. There are, for example, base registers available about the cadastral situation (ownership), the registered persons (inhabitants) and about businesses. These registers have been there traditionally, but have been

modernized in recent years and have been implemented in the System of Base Registers as mentioned above, of which the registration of assessed values is an integral part.

Finally, a digital infrastructure has been developed in The Netherlands of which central and local governments are obliged to make use when designing their digital service towards citizens and businesses. Government organizations are using this digital infrastructure to improve their data exchange and to offer their digital services in a reliable and safe manner. For instance with this digital infrastructure each inhabitant in the Netherlands has a safe digital letterbox to receive (confidential) letters of any government agency.

2. Financial policy and public finances

In The Netherlands approximately 15.5 billion euro is being levied in real estate taxes on an annual basis, of which 13.5 billion euro must be considered periodical (annual) taxes that are being levied on the owners and users of real estate properties. The other 2 billion euro is being levied sporadically when triggered by a particular event, such as the sale of a property. In the table below the amounts are beings shown per "type" of tax. A distinction has been made between periodic and sporadic taxes and between central and local governments.

	Periodic (billion euro's per year)	**Sporadic (billion euro's per year)**
Central government	**€ 4.5 (total)** *€ 2.5 (home owners forfeit)* *€ 1.0 (capital return tax)* *€ 1.0 (landlord charge*)	**€ 2.0 (total)** *€ 1.0 (transfer tax)* *€ 1.0 (estate/inheritance tax)*
Local governments	**€ 10.0 (total)** *€ 3.5 (real estate property tax)* *€ 4.5 (other municipal taxes/ fees)* *€ 0.8 (water system charges built)* *€ 1.2 (water treatment tax)*	Not applicable
Total	**€ 14.5**	**€ 2.0**

Based on the table above, we can conclude the following:

- The total tax revenue of € 16.5 billion, based on real estate property, is approximately 2.8% of the gross domestic product (bbp) in The Netherlands (the bbp is approximately € 600 billion);
- The federal government receives approximately € 6.5 billion in revenue based on real estate property taxes. In relation to the approximately € 130 billion in total tax revenue, this is a percentage of about 5%;
- For municipalities (part of the local government) the real estate property tax revenue is approximately € 3.5 billion (figures 2014). In relation to the total return of municipalities of approximately € 43 billion (in 2014) this is about 8% (municipalities receive the biggest part of their financial means from the federal government). The non-discretionary fees of about € 4.5 billion are 10% of the total return of municipalities;
- For polderboards (part of the local government) the revenue of the water system charges built is approximately € 0.8 billion. On total revenue of € 2.7 billion, 30% is disposable for the water quantity responsibilities and € 1.2 billion for waste water treatment responsibilities.

As a result of the availability of an assessed value that is available for all real estate properties on an annual basis, the number of taxes based on real estate property in The Netherlands has increased in the last several years. The most important example being the newly introduced landlord charge, with revenue of approximately € 1 billion (in 2014).

Because of reliable registrations of real estate property as well as of tax payers are well presented, evasion of taxes based on real estate property does not or hardly ever occur. Tax evasion of taxes

levied on real estate property is more difficult than in case of turnover and income taxes, because there is a reliable cadastral ownership registration.

3. Property taxes in The Netherlands

In this chapter we describe the most important taxes in The Netherlands that are based on real estate property and are being levied by the various administrations. Since for most of these taxes the taxable amount is the assessed value of the real estate property we will first explain how this value is being assessed.

3.1 The WOZ-value

The assessed value (WOZ-value) is being determined by municipalities on an annual basis. Municipalities supply the assessment data to other government organizations who are obliged to use this information. This has been documented in a particular law, the Special Act for Real Estate Assessment (in Dutch: Wet Waardering Onroerende zaken or Wet WOZ). In this law it is specified that an independent organization must supervise and monitor the quality of the valuation. This organization is the Netherlands Council for Real Estate Assessment (in Dutch: Waarderingskamer).

The WOZ-value is the estimation of the market value of the real estate property (land and buildings) on the value reference date January 1st prior to the fiscal year. There is an annual valuation and the newly assessed values are being announced on an assessment notice for the municipal real estate property tax. This means that before the value is officially final (an objection and appeal procedure is still possible at that moment) it is already being used for taxation purposes. If the assessed value changes because of this appeal, the assessment notice for all the real estate property taxes will be adjusted accordingly. Objects, for which no market exists, have their WOZ-value assessed on basis of the depreciated replacement costs.

Municipalities organize the execution of the Special Act for Real Estate Assessment often in mutual shared service centers, but they also have the freedom to contract private businesses. There are no formal requirements for training and qualification of the assessment officers who are responsible for the valuation process. Municipalities are responsible for the execution of the Special Act for Real Estate Assessment and with that also for sufficiently trained and qualified personnel. There are, however, substantive guidelines for training and qualification requirements.

3.2 Home owners forfeit and capital return tax

Tax:	The **home owners forfeit** and the **capital return tax** are real estate property taxes on residential properties. They are parts of the income tax and wealth tax (fixed rentable value and investment yield tax)
Levied by:	This tax is being levied by the Dutch Tax and Customs Administration.
Tax payers:	Private home owners are subject to tax.
Taxable amount:	A percentage of the assessed value (WOZ-value) is being added to the income of the home owner. The tax payer pays income tax over this fictional income, based on the tax rate for the income tax. A special point of attention is that this addendum is being netted with the deduction of the mortgage interest for the private residence. The Netherlands knows a wide possibility to deduct paid mortgage interest from the income tax. If one does no longer make use of this deduction of mortgage interest, one does not need to make the addendum for the fixed rentable value and one does not pay this real estate property tax. A percentage of the WOZ-value of a residential property not

	permanently inhabited by the owner (thus a house rented out or a vacation home) is being added to the assets which are subject to an annual wealth tax.
Tax rate determined by:	The tax rate is being determined by law. The system for annual adjustments of the tax rates has been legislated as well.
Highest tax rate:	A private home owner must add 0.6% of the WOZ-value of his home to his income and pays, depending on the height of his total income, a tax rate of, for example, 42% over that amount.
Exemptions:	There are no exemptions.
Time table:	At the end of a fiscal year the tax payer receives a (digital) pre-completed tax return form. The tax payer needs to file this before May 1st. Based on this filed return the total income tax of the previous year will be 'settled'. Often the tax payer receives a (small) amount in return, because the provisional withholding income tax during the fiscal year was higher than the ultimate mandatory tax.
Revenue:	Revenue from this tax is a non-restricted fund for the national government.
Complaint/appeal:	Tax payers can file a complaint to the Tax and Customs Administration concerning the issued tax bill. After rejection of the complaint, appeal is possible at three authorities. The first phase is to the District Court, subsequently to the Court of Appeal and ultimately there is appeal in cassation to the Supreme Court.
Responsibility:	Administration of the income tax of which this tax is an integral part is being done by the National Tax and Customs Administration. Tax payers are obligated to file a return; however the Tax and Customs Administration takes care of a pre-completion of this tax return form. She makes use of the various available base registers, such as the Base Register Cadastre and the Register of Persons (Inhabitants). They receive the WOZ-values from the municipalities. The tax payer doesn't need to do much more than to indicate whether he agrees or not with the tax return form as pre-completed by the Tax and Customs Administration.

3.3 Landlord charge

Tax:	**Landlord charge**
Levied by:	This tax is being levied by the national Tax and Custom Administration.
Tax payers:	Owners (often non-natural persons, namely housing cooperations for renting out social housing or investors) of residential properties who own ten or more homes are subject to tax.
Taxable amount:	A tax bill is being issued based on the assessed value (WOZ-value).
Tax rate determined by:	The tax rate is being determined by law.
Highest tax rate:	The tax rate in 2014 was 0.381% of the WOZ-value of the rented property.
Exemptions:	There are no exemptions.
Time table:	The aforementioned owners must pay the landlord charge annually before October 1st.
Revenue:	Revenue of this tax is primarily intended to supply tenants of these residential homes, with a low income, an allowance so they can pay the rent.

Complaint/appeal:	Tax payers can file a complaint to the Tax and Custom Administration concerning the issued tax bill. After rejection of the complaint, appeal is possible at three authorities. The first phase is to the District Court, subsequently to the Court of Appeal and ultimately there is appeal in cassation to the Supreme Court.
Responsibility:	Execution of this tax is being done by the Tax and Customs Administration. This organization is also responsible for the tax administration. She makes use of the various available base registers, such as the Base Register Cadastre and the Register of Personal Data.

3.4 Municipal real Estate Property Tax

Tax:	**Real Estate Property Tax (in Dutch: OZB)**
Levied by:	This tax is being levied and collected by municipalities. Some municipalities accommodate this in shared service centers.
Tax payers:	For residential properties solely the owner pays taxes against an (often) lower tax rate than used for non-residential properties. For non-residential properties both the owner and the occupant pay tax (hence, an owner-occupant pays twice) and well against a higher tax rate. Each owner (and in case of non-residential properties also the occupant) of a real estate property receives an assessment notification. If the tax payer is a natural person and his or her income is low, he or she can be eligible for remission of the taxes to be paid (a tax waiver).
Taxable amount:	The WOZ-value is the taxable amount for this tax
Tax rate determined by:	The tax rate is being determined by the local council, the rates vary per municipality.
Highest tax rate:	Tax rates for owners of residential properties are between 0.1 and 0,2% of the WOZ-value. For non-residential properties tax rates can be twice that, besides the tax rate for the occupant. For an owner-occupant of a non-residential property the total tax rate for real estate property tax can add up to 0.6% of the WOZ-value.
Exemptions:	Only a small part of real estate property is exempt. The most important exemptions are: public roads, agricultural land (agricultural buildings are being taxed), nature areas, churches and the real estate property of international organizations.
Time table:	At the beginning of the year (January or February) the tax payer receives an assessment notification (document per mail, but increasingly in digital format). The tax payer often has the possibility to pay the bill in direct debit installments. The tax payer can examine the valuation report of his own real estate property (through internet) in order to justify the accuracy of the assessment. Legislation has been made, but is not functioning yet, whereby tax payers can examine the WOZ-values of other residential properties as well (public availability).
Revenue:	Revenue is entirely for the municipality and can be used freely (within the municipal budget).
Complaint/appeal:	Tax payers can file a complaint to the municipality.This can be a complaint against the assessed value, or against the tax liability or the exemptions. The procedures for complaints against the assessed value (based on the Act for Real Estate Assessment) and against the tax matters (based on the Municipality Act) are the same. After rejection of

	the complaint, appeal is possible at three authorities. The first phase is to the District Court, subsequently to the Court of Appeal and ultimately there is appeal in cassation to the Supreme Court. There is a tendency to avoid formal complaints and appeals by providing the tax payers the opportunity to have informal contact with the assessment officer/tax officer after receiving the newly assessed value or by involving the tax payer, in one way or another, in the realization of the WOZ-value.
Responsibility:	The municipality is fully responsible for the tax administration. She therefore makes use of various available base registers, such as the Base Register Cadastre and the Register of Persons (Inhabitants). For changes in real estate objects and construction/demolition the municipality makes sure the data used for the appraisal and assessment are in accordance with the registration of building permits and the base registration of addresses and buildings. There is no "obligation to file" for tax payers. However, tax payers are obligated to share information when the municipality asks for it. The tax administration in general is accurate, partly because of periodic comparison with the cadastral base registration and the base registration addresses and buildings and the "annual inspection" by tax payers.

3.5 Other municipal taxes/fees based on real estate property

Tax:	The municipal council can decide to implement **other municipal taxes/fees based on real estate property**. Therefore the council can determine the tax base and taxable amount, for instance for the connection of real estate property to the sewer system and for household waste collection.
Levied by:	These fees are being levied and collected by municipalities. Municipalities can accommodate this in shared service centers.
Tax payers:	The owners or occupants of real estate properties are, in most cases, the tax payers. If the tax payer is a natural person and his or her income is low, he or she can be eligible for remission of the taxes to be paid.
Taxable amount:	The taxable amounts vary per municipality. For example a fixed amount per real estate property, a rate based on the value, a rate based on water usage or a rate based on the quantity of waste produced.
Tax rate determined by:	The tax rate is being determined by the local council, the rates vary per municipality.
Highest tax rate:	The tax bases and rates vary per municipality.
Exemptions:	There are no exemptions.
Time table:	At the beginning of the year (January or February) the tax payer receives an assessment notification (document per mail, but increasingly in digital format). On a single assessment notice the WOZ-values are being announced, the real estate tax bill is being issued and the tax bills for waste collection and sewer system fees are being issued.
Revenue:	Revenue can exclusively be used for the covering of the costs of maintaining the sewer system or the collection of waste to be processed.
Complaint/appeal:	Tax payers can file a complaint to the municipality. After rejection of the complaint, appeal is possible at three authorities. The first phase is to the District Court, subsequently to the Court of Appeal and ultimately

	there is appeal in cassation to the Supreme Court.
Responsibility:	The municipality is fully responsible for the tax administration. She therefore makes use of various available base registers, such as the Base Register Cadastre and the Register of Person (Inhabitants).

3.6 Water system charges built

Tax:	**Water system charges built**
Levied by:	This tax is being levied by the polderboards. Polderboards can accommodate this in shared service centers (also in cooperation with the municipality).
Tax payers:	Each owner of a real estate property receives an assessment notification. If the tax payer is a natural person and his or her income is low, he or she can be eligible for remission of the taxes to be paid.
Taxable amount:	The tax is based on the assessed value (WOZ-value) which is being determined by the municipality on an annual basis. For public roads, agricultural land and nature areas the tax is being based on the cadastral area of a property.
Tax rate determined by:	The general council of the polderboard determines the tax rate on an annual basis.
Highest tax rate:	For all developed real estate properties the owner pays taxes based on a fixed tax rate (percentage of the WOZ-value). The rates vary per polderboard from 0.05% to 0.1% of the WOZ-value. For undeveloped objects the owner pays taxes based on a rate per surface area, keeping in mind that there are various rates for nature areas, public roads and other undeveloped objects like agricultural land.
Exemptions:	There is only an exemption for churches.
Time table:	At the beginning of the year (January or February) the tax payer receives an assessment notification (document per mail, but increasingly in digital format). The tax payer often has the possibility to pay the bill in direct debit installments.
Revenue:	Revenue is entirely for the polderboard and is being used to cover the expenses for water quantity management (monitoring ground water level, water drainage, monitoring dikes etc…..)
Complaint/appeal:	Tax payers can file a complaint to the municipality about the height of the assessed value (WOZ-value). At the polderboard the tax payer can only file a complaint concerning the other aspects of the assessment notification (for example if one is, or is not, the right tax payer). After rejection of the complaint, appeal is possible at three authorities. The first phase is to the District Court, subsequently to the Court of Appeal and ultimately there is appeal in cassation to the Supreme Court.
Responsibility:	Polderboards are fully responsible for the levying and collection of this tax as well as for the administration, but they receive the WOZ-values, which they are obligated to use, through the municipalities. They receive the surface areas of undeveloped objects through the Cadastre. Polderboards also make use of various available base registers, such as the Base Register Cadastre and the Register of Persons (Inabitants).

3.7 Water treatment tax

Tax:	Water treatment tax
Levied by:	This tax is being levied by the polderboards. Polderboards can accommodate this in shared service centers (also in cooperation with the municipality).
Tax payers:	The user (occupant) of the real estate property is subject to tax.
Taxable amount:	Often a standard tax rate per residence, with a differentiation between single person households and others.
Tax rate determined by:	The general council of the polderboard determines the tax rate on an annual basis.
Highest tax rate:	The rates vary per polderboard.
Exemptions:	There are no exemptions.
Time table:	At the beginning of the year (January or February) the tax payer receives an assessment notification (document per mail, but increasingly in digital format). The tax payer often has the possibility to pay the bill in direct debit installments.
Revenue:	Revenue is entirely for the polderboard and should be used to cover the expenses for (sewage) water treatment.
Complaint/appeal:	At the polderboard the tax payer can file a complaint concerning the aspects of the assessment notification (for example if one is, or is not, the right tax payer or if there is a single person household). After rejection of the complaint, appeal is possible at three authorities. The first phase is to the District Court, subsequently to the Court of Appeal and ultimately there is appeal in cassation to the Supreme Court.
Responsibility:	Polderboards are fully responsible for the levying and collection of this tax. Polderboards can accommodate this in shared service centers (also in cooperation with the municipality).

3.8 Transfer tax

Tax:	Transfer tax
Levied by:	This tax is being levied by the Tax and Customs Administration.
Tax payers:	In case of acquisition of a real estate property, the new owner is subject to transfer tax.
Taxable amount:	In essence, the transfer tax is being based on the paid sales price. If, however, the paid sales price is in no realistic proportion to the real market value of the real estate property, the transfer tax can be based on the assessment of the market value.
Tax rate determined by:	The tax rate is being decided by law.
Highest tax rate:	The tax rate is 6%, but for residential properties this rate has been decreased to 2%, so as to stimulate the real estate market.
Exemptions:	There are no exemptions.
Time table:	The new owner is subject to transfer tax at the moment the property is being transferred.
Revenue:	Revenue from this tax is a non-restricted fund for the federal government.
Complaint/appeal:	Tax payers can file a complaint to the Tax and Customs Administration concerning the issued tax bill. After rejection of the complaint, appeal is possible at three authorities. The first phase is to the District Court,

	subsequently to the Court of Appeal and ultimately there is appeal in cassation to the Supreme Court.
Responsibility:	Execution of the transfer tax falls under the responsibility of the Tax and Customs Administration; however the notary has an important role in the execution of this tax. The legal transfer of the sale of a real estate property must happen at the notary. The notary monitors a good transition of the payment from buyer to seller as well as the filing and payment of the transfer tax. The notary also takes care of the registration of the transfer in the Cadastre.

3.9 Estate / inheritance tax

Tax:	**Estate / inheritance tax**
Levied by:	This tax is being levied by the Tax and Customs Administration.
Tax payers:	Heirs are subject to tax.
Taxable amount:	Upon death all real estate properties are being included, *ad valorem*, in the inheritance tax. In case of residential properties it is mandatory to make use of the assessed value (WOZ-value). In case of non-residential properties the value for the inheritance tax can be individually assessed. If a residential property is part of an inheritance, the WOZ value of this property will be added to the total value of the inheritance. This is the WOZ-value that is valid at the time of death or the WOZ-value that will be valid in the year after the death (the choice is for the tax payer).
Tax rate determined by:	The tax rate is being determined by law.
Highest tax rate:	The tax rate depends on the rank of relationship and varies from 10% for family in the first degree to 40% for distant family and non-family members.
Exemptions:	There are no exemptions.
Time table:	After death the Tax and Customs Administration asks the heirs to file for the inheritance tax.
Revenue:	Revenue from this tax is a non-restricted fund for the federal government.
Complaint/appeal:	Tax payers can file a complaint to the Tax and Customs Administration concerning the issued tax bill. After rejection of the complaint, appeal is possible at three authorities. The first phase is to the District Court, subsequently to the Court of Appeal and ultimately there is appeal in cassation to the Supreme Court.
Responsibility:	The Tax and Customs Administration is responsible for the tax administration. She officially relies on the tax return form of the tax payer.

4. Assessment of real estate properties

In this chapter we will describe the assessment of the WOZ-value which is being used in The Netherlands by various administrations for various taxes. The current development is that existing and new forms of real estate property taxes are increasingly being connected to the WOZ-value. Besides that, the WOZ-value is being used for other purposes, such as the determining of a maximum fair rent for social housing and by the decision to take out a mortgage loan.

4.1 Value definitions

The WOZ-value is primarily the market value of a real estate property on a given date, the value reference date, whereby is being referred to the IVS definition of the term market value.

The market value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and wwithout compulsion.

The WOZ-value always determines the market value based on the assumption (assessment instruction) that all rights on the real estate property belong to one party. This means, for example, that in case of assessment it is not taken into account that the tax payer is lease holder instead of owner or that the real estate property is being rented out.

For non-residential properties that have no market, the Special Act for Real Estate Assessment determines that the corrected replacement costs must be issued as WOZ-value. The depreciated replacement costs reflect the value for the current owner in a situation where there is no potential buyer who is willing to purchase this object (on the market).

The market value is being based on the “highest and best use”, appropriate in the context of the formal possibility as described in the zoning plan. Furthermore the actual state of the real estate property on the value reference date is decisive for the assessment. However, when after the value reference date and before the year in which the WOZ-value will be validated the state of the property changes drastically (new construction, demolition, renovation, etc.) the actual state on January 1st of the year in which the WOZ-value will be validated shall be considered normative.

For the measuring of the dimensions of real estate objects, municipalities still have the choice between the measuring of useable area or gross volume of the buildings. The municipality must (per object category) use a single system. Municipalities are increasingly using the usable floor area of the buildings. The usable floor area is also being listed in the system of base registers (base register of buildings). The usable floor area as well as the gross volume has been defined in a formal norm, the NEN 2580. For the measuring of residential properties this norm has been translated into a simple measuring procedure (see attachment 1) for the measuring of usable floor area of residential properties and for the measuring of gross volume of residential properties. This measuring procedure is also being prescribed by real estate agencies and organizations for their members to be used.

In general, three methods within the systems of mass appraisal are being used for the valuation process. The sales comparison approach is being used (mandatory) for the assessment of residential properties. For a non-residential property the value needs to be assessed based on the market value and on the depreciated replacement costs. The highest value needs to be applied. Usually it is known in advance for which category (unsaleble) non-residential properties the depreciated replacement costs are applicable. The market value for an non-residential property can be assessed in three different ways, namely: through the sales comparison approach, the income approach (capitalization of the rental value) and the discounted-cash-flow method.

4.2 The Netherlands Council for Real Estate Assessment

The Netherlands Council for Real Estate Assessment is an independent organization that supervises and monitors valuation in the context of the Special Act for Real Estate Assessment. If municipalities do not meet the minimum quality standards as set by the organization, it is initially the municipal council which will be held accountable. If the necessary improvements are not being realized, the Minister of Finance may, in extreme cases, decide to have this Act executed by another party instead of by the municipality.

In the coming period 2015 - 2020 the Netherlands Council for Real Estate Assessment wants to improve the trust in the execution of the Special Act for Real Estate Assessment by:

1. ensuring that there is an adequate WOZ-process in which quality, continuity and efficiency are continually being adapted to societal expectations;
2. encouraging all municipalities to have a WOZ-process by 2020 in which stakeholders (taxpayers) are able to send out signals, in an easy accessible way, to the municipalities about the accuracy of the assessments and about the accuracy of all underlying data;
3. ensuring that base registration of assessed values becomes embedded in the system of base registrations and that accuracy, completeness and timeliness of links with all “connected’ base registers is secured;
4. achieving the goal that from all municipal employees who are contributing to the execution of the Special Act for Real Estate Assessment can be verified that they have the expertise needed to do their part in the work process;
5. achieving the goal that all systems being used for mass appraisal in the execution of the Special Act for Real Estate Assessment will meet the quality standards defined for that purpose.

5. The valuation infrastructure

The Netherlands Council for Real Estate Assessment formulates quality standards and guidelines to which the assessment process must comply. These requirements relate to the products (the valuations), the underlying work procedures and to the internal management of these work procedures. In addition the Netherlands Council for Real Estate Assessment reviews whether municipalities, the organizations who are responsible for the assessments, meet these quality standards and guidelines.

The Netherlands has a system for certification of appraisers, in which certified appraisers are listed in a registry. Although there is no legal requirement for market valuation (for example for the benefit of sales value, rental value or book value) to be carried out by a certified appraiser, this is the rule. For listed appraisers there are requirements for permanent education and a code of ethics applies.

There are no formal requirements for training and qualification of the assessment officers who are responsible for the valuation process. Municipalities are responsible for the implementation of the Special Act for Real Estate Assessment and with that also for sufficiently trained and qualified personnel. There are, however, substantive guidelines for training and qualification requirements. These substantive guidelines have been developed by the Netherlands Council for Real Estate Assessment. Appraisers who meet these guidelines can be listed in a national register that is linked to the registry for "market appraisers."

Given the specialized character of the mass appraisal process an important part of the work is not done by "regular appraisers" but by specialists in the field of defining and optimizing models (statistics and econometrics) and specialists in the field of accurate data management.

For the measuring of the dimensions of real estate objects, municipalities still have the choice between the measuring of usable floor area or gross volume. The municipality must (per object category) use one system. Municipalities are increasingly using the usable floor area. The usable floor area of buildings is also being listed in the system of base registers (base register of buildings). The usable floor area as well as the gross volume has been defined in a formal norm, the NEN 2580. For the measuring of residential properties this norm has been translated into a simple measuring procedure (see attachment 1) for the measuring of usable floor area of residential properties and for the measuring of gross volume of residential properties.

In general, it applies to the data management that the object characteristics used (in addition to for example size, classification, existing annexes, facilities, also quality, maintenance, etc.) must be verified at least once every five years (according to IAAO standards), but also in case of modifications of the object and changes in ownership.

Most object characteristics used in the assessment are specifically being collected for the valuation process. For identifying modifications in registered object characteristics (automatic change detection from) aerial photographs are being used. Increasingly, the use of aerial photography is being integrated with the detection for updating maps and the updating of the Base Register for Buildings, for example.

The market data used for the appraisal consists primarily of sales prices and real estate agent listings of residential and non-residential properties and of rental prices and sales data of non-residential properties. Municipalities receive the sales prices from the Cadastre. To gain a better understanding of the market, municipalities sometimes choose to request additional information from the new owner on the current state of the property or the circumstances under which the sale has been conducted. All real estate agent listings are freely available over the Internet. Lastly, rental prices for non-residential properties like shops and offices and turnover data are also being requested directly from the taxpayer. All these sources of market data can be regarded as reliable. This also applies to the information that is requested from taxpayers because they need to send in 'evidence' (such as a rental contract) with the information requested.

As described, the depreciated replacement costs must be determined as WOZ-value for non-residential properties for which no market exists (schools, power plants, industrial complexes, etc.). The depreciated replacement costs reflect the value for the current owner in case there is no other interested party who is willing to buy this object (on the market). Building costs are being used in order to assess the depreciated replacement costs. Municipalities collect this kind of market information in a mutual database. Based on this data a national valuation directive for specific types of properties is being defined on an annual basis. The non-marketable objects must be valued by all municipalities using these valuation directive. This ensures that the nationwide valuation of the group non-marketable objects takes place in a uniform manner.

There are several organizations in The Netherlands that publish price indices for different categories of real estate properties. The main index for residential properties is the 'Price Index Existing Homes' which is being computed by the Central Bureau of Statistics and the Cadastre. In addition to this, the real estate agent organizations publish indices based on transactions made by their members. There are indices based on economic models as well. All these indices are being updated on a monthly basis. The Price Index Existing Homes is based on all residential property sales registered at the Cadastre and is being calculated by comparing the paid sales price with the WOZ-value of the sold property.

The price index of real estate agent organizations is based on a portion of the home sales (in which one of the members has been involved) and is generally defined based on the median sales price. The indices from the economic models are the result of a numerical model in which the sales numbers of the Cadastre are being linked to general object characteristics of the homes being sold.

For non-residential properties indices are being publiced (annually) on developments in construction costs. This is an important starting point for the assessment of the depreciated replacement costs. For commercial non-residential properties (offices, stores) the ratios generally refer solely to the number/volume of transactions and the extent of available space (vacancy).

6. Mass valuations

6.1 Valuation systems

For the valuation process in The Netherlands mass model-based appraisal is being used. All municipalities or partnerships between municipalities, where valuation of residential and non-residential properties takes place have access to valuation models. This computer (model) assisted mass appraisal is the only approach to annually assess the value of approximately 8.5 million objects efficiently, and the only way in which the most important quality requirements (relating to market level, mutual value ratios between objects, etc.) are being guaranteed.

The Netherlands Council for Real Estate Assessment has formulated requirements appraisal systems must be conformed to (see appendix 2). To make the best possible assessment of the market value, as many sales prices as possible are being used. Therefore municipalities involve in their model at least all sales in a year prior to the value reference date up to six months after the value reference date, in context of the Special Act for Real Estate Assessment.

Municipalities analyze the happenings on the real estate market continually. The municipality receives from the Cadastre all sales of residential and non-residential properties with the paid sales price. The reliability of this information is high. In the context of mass valuation the sales should be analyzed. Not every sales price will correspond with the assessed value (WOZ-value). Legal requirements must be taken into account by the municipality. This analysis is a perpetual work process executed by municipalities. Its aim is to assess whether the sales price paid is conform to the market. An important step in this analysis is the comparison with the assessed value and the analysis of the object characteristics. If this comparison shows for example an unexpected value development or changes in object characteristics, it should be investigated further. This could be done through an inspection on the premises or by requesting additional information from the new owner. It is also an important condition that the results of this analysis are recorded in a systematic manner.

Municipalities are responsible for the selection of the valuation system they use for the appraisal for residential and commercial non-residential properties. Some municipalities are using valuation systems based on a regression analysis. Other municipalities are using a valuation system that is based on the clustering of similar properties in the same area. Both types of valuation systems can meet the requirements as defined by the Council for Real Estate Assesment. It is a conscious decision of the Council for Real Estate Assesment to maximize the use of market competition in the development of valuation systems and to not stagnate this development by too severe external quality requirements for the mass appraisal systems used.

The fact that a relatively large group of municipalities in The Netherlands is using valuation models based on a clustering of similar objects is connected with the legislation and the jurisprudence based upon that. This shows that in case of disputes, the individual valuation outcome is primarily being assessed. Inaccuracies of the model that influence the esitmated value for an individual property are not being accepted.

6.2 Object characteristics

In recent years in The Netherlands emphasis has been put on maintenance, updating and quality improvement of the registered object characteristics. We see this as an important condition, necessary to make good use of mass valuation.

The object characteristics that are being used in model-based valuation are partly taken out of other base registers and are partly collected specifically for the valuation process. Therefore data management is considered an important part in the masse valuation. In part data management consists of establishing and maintaining the relationship between the WOZ-records and the base registers and for another part data management consists of the systematic collection, registering and controlling of other data relevant for mass valuation.

As a result of the economic crisis, which began at the end of 2008, the real estate market in The Netherlands has changed drastically. For the housing market this means for example that the maintenance condition and quality standard of a house has become of much more influence on the market value. This means that these characteristics influence the valuation models and the registration of these characteristics must be in order to guarantee correct estimated values.

6.3 Quality control

Municipalities are responsible for the execution of mass valuation. The Netherlands Council for Real Estate Assessment has defined quality requirements for this purpose. These quality requirements not only relate to the quality of the appraisals but also to the valuation process and the underlying method of process management. Initially, the municipalities decide whether the appraisals meet these requirements. In addition, the Netherlands Council for Real Estate Assessment conducts risk-based inspections and sanctions can be applied, if municipalities do not meet the requirements.

If model-based valuation has been executed, the municipality composes a valuation report for all residential properties. On this valuation report the comparison with market data is limited to a selection of three residential properties sold. However, it is possible to use other sales on the valuation report in order to support the assessed value. After all, all sales within the municipality have played a role in the realization of the appraised value. For non residential properties the valuation report shows how the value is estimates based on for instance the capitalisation of the rental value.

7. Data resources for mass valuation

In the context of mass valuation within the Netherlands three types of information resources are being used. These are:

1. Information from the system of base registers;
2. Information from systems for supply of real estate properties on the market;
3. Information municipalities specifically collect for mass valuation.

7.1 Information from the system of base registers

In The Netherlands a number of registers have been designated, in which certain important data about citizens, businesses and institutions has been recorded in a centralized manner. Those responsible for this system assume that the "authentic data" is of such a high quality that the government can use this information for her work without any further investigation. One of the most important concepts behind this idea is the mandatory feedback. At the moment the user of data from a base register doubts the reliability of the data he may deviate from this data, only if the doubt about the reliability of the data has been reported back to the organisation that is resonsible for the data within that base register. The data will be given a notation and the administrator will then investigate the correctness of the data. In this way a self-cleansing system is being created.

One of the base registers being used for mass valuation in relation to the Special Act for Real Estate Assessment is the Base Register Cadastre. The ownership situation of all parcels is recorded in this register. In addition the market data, in case of a sale, is also included in this register.

The Base Register Addresses and Buildings is being used to identify buildings and associated primary object characteristics, such as size (usable floor area) and building year. However, this register is insufficiently detailed for an accurate mass valuation. Therefore, in addition to the data from the system of base registers other object characteristics, from different sources, must be registered as well.

7.2 Information from systems for supply of real estate properties on the market

Several systems are available on the internet that present the supply of real estate properties, in combination with asking prices, on the market. These systems include characteristics and photos of the objects for sale. This information is, in context of mass valuation, important both for checking and updating the object characteristics as well as for analyzing the market level or situation.

7.3 Information municipalities specifically collect for mass valuation.

The rest of the information important for model-based valuation must be collected by the municipality. This could be, for example, the type of the building, the size of different parts of the building (for instance shopping space versus storage space or an old part of the building versus a

newly built enlargement), annexes to the building or information that provides insight into the maintenance condition or in the quality of an object.

Also some market data must be collected by the municipalities themselves, such as rental prices of non-residential properties.

For the collection of information municipalities increasingly make use of the knowledge of stakeholders, for example by sending out information forms or by asking stakeholders to provide information through interactive websites.

8. Other uses of mass valuation

Apart from taxation the assessed values (WOZ values) are being used for different purposes.

These purposes are partly defined by law, for instance the use of the assessed value to set a maximum rent price for socail housing,. The WOZ-value is also being used by notaries, banks and insurance companies for proventing mortgages and real estate fraud.

It is expected that the wider use of the WOZ values will increase in the coming years because the parliament has taken the decision to make the assessed values (WOZ-values) for residential properties publically available as of 2015.

9. Lessons learned

9.1 Lesson 1: Annual valuation preferred above a four-year revaluation

In The Netherlands we have learned that the transition from a four-year revaluation to a system of annual valuation has had a positive effect on:

- The number of taxes in which the WOZ-value plays a role. As a result of the annual valuation this has increased significantly;
- The number of applications of the appraisals, apart from taxation purposes. This has also increased as a result of the annual valuation. An additional effect is that other interests are arising, for example if the appraisal can be used when taking out a mortgage loan the taxpayer has an interest in a higher assessed value. This will make the system more balanced;
- The execution of the valuation. Compared to a four-year valuation, the valuation can be conducted more process-driven and thus more efficiently;
- The efficiency of the work process, in the period 1997 to 2014 the total annual costs being made for the valuation dropped from € 190 million to € 150 million;
- The number of complaint and appeal procedures. Through a system of annual valuation the appraised value, which is being taxed, better matches the perceived value of the taxpayer.

9.2 Lesson 2: Gradual transition to annual valuation

Furthermore we have learned that it was a good choice to not introduce a system of annual valuation at once. A gradual transition from a four-year to an annual valuation caused the work processes gradually to be tuned. Also, necessary improvements/optimizations in a system with a lesser revaluation frequency can be realized more easily.

9.3 Lesson 3: Proper registration of object characteristics is essential

Proper registration of object characteristics is essential for qualitative good valuation and for the trust of taxpayers. Therefore investments must be made and there has to be awareness about the way the registration of object characteristics can be kept up to date. The process-based updating of a registration is less expensive than performing revaluations.

9.4 Lesson 4: Broader use of registered object characteristics

Some of the characteristics that are being used in the mass valuation can also be used in other government work processes. It is in the first place advisable that within the government uniform information is being used. In addition, the principle of "single data collection, multiple uses" is recommended for reasons of efficiency.

9.5 Lesson 5: Responsibility for the quality of mass valuation

The primary responsibility for the quality of mass valuation should organizationally be placed as low as possible. By this we mean that the organizations responsible for the valuation initially are responsible for quality control as well. If mass valuation, as is the case in The Netherlands, is the responsibility of local authorities, it is wise to accommodate the securing of efficiency, clarity, quality and uniformity in one external organization.

9.6 Lesson 6: Involvement of taxpayers in the valuation process

We have learned that the involvement of taxpayers in the valuation process has a positive effect on the confidence they have in the outcome. We recommend in particular giving taxpayers the ability to influence the registered object characteristics. Obviously, any changes must be verified before they can be included in the registration.

9.7 Lesson 7: Joint collection of market information

If there is a decentralized execution of mass valuation the joint collection of market information underlying the valuation not only leads to better appraisals and uniformity between appraisals but also significant cost savings.

APPENDIX 1 – Measuring instruction usable floor area residential properties

1. Measurement of the usable floor area of a residential property per floor level

Step 1: Measure the total usable floor area of the floor level

Principle: Always measure an area (or areas) within the outer/separating walls, including supporting and non-supporting partition walls. Outer/separating walls are the walls that separate one house from the other house (or from the outside). Furthermore, all interior walls in the property are being designated as "non-supporting".

Just measure the usable floor area of which **the highest point is at least 1.50 meters high**[1].

- Divide the total usable floor area in easy-to-measure areas by making use of the standard basic shapes:
  - Rectangle
  - Triangle
  - Circle
  - Semi circle
  - Quarter circle
  - Ellipse

Take this into account when measuring, for example, a bay window.

- Summarize all usable floor area parts.
- **Make corrections for 5 elements**[2]**.**
  - Stairwell larger than 4.0 m² (Deduction)
  - Service shaft or detached building structure (other than a staircase) larger than 0.50 m² (Deduction)
  - Alcove larger than 0.50 m² (Can be an addition or a deduction[3].)
  - Elevator shaft (Deduction)
  - Loft larger than 4.0 m² (Deduction)

Step 2: Measure the usable floor area of the miscellaneous indoor area(s) (if existing)

An area is considered a miscellaneous indoor area (other than primary living space) when one of the following situations is applicable:

[1] Floors under staircases are included in accordance with NEN 2580.
[2] This list corresponds with the list in NEN 2580. In NEN 2580 the usable floor area of the supporting partition walls is excluded from the measurement (deductible item). Regarding this aspect, this measuring instruction differs from NEN 2580. No distinction is being made between supporting and non-supporting partition walls. The supporting partition walls are included in the usable floor area according to this instruction.
[3] Depending on the selected standard basic shapes.

- **The highest point is between 1.50 meters and 2.00 meters high.**
- **The highest point is above 2.00 meters, but the interconnected area higher than 2.00 meters is smaller than 4.0 m²** (only applicable when there is also a part of the area with a height of less than 2.00 meters)**.**
- **The area (s) is (are) architecturally only suitable as storage space(s), such as a bicycle storage, a garage or a non-walkable attic.**
- **There is a storage attic, which is an attic only accessible by non-fixed stairs, and/or an attic with insufficient daylight (window area less than one square meter).**

In case of doubt, the areas are being counted as primary living areas. For example hallway, kitchen and pantry, laundry room, pantry, boiler room, storage closet and electrical room are counted as primary living areas, unless one of the four situations, as mentioned above, is applicable (for example central heating system in the storage attic, utility room with a height of less than 2.00 meters).

Make use of the basic shapes and elements when measuring, and measure within the partition walls.

Step 3: Determine the "primary living area"

Subtract the usable floor area as located in step 2 from the usable floor area as located in step 1 to determine the "primary living area".

Step 4: Measure the usable floor area of the building-related outdoor area(s) (if existing)

An area is considered a building-related outdoor area if this area is **not or only partially surrounded** by fixed walls and therefore has no fixed outer boundary. Think for instance of a balcony or terrace. In case an apartment is situated on the ground floor, a terrace, when and in so far as this terrace rests on support that has been integrated into the building structure of the residential property, must be considered as a building-related outdoor area. This is an exception to the general rule and NEN 2580.

To determine the usable floor area of a building-related outdoor area, distinction is being made between a covered area and a non-covered area:

- In case of a covered building-related outdoor area, the usable floor area is measured up to the vertical projection of the canopy or roof;
- In case of a non-covered building-related outdoor area, the usable floor area is measured up to the ascending partition structure, such as a fence, roof curb or edge of the floor construction.

Make use of the basic shapes and elements when measuring.

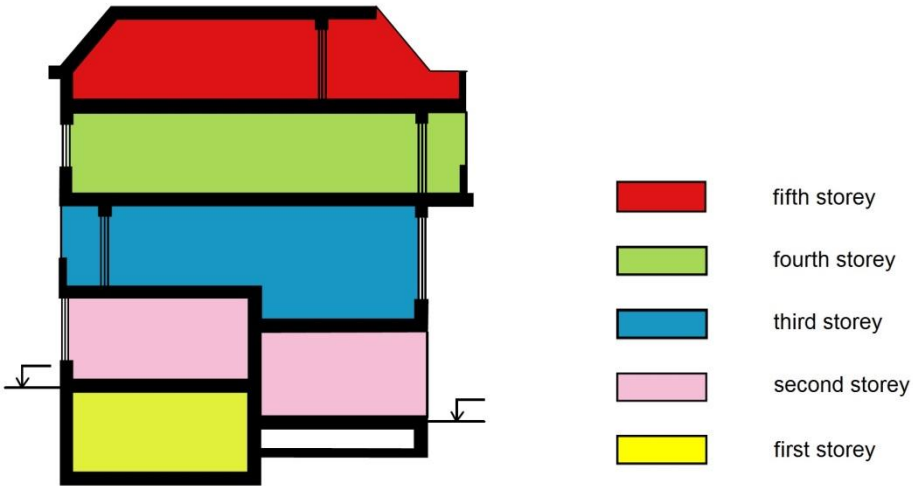
Step 5: Proceed to the next floor level (if existing)

Repeat steps 1 through 4.

Step 6: Determine the total usable floor area of the residential property broken down into different usable floor areas

Summarize the located habitable floor areas per floor level to one primary living area for the residential property. Do the same for the usable floor area miscellaneous indoor area and the usable floor area building-related outdoor area.

Illustration 1: Floor levels (Source: NNI, NEN-2580)



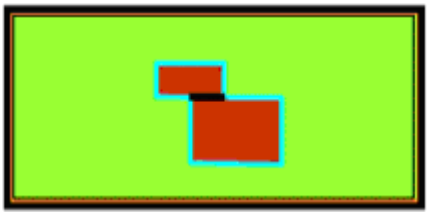
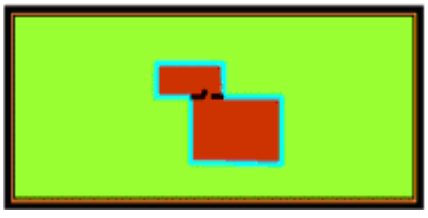
Measuring the area of exterior storage space(s)

An area is an exterior storage area if there is **no adjacent wall** with the main building and if the area is **only accessible through the open air**. Furthermore, the exterior storage area can never have a residential function.

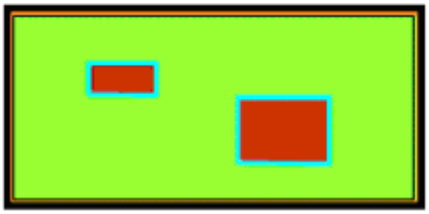
The measuring of the exterior storage area is done according to the same principle as applied to the residential property (step 1).

If there is more than one exterior storage area, the measured areas will be summarized into a single usable floor area exterior storage area for the residential property.

Illustration 2: Miscellaneous indoor area versus exterior storage area

1	2
	
▪ Adjacent wall ▪ Only accessible through the open air → Miscellaneous indoor area	▪ Adjacent wall ▪ Accessible via interior door → Miscellaneous indoor area

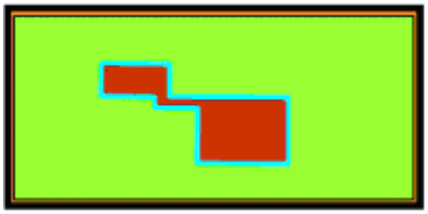
3



- No adjacent wall
- Only accessible through the open air

→ Exterior storage area

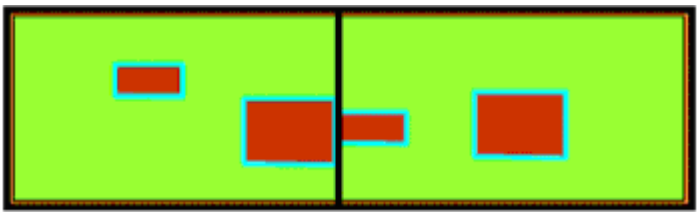
4



- No adjacent wall
- Accessible via closed connection

→ Miscellaneous indoor area

5



- The shed has an adjacent wall with the neighboring residential property

→ Exterior storage area

This illustration is partly derived from the Manual Characteristics Base Registers Addresses and Buildings, the Ministry of I & M)

APPENDIX 2 – Measuring instruction gross volume residential properties

Measuring the gross volume of a residential property, per construction level

Principle:

a. The volume of a construction level of a residential property is being measured by multiplying the total floor area of the construction level with the gross height of that level;
b. The total floor area of the construction level of the residential property consists of the area including the outer/partition walls, supporting and non-supporting interior walls and alcoves, stairwells, lofts, vaults etc.;
c. The (gross) height of a construction level is being determined from the top of the base up to and including the base of the next floor level or up to and including the roof construction above;
d. Included in the volume of a residential property are areas with a height of less than 1.50 meters with the exception of crawl spaces;
e. Not added to the volume of the residential property are the volumes of exterior storage areas, or basement areas in apartments and flats and/or the volume of covered building-related exterior areas that belong to the residential property. In determining the gross volume of a residential home or complex of multi-family homes, the existing storage rooms, basements, indoor parking places etc. belonging to the property or complex, are included in the measurement.

Step 1: Measuring the construction level floor area

Measure the total floor area by measuring along the outer walls. Measure by including exterior walls, interior walls, lofts and stairwells etc. Concaving and protruding building components at the front with a cross-sectional area less than 0.50 m², are disregarded. So, in case of a niche in the front of less than 0.50 m² this is simply being added to the volume and in case of a protruding element this is not being added to the volume.

In case of property-separating-walls measurement is taken "heart-to-heart". If the thickness of the property-separating-wall cannot be measured, it is assumed that this wall is 30 cm thick. (Therefore, a distance of 15 cm from the center of the wall needs to be maintained).

Divide the total floor area in easy-to-measure areas by making use of the standard basic shapes:

- Rectangle
- Circle
- Quarter circle
- Triangle
- Semi circle
- Ellipse

In case of variable heights of the construction level, distinguish areas wherefore the building height can be determined unambiguously.

Summarize all area parts.

Contrary to the measurement of the usable floor area, the entire area is being measured, even if the highest point is less than 1.50 meters. There is therefore no adjustment for stairwells and lofts.

Step 2: Measure the (gross) height of this construction level

The (gross) height is being determined from the top of the base up to and including the base of the next construction level. In case the thickness of the (property-dividing) floor cannot be measured, it is assumed that this floor is 30 cm thick.

If it is the upper construction level and if there is a flat roof, measurement must include the roof construction. For the thickness of the roof construction 30 cm is being maintained in case this measurement is unknown. When there is no straight ceiling because of a cover up roof construction, go to step 4.

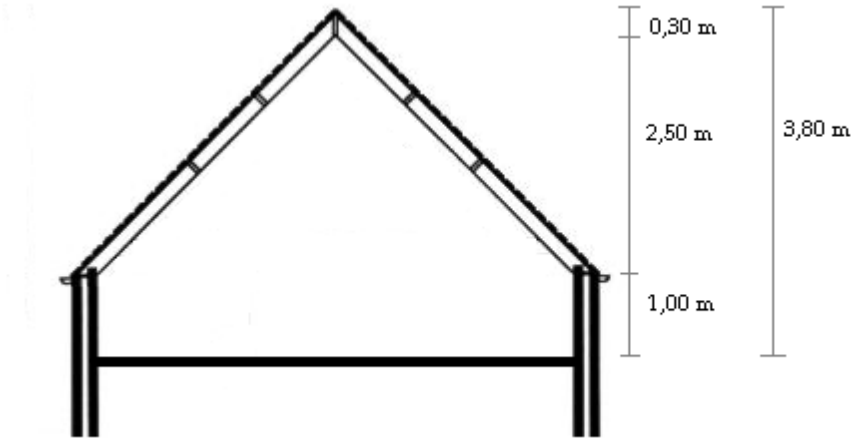
Step 3: Multiply the volume of the construction level with the (gross) height

This multiplication produces the gross volume per construction level.

Step 4: Determine the volume of construction levels with a cover up roof construction

In case of a regular gabled (or ridged) roof or lean-to roof the volume of the area below the sloping roof is being measured by multiplying the floor area of this part with the average of the lowest and the highest height . By determining these heights, measurement must be taken from the top of the base up to the (ridge) beam. 30 cm will be added to the measured height for the beam above, up to the roof (the ridge) of the house, if this measurement is unknown.

For example:



The volume of this attic floor level is being calculated as follows: The total floor area is being multiplied by the average floor height. The average floor height in this example is: (2.50 + 0.30) / 2 + 1.00 = 2.40 m
In case of a symmetrical roof construction the average floor height can also be calculated as follows: (3.80 + 1.00) / 2 = 2.40 m

If necessary, implement correction for dormers etc.

In case of a more complex roof construction divide the gross floor area in such parts that, based on an average height, calculation can be done unambiguously.

Step 5: Proceed to the next construction level (if existing)

Repeat steps 1 through 4.

Step 6: Determine the volume of the ground floor

This step is not being performed to determine the gross volume of a residential property within a building complex with multi-family homes (the "volume behind the front door").

As repeatedly is being measured from the top of a base of a construction level, the volume of the area on the first construction level needs to be added. Often this is the ground floor, but it can also be a basement floor or just a "floating" floor as first construction level.

If there is a ground floor, basement floor or "floating" floor (located at the base floor of the residential property) it is assumed that this floor is 40 cm thick.

Multiply the gross volume of the lowest construction level with the thickness of the floor (40 cm). If, for example, a house has a part-sized basement or is partially located above a parking garage, the volume of the lowest construction level may consist of several parts.

Summarize the calculated gross volume per construction level

For residential properties within a building/complex with multi-family homes:

- Summarize the gross volume per construction level of the residential property. This produces the gross volume of the (individual) home within the complex.

For single-family homes or buildings/complexes with multi-family homes:

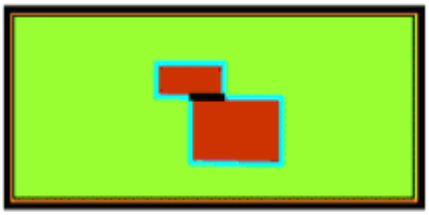
- Summarize the gross volume per construction level of the residential property (building or complex) and hereby add the calculated volume of the ground floor. This produces the gross volume of the home (building or complex).

Distinguish between indoor and exterior areas

Not added to the residential property is the volume of external storage areas, or basements in apartments and flats and/or the volume of covered building-related exterior areas, belonging to the residential property. It is, therefore, appropriate to make a clear distinction between exterior storage area and indoor area.

Miscellaneous indoor area versus exterior storage area

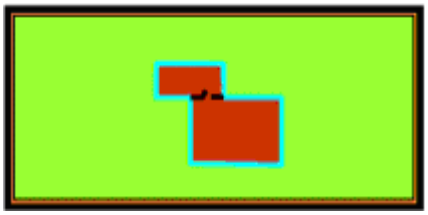
1



- Adjacent wall
- Only accessible through the open air

→ Miscellaneous interior area

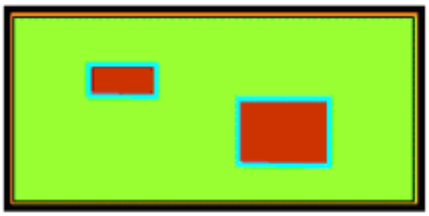
2



- Adjacent wall
- Accessible via interior door

→ Miscellaneous interior area

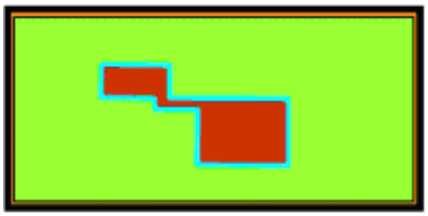
3



- No adjacent wall
- Only accessible through the pen air

→ Exterior storage area

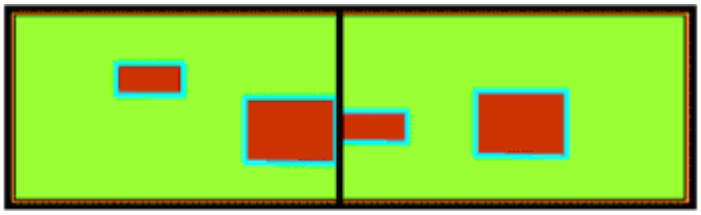
4



- No adjacent wall
- Accessible via closed connection

→ Miscellaneous interior area

5



- The shed has an adjacent wall with the neighboring residential property

→ Exterior storage area

This illustration is partly derived from the Manual Characteristics Base Registers Addresses and Buildings, the Ministry of I & M)

APPENDIX 3 – Quality requirements for valuation models residential properties

The value of residential properties is primarily based on the results of a valuation model. The valuation model is not the same as the automated tools (software) that are used for the valuation, but it is the representation of the mutual ratio between the objects and the results thereof (model values). To ensure the quality of appraisals, this valuation model must at least meet the following quality requirements:

- The minimum set of object characteristics (location, type of property, year, size of the home, plot size) is involved in the valuation model;
- Additional object characteristics are involved in the valuation model when the value relevance has been obtained from the market analysis;
- Sales prices of at least five years should be included in the valuation model while the system (accountability) should make the market development between date of sale and value reference date comprehensible;
- The valuation model ensures correct mutual value ratios by involving at least 25 sales numbers in the determining of the model value. This requirement means that the valuation of properties in a defined group cannot be based only on sales prices within that group. Also an automated or interactive comparison with other types of residential properties, residential properties in another neighborhood etc. must be made. If it is verifiable that insufficient sales prices are available, a smaller number can sometimes be sufficient;
- The valuation model is dynamic, this means that the valuation model works with a variable value reference date (thus the valuation model can also determine the value per January 1st of the following year);
- The valuation model not only leads to new assessed values, but it is also functional in market analysis and the processing of complaints and appeals. The valuation model supports all the processes relevant for market analysis and appraisal;
- The valuation model supports the explanation of the difference between the appraised value in relation to the value (calculated with this valuation model) on the previous value reference date. For the acceptance of the value by the stakeholder, certainly in case of annual valuation, a justified difference in value compared to the previous year is of great importance, especially when the difference deviates from the "development trend";
- The valuation model generates the valuation report with the selection of comparabble sales, which may be modified interactively (by selecting other comparable sales);
- The valuation model supports the explanation of the difference between the appraised value in relation to (the appraised value and the sale price of) the comparable sales as selected by the valuation model;
- The valuation model supports the explanation of the difference between the appraised value in relation to (the appraised value and the sale price of) randomly (by the stakeholder) selected other properties;
- The appraised values are rounded to a level consistent with the accuracy of the valuation. The value is rounded down to units of at least € 1000. The rounding pertains to the assessed value (final value);

- The valuation model is consistent, which means that when two residential properties differ with respect to one characteristic used in the model, there will always be an expected difference in the assessed value. The consistency furthermore means that the valuation model ensures the overall value ratios, but also that the value impact of "changes" of a residential property match the expectation.