



Certified smart and integrated living
environments for ageing well

D4.4 – Technical Reference Framework - Final version

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Executive Summary

This document presents the final version of the Technical reference framework (TRF) for the Homes4Life certification scheme (CS). It describes the certification process and the contents of Homes4Life scheme that has been implemented on ISIA digital platform. It is based both upon v0 delivered in M12 and v1 delivered in M23 and constitutes the final version of the TRF. The CS validation phase was performed through a series of test in 12 buildings distributed over 10 pilot sites in different European countries and has been completed and contrasted through a Call for Comments on the previous v1 of the CS.

The main principles of a certification scheme are defined according to Certivéa's experience and knowledge about certifications schemes (section 2). This section goes through different aspects that must be considered when developing a certification scheme. Afterwards, this document focuses on the specific characteristics of the Homes4Life CS (section 3), and details its principles and assessment process, structure, scoring and award system. Homes4Life CS results from the Functional Brief (D3.4) and final feedbacks from pilot sites and different stakeholders (Expert Board members, Community of interest, Website). Finally, this report presents the quality and validation process carried out for the Homes4Life CS within the project (section 4) and the major changes that occurred from v1 to final version.

Acronyms and abbreviations

AFE	Age-friendly environment
CS	Certification Scheme
CoI	Community of Interest
H4L	Homes4Life
ISIA	Innovative, Sustainable, Interactive Application
KPI	Key Performance Indicators
TRF	Technical Reference Framework

1 Introduction

1.1 Aims and objectives

The objective of this Technical Reference Framework (TRF) is to describe the structure and contents of the Homes4Life certification scheme (H4L CS) according to the expectations contained in the Functional brief (task 3.4). It presents all the requirements and the assessment method. Previous versions were delivered in November 2019 (D4.1 TRF v0) and October 2020 (D4.3 TRF v1). The final version of the H4L CS presented in this report will be implemented before the end of the project on the ISIA digital platform.

This final version of the TRF is a significant update which takes into account comprehensive feedbacks from the tests which took place in 10 pilots sites in different European countries all over 2020 and the widespread call for comments to the Col held on November 2020.

1.2 Report structure

The first part of this document (section 2) describes the **Main aspects of a certification scheme**, its principles and structure and general recommendations to fulfil requirements.

The second part (section 3) proposes the detailed **Specific characteristics of the Homes4Life certification scheme** in its final version, according to the Functional Brief (D3.4) and after integration of feedbacks from the pilot sites and the Col.

The third part (section 4) describes the **Quality and validation process performed for the Homes4Life certification scheme** within the project, and the improvements that were made.

Appendices (section 5) present the description of the clusters and categories, the evidence documents for the Management phase, the complete **list of the requirements** sorted by clusters and categories, and the questionnaires of the residents' surveys.

1.3 Contributions

All partners have contributed to the development of the H4L CS, at one stage or another. Either through their experience in writing certification scheme and knowledge of other certification schemes (CER), but also with respect to their experience and knowledge of age-friendly environments (TEC, TNO, UU, UNIVPM, R2M, AGE, EUROCARERS, ECTP). Main contributors for writing this report were CER, TEC, TNO and UNIVPM.

Our deepest gratitude goes to the pilots that accepted to perform an assessment on their sites, in order to improve the successive versions of the H4L CS and to the partners that accompanied them on the process. We would like to extend here our sincere thanks to them and to the members of our Col.

2 Main aspects of a certification scheme

Certification is an activity by which a recognized organization, independent of the parties involved, gives written assurance that an organization, process, service, product or professional competence complies with requirements specified in a standard/certification scheme.

A CS contains all the necessary tools (field of application, requirements, assessment process) necessary to drive a certification process.

2.1 General principles of a certification scheme

Considering the range of certified products and services, certification schemes may have very different aims and extents. This is the reason why building a certification scheme requires very specific definition of the client, scope, phase and assessment method.

The choices made at this phase determine the different types of requirement and evidence needed for the certification process.

Who is the client of the certification scheme? The client refers to the entity (organization or person) requesting and paying for the certification. Hence, it does not refer to the user (resident) of the certified “home”. In the field of housing, clients may include, but are not limited to: private owners, social housing companies, project developers (real estate and construction companies) or investment companies.

What is the scope of the certification scheme? The scope refers to the product, service or process to be certified. In the field of housing, several types of residential buildings could be certified (houses, multiple dwellings buildings or parts of buildings, building complex) as well as their close environment (plot, immediate surroundings) and the services associated.

When does the certification occur? The “phase” refers to the life cycle of the product or service. In the field of housing, situations generally considered include “in decision, on design, under construction, in use, in renovation/retrofitting”.

What is the assessment method? The term “assessment method” covers both to the type of evaluation (mainly quantitative or qualitative criteria, with an orientation on performance or means) and the scoring method (number of evaluation scale; final and intermediate with different kinds of scaling; points, percentage, average score, range class).

For instance, in the field of housing, a quantitative indicator may refer to energy consumption, and a qualitative one to accessibility of a building.

What is the certification process? Some certification schemes are based on audits, and others on documentary verifications. Mixed process certification also occurs. Audits require on-site evaluation; documentary evidence can be assessed off-site. The choice depends on what is to be attested: for instance, to certify that a building is compliant with

certification requirements upon delivery or during use, on-site audits are most appropriate. Documentary verification is logical for projects in the design phase, and in all phases may include results of surveys and questionnaires, expert opinion and so on.

The necessary guidelines to adapt these general principles to Homes4Life certification scheme have been given by the functional brief. They are presented in section 3.

2.2 Main structure of a certification scheme

The typical structure of a CS is a multiple-tier pyramidal structure as illustrated in Figure 1.

The highest level of the structure is the **“Certification scheme” level**. This level is the result of the assessment, expected by the client. This level must translate all the topics that are involved in the “certification scheme” field.

The **“priority” level** concerns the main fields or aspects or dimensions that must be addressed in the certification scheme. The aim of this level is to be sure to have the list of all these priorities: if one of them is missing, we can't say that the certification scheme level covers all his field.

The **“theme” level** is the translation of all the aspects of each priority. These aspects could be categories allowing to detail the priority.

The **“sub-theme” level** is a more detailed level. It is not mandatory and must be created only if needed to fully describe the priority.

The **“requirement” level** is the most detailed level of the scheme. Each requirement corresponds to one assessment indicator. This level is described in sub-section 2.3.

The simpler the structure of a certification scheme, the better. Different levels must be used only if necessary.

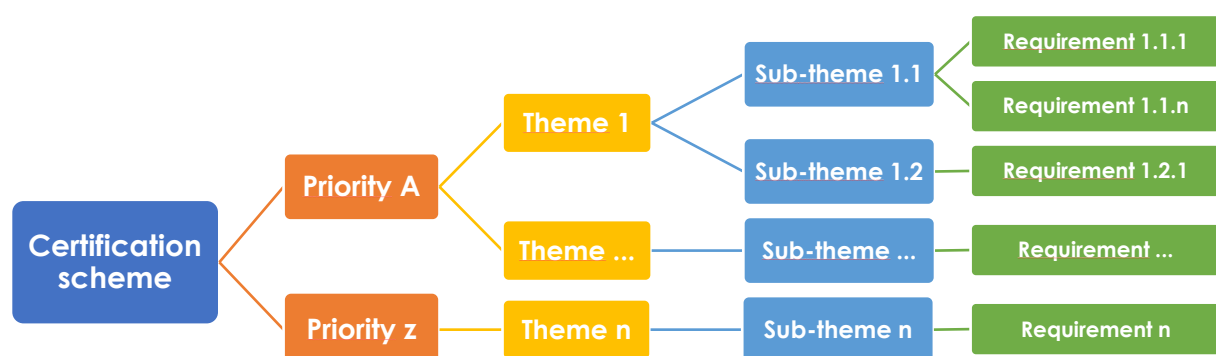


FIGURE 1 – TYPICAL STRUCTURE OF A CERTIFICATION SCHEME

2.3 Formulating a requirement

Each requirement is defined by a set of items such as in Table 1. Its structure may be simplified or elaborated according to the selected principles of the CS. For instance, requirements will be adapted for each type of buildings (e.g. individual, collective housing, etc.) and according to each lifecycle phase of the buildings (design, construction, exploitation).

Each requirement must be specified so that it can be verified and proven. A formulation of all the benefits associated to each requirement will be developed, to allow a better understanding and appropriation of the reference framework.

TABLE 1 – TYPICAL FORMULATION OF A REQUIREMENT

What		How
Definition	Code	Unique identifier of the requirement. Identifies the place of the requirement in the pyramidal structure
	Title	Short text / short sentence < 240 characters
	Objective	Text explaining the objective and relevance of the requirement (unlimited)
	Description	Text describing the requirement in detail (unlimited). Explanations about the requirement, definitions, examples, bibliography, applicable regulations... Taking up the issue and specifying the definitions necessary for understanding and possible caution.
Assessment	Levels	Points, values, non-applicability, etc.
	Evaluation	Number, list of choices, yes/no, achieved/not achieved, etc....
	Evidence	Documents, studies, measurements, ...etc. Evidence necessary to validate the achievement of the requirement

When a requirement is written, the following points must be respected.

Applicability: it is better to have requirements which are applicable generally, whatever the type of building, its context, its situation/phase et cetera. Exceptions to this rule occur: as some requirements may only be applicable in specific circumstances (type, context, situation/phase). Requirements should be formulated for general application whenever possible. Where this is not possible, the conditions for applicability should be explicitly stated and verified through a preliminary question.

Evidence: it is necessary to consider the situation (construction, renovation, existing) and the phase (decision/requirements, design, works, in-use) of each building. Indeed, evidence required will generally vary according to situation and/or phase.

3 Specifics for Homes4Life certification scheme

According to the Functional brief instructions (D3.4), feedbacks from pilot sites, and comments from the Col, the following principles will apply to the H4L CS.

3.1 Principles

A set of items will be identified in the CS: clients, scope and certification process. They are defined below.

3.1.1 Clients of the certification scheme

The **Client** refers to the entity applying and paying for certification.

H4L is open to individual (e.g. a private owner of a dwelling) or collective bodies (e.g. an organisation building or managing multiple dwellings). Different statutory regimes exist across Europe, but in terms of housing organisations, they generally and respectively can be defined by their legal status, economic profile, and sector:

- **Legal status:** Private or public
- **Economic profile:** For-profit or non-for-profit
- **Economic sector:** Housing, Planning and development, Construction, Investment, Insurance and banking, Health and social care.

Two main categories of clients will be addressed by the future H4L CS and should be characterized: public sector and private sector, each one of these could either be profit or non-profit organization.

Public sector generally involves social and public housing, as well as health and social care providers, whatever the territorial level (national, regional, local). Private sector generally refers to project developers, investment companies, construction firms, service providers, private health insurance companies. However, depending upon the European country, some organizations may be either public and private, profit or non-profit (for instance, social housing or service providers).

3.1.2 Scope of the certification scheme

The **Scope** refers to the product to be certified. H4L CS assesses residential buildings, be they individual or collective, and their immediate environment, including common spaces. For immediate environment, H4L would be certifying the position and location of the home not the quality of the neighbourhood or village as such.

Different configurations, depending on building types and perimeters, may be considered. Therefore:

Two building types are defined (Figure 2):

- **Individual house:** a single or semi-detached house containing only one-dwelling unit.
- **Collective building:** a (multi-storey) building with multiple dwelling units.

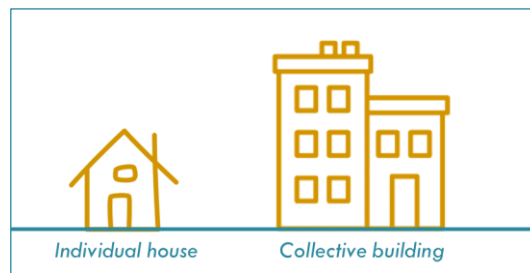


FIGURE 2 – BUILDING TYPES

Four perimeters are considered to carry out the assessment (Figure 3):

- **A single house:** a one dwelling-unit building. The assessment is performed for the whole building and its immediate environment.
- **A single flat in a collective building:** a single apartment in a multiple-flat building. This is a specific case in which the assessment is performed for one dwelling unit only in an entire building. The assessment considers the dwelling situation in the building, and the surroundings of the building; but only the dwelling is certified, not the entire building.
- **A single collective building:** a building with multiple dwelling units.
- **A residential complex:** a complex with one or several kinds of building types (e.g.: housing development, private estate, etc.).

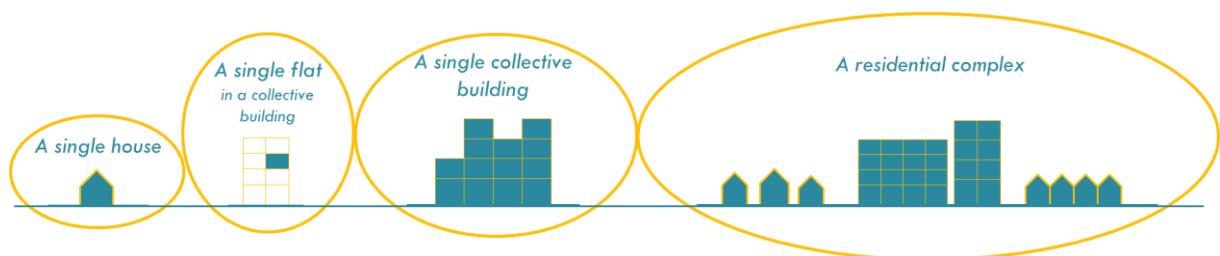


FIGURE 3 – PERIMETERS

One assessment is realised for each building. However, sampling and duplication methods allow to reduce the number of assessments required (Figure 4):

- **Sampling:** if the characteristics of several dwellings are identical, then one dwelling is chosen as a sample for other dwellings. In a single collective building, specific rules are defined in the requirements where it is necessary.
- **Duplication:** if the characteristics of several buildings are identical then duplications of the assessments are possible.

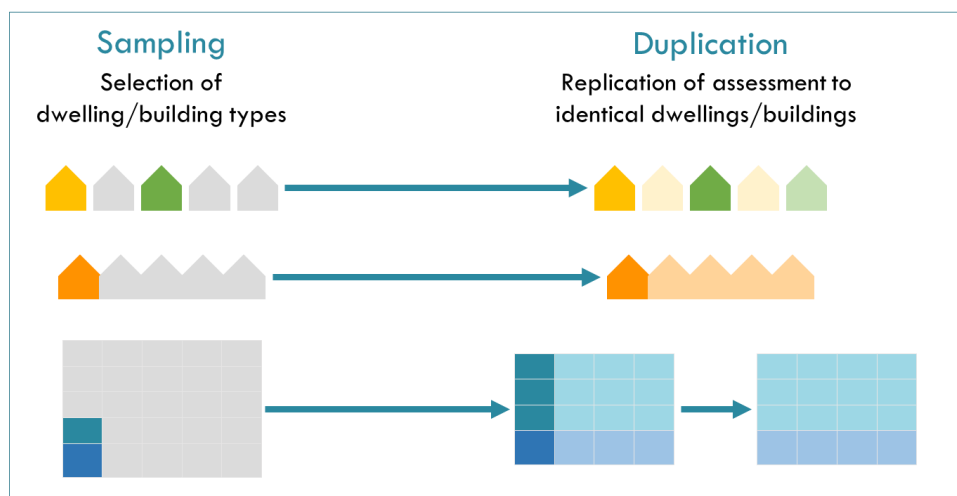


FIGURE 4 – SAMPLING AND DUPLICATION PROCESSES

Two occupancy situations are encountered:

- **Not yet in use:** the building is in design phase, under construction or delivered, but not in use yet. This includes design and realisation of retrofitting, renovation or rehabilitation works.
- **In use:** the building exists, has been officially authorized to be occupied and is occupied.

3.1.3 Certification process

The **Certification process** refers to the life cycle of the product, the type of assessment and the validity dates.

Three phases are identified by Homes4Life CS in terms of life cycle:

- **In design:** for building before works (in cases of construction, retrofitting, renovation, or rehabilitation).
- **Under construction:** for building in works (in case of construction, retrofitting, renovation or rehabilitation)
- **In operation:** for all delivered buildings, either after construction, retrofitting, renovation and rehabilitation, or buildings in use.

According to these phases and to the occupancy situation, the assessments will take place at different periods and the validity of the certificate will vary as shown in Table 2 and Figure 5.

TABLE 2 – ASSESSMENTS AND VALIDITY OF HOMES4LIFE CERTIFICATE

Occupancy situation	Life-cycle phase	Assessments	Validity of certificate
Not yet in use (including retrofit, renovation, rehabilitation)	In design	One assessment (documentary verification) at the end of the design process.	Until delivery of the building
	Under construction	One assessment (on-site audit) at the end of works.	Maximum time span of 4 years <u>after delivery of the building</u> .
		If the site is not occupied 4 years after delivery of the building, a new on-site audit may be performed to extend the certificate.	Additional time span of 4 years <u>after the additional audit</u> .
In use	In operation	One assessment (on-site audit) at the beginning of the client's commitment (with a minimum contractual commitment of 5 years). Follow-up assessments every 5 years if the commitment goes beyond the minimum contractual commitment.	Maximum time span similar to the client's commitment (minimum validity of 5 years).

In case of considerable change such as a major rehabilitation, or a change in the main responsibilities, an on-site audit must be done within 12 months to extend the validity of the certificate, unless the next follow-up audit is included in this period.

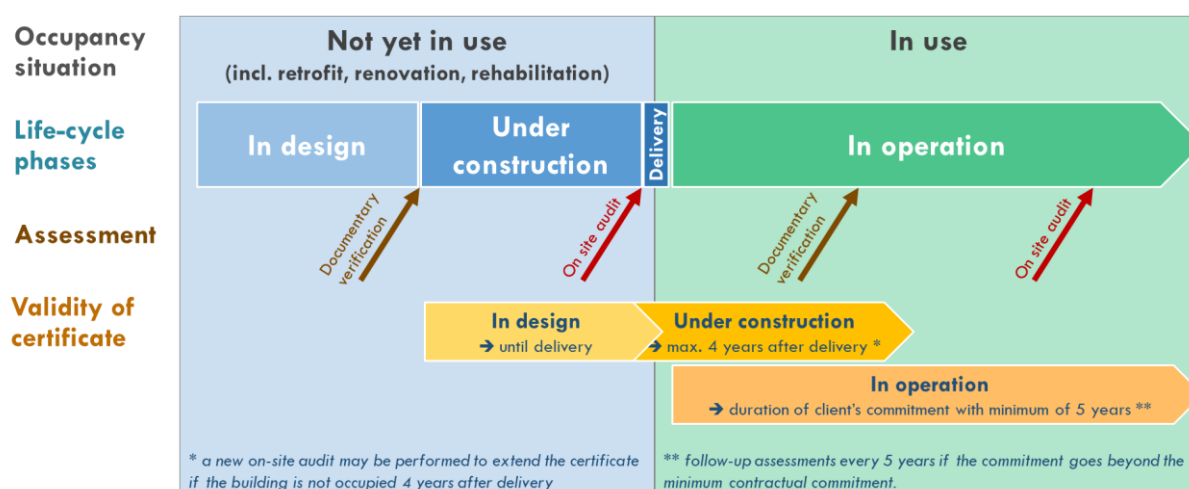


FIGURE 5 – ASSESSMENT PROCESS AND VALIDITY PERIOD

3.2 Structure

3.2.1 From taxonomy framework to certification scheme

H4L CS was structured according to the working taxonomy framework (see *deliverable D2.4 and D3.1 – Working taxonomy and KPI Framework for Smart age friendly living environments*). This taxonomy defined the main items of an AFE, organised them into a hierarchical classification composed of 5 clusters, 14 categories and 59 sub-categories, and proposed a complete set of key performance indicators (KPI).

H4L CS has adopted a simple hierarchical classification composed of the 5 clusters ('priority' level of the scheme) and the 14 categories ('theme' level of the scheme) (Figure 6). In the final version of the CS, the total number of requirements has been reduced to 111, compared to just below 200 in the first version. The reduction was achieved through removal of (near) duplicates, grouping of similar requirements, elimination of requirements that did not allow of satisfactory evaluation, and increased reference to applicable norms and regulations applicable. The assessment method was based upon:

- Design specifications, mainly associated with a quantitative evaluation (i.e. measurements, performance levels, etc.),
- Design features, mainly associated with a qualitative evaluation (i.e. yes/no, a/b/c/d criteria).
- Design quality mainly associated with an evaluative method (i.e. participatory methodologies).

This method conducted to the development of requirements to question the design specifications and features, questionnaires for residents' surveys to deal with the quality of the living environment, and items for a context analysis of the site that will be assessed.

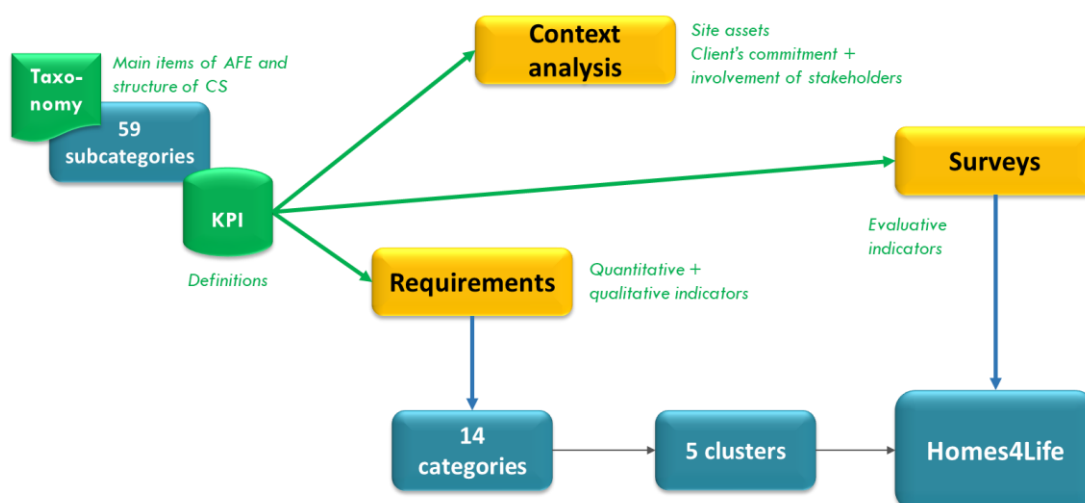


FIGURE 6 – FROM TAXONOMY FRAMEWORK TO CERTIFICATION SCHEME

3.2.2 General structure of H4L CS

Therefore, the H4L CS is composed of a management phase and 5 clusters which deal with a whole set of items on AFE.

The Management phase covers the need for the client's commitment and general requirements and is explained in section 3.2.3. The 5 clusters constitute the core of H4L certification and encompass the main aspects of an age-friendly environment. They are called **Personal**, **Social**, **Economic** **Physical** and **Outdoor access** (Figure 7).

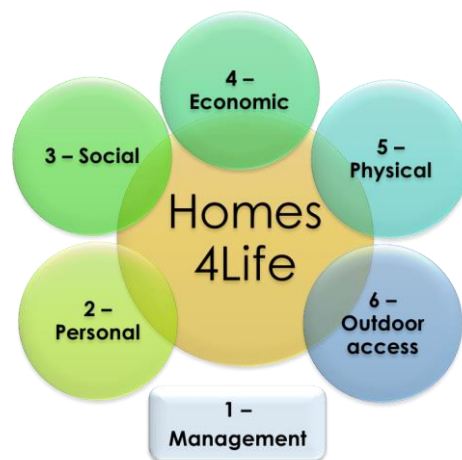


FIGURE 7 – STRUCTURE OF HOMES4LIFE CERTIFICATION SCHEME

Most of the clusters are very specific to H4L CS and make it different from other certification schemes in the market:

- The **Personal cluster** relates to the importance of the home environment on people's emotional well-being, sense of anchoring and sense of self. The home is an important part of who and what people are, and this importance increases as people age and spend more time in their home.
- The **Social cluster** encompasses all those functions of the home environment that are in some way relevant to the occupants' ability to stay socially active. It includes the ability to receive visitors into the home; maintain existing social networks and build new connections; engage in social activities of one's own choice and at times and places appropriate to one's personal needs and preferences; say remain a contributing member of society.
- The **Economic cluster** considers the economic factors that determine the quality and fitness for purpose of the home environment for ageing in place, and the capacity to choose the environment that best fits one's needs and preferences.
- The **Physical cluster** covers the elements of the dwelling that contribute to the physical safety and comfort of the occupant, and the smart readiness of the dwelling permitting digital services.
- The **Outdoor access cluster** deals with the quality of the environment just around the home place, the immediate environment, the neighbourhood or village.

The clusters are grouped into two super clusters upon their fields of interest:

- Personal, Social and Economic clusters into Super cluster 1 around the resident's relationship to his/her home environment.
- Physical and Outdoor access clusters into Super cluster 2 about the adaptation of home and its immediate environment to age related situations.

Each cluster is then divided in categories, for which a set of **requirements** has been defined. Clusters and categories are described in appendix 5.1. The H4L CS structure is illustrated in Figure 8.

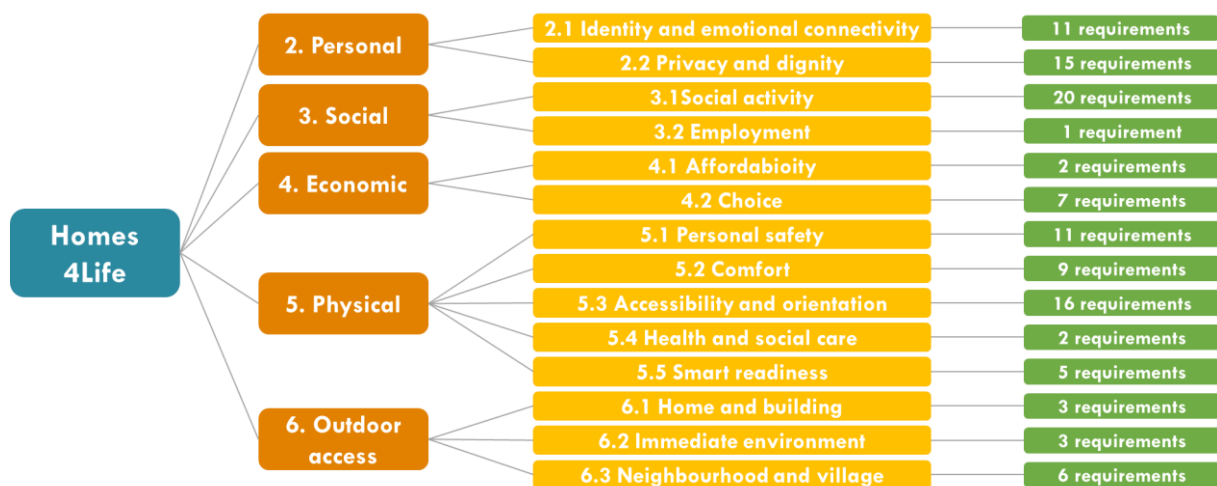


FIGURE 8 –STRUCTURE OF HOMES4LIFE CERTIFICATION SCHEME

3.2.3 The Management phase

The Management phase covers the need for general requirements and has multiple objectives:

- Collect general information on the client, the audited building and its environment.
- Produce an analysis on different contexts (legal and regulatory environment, cultural and socio-geographical environment, local actors, etc.).
- Explain and formalise the conditions of the evaluation.
- Obtain the client's commitment to carry it out.

Therefore, the Management phase includes two documents – a commitment document and a context analysis – used as evidence for the auditing process (see Appendix 5.2):

The **commitment document** will collect the client's involvement in terms of:

- Compliance with national and local regulations (**prerequisite to the admissibility of the applicant**). The applying regulations will be listed in an attached document, and if no national laws or local regulations apply on certain items, H4L CS will define specific requirements based on the best European practices.
- Financial capacity of the client to rule the project and site (budget costs for design, construction and management).

- Dissemination of all relevant information on the project and site to stakeholders.
- Commitment to conduct a survey in all situations (in design, under construction and in operation) (see section 3.2.5).

The **context analysis** will explain how the environment impact both the project (in design or construction phases) and life on the site (for operational buildings). It will contain:

- An analysis of the site (benefits and disadvantages) upon a list of items that shall be adjusted each context.
- An analysis of the role and interactions of local stakeholders upon a potential list of actors.

3.2.4 Requirements

H4L requirements are characterized by their definition and assessment as shown in Table 3. A total of 111 requirements have been defined and are presented in Appendices (section 5.3 to section 5.7).

TABLE 3 – DESCRIPTION OF A REQUIREMENT

Items		Characteristics
Definition	Code	Unique identifier of the requirement. Identifies the place of the requirement in the pyramidal structure. It relates to the cluster, category and sub-category to which it applies
	Title	Short text
	Objective	Text explaining the objective and relevance of the requirement
	Description	Text describing the requirement in detail. Explanations about the requirement, definitions, examples, bibliography, applicable regulations... Taking up the issue and specifying the definitions necessary for understanding and possible caution.
Assessment	Levels	Points, values, ...
	Evaluation	Number, list of choices, yes/no, achieved/not achieved...
	Evidence	Documents, studies, measurements, ... Evidence necessary to validate the achievement of the requirement
	Applicability	In terms of life-cycle phases, occupancy situations and building types

Three life scale levels have been considered:

- **Home:** described as the place where one lives permanently, especially as a member of a family or household.
- **Immediate environment:** direct surroundings of the building where the home is located. It can be the surroundings of the house in the case of individual dwelling or the buildings and what is directly around it in the case of a flat.
- **Neighbourhood:** area where daily life occurs (contacts with other people, shops and services, leisure, etc).

For the requirements, the assessment method was generally based on design specifications (quantitative evaluation) and features (qualitative evaluation).

Specific attention has been paid to:

- Cover at least all the categories identified in the taxonomy.
- Be relevant for the expected certification objectives.
- Where possible, be based on findings from academic research.
- Be verifiable by feasible evidences (available documentation, self-evaluation, surveys and interviews, ...) and at reasonable cost.

In consideration for the heterogeneity of contexts and difficulty in predicting all situations, two options may be operated by the client for requirements and/or question:

- **Non applicability:** a “not applicable” option has been provided on a limited number of requirements during the evaluation phase. This option should be justified by a specific context and later validated by the auditor.
- **Principle of equivalence:** a requirement whose issue remains valid, but whose application proves impossible because it is not suited to the operation or its context, remains applicable through the proposal of a Principle of equivalence. This consists for the client in proposing, by justifying it, an alternative evaluation method, based on evaluation criteria other than those of the certification scheme, but responding to the same concern. This principle gives flexibility to the certification scheme.

3.2.5 Surveys

If the requirements allowed us to deal with qualitative and quantitative indicators, the evaluative indicators are mainly dealt with through residents' surveys. These surveys therefore make it possible to collect people's perception on the quality of their living environment.

A survey among the current residents is compulsory in buildings in operation and strongly recommended (among the future residents) for buildings in design or under construction. The survey allows response collection methods to be varied according to the phase and residential context (questionnaire, or representative panel, or focus group, etc.). For instance, this will allow the survey to be conducted even if the current residents are not able to answer the questionnaire by themselves or if the future residents have not yet been specifically identified.

Through the surveys, the evaluation of life on the site by its (future) residents is one of the key aspects of H4L. Results will be published and disseminated among residents and to stakeholders if relevant.

Questionnaires for surveys are to be found in Appendix 5.8. Statements are proposed to residents who will select the appropriate answer among 5 (Likert scale: Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree). The number of questions (or statements) is different for sites in operation (47 potential statements) and sites in design or under construction (45 statements). Use of a Likert-scale was selected

over simple “Yes/No” responses to allow for greater nuance in responses and to facilitate collective modes of response collection such as focus groups.

During the Management phase and prior to processing the survey to the residents, the client and the auditor shall consider by mutual agreement:

- the questions that are not applicable on the grounds of the type of residence.
- the appropriate way to conduct the survey (individual questionnaires distributed to the residents, focus groups under the supervision of carers, ...).

The way in which the survey is conducted should be kept fairly open, in order to best meet the needs of the site (e.g., what is feasible and appropriate to the situation). It is recommended, though, that a minimum of half of the residents be questioned in the survey process.

3.3 Scoring and award system

3.3.1 Scoring

The general scoring system allows rating of two levels: one intermediate score for each of the five clusters and the survey, and one final score (Figure 9).



FIGURE 9 – GENERAL SCORING SYSTEM

The clusters amount to 80% of the final score and the survey 20%.

Considerations for the scoring system were as follows:

- Conceptual: the main aim of the H4L CS was to cover those home functions not well served by existing CSs
- Practical: the number of requirements in each cluster.

This hypothesis for a “context neutral” weighting has been validated upon the test phase (see section 4). Resulting scores are illustrated in the graph (Figure 10) and the Table 4 below.

As the residents' survey is compulsory in the assessment process, the final score of an assessment which doesn't include a survey will be limited to 80% of the potential score.

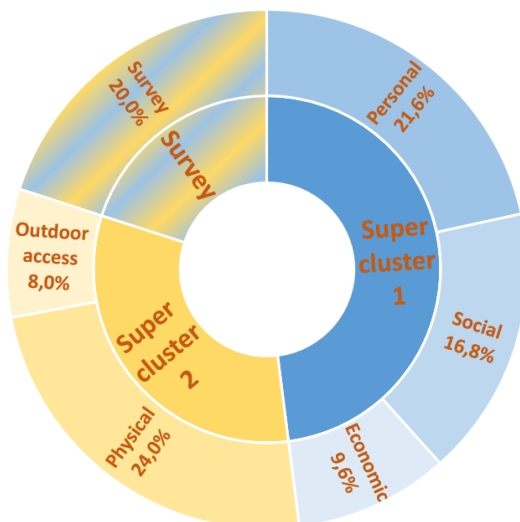


FIGURE 10 – FINAL SHARE PER CLUSTER AND SURVEY

TABLE 4 – DETAILED SHARE OF THE CERTIFICATION SCHEME FINAL NOTE

H4L Certification scheme		Super cluster		Cluster and survey		Category	
100%	80%	60%	SUPER CLUSTER 1	45%	2 – PERSONAL	50%	2.1 Identity and emotional connectivity
						50%	2.2 Privacy and dignity
				35%	3 – SOCIAL	75%	3.1 Social activity
						25%	3.2 Employment
				20%	4 – ECONOMIC	75%	4.1 Affordability
						25%	4.2 Choice
		40%	SUPER CLUSTER 2	80%	5 – PHYSICAL	20%	5.1 Personal Safety
						20%	5.2 Comfort
						20%	5.3 Accessibility and orientation
						20%	5.4 Health and social care
						20%	5.5 Smart readiness
				20%	6 – OUTDOOR ACCESS	33,3%	6.1 Home and building
						33,3%	6.2 Immediate environment
						33,3%	6.3 Neighbourhood or village
	20%	100%	SURVEY	100%	SURVEY	-	-

Points are allocated both to requirements and surveys. The **calculation method** is as follows:

- For the clusters:
 - For each category, a total number of points is determined according to the building phase, situation and type.
 - The sum of points obtained at the category level is weighted by its share of the cluster, and then on until the super cluster., **To ensure that no cluster is overlooked or bypassed, a mandatory achievement of a minimum percentage of 20% of the points is necessary to be certified.**
- For the survey:
 - The answers are summed up and divided by both the number of respondents and the maximum possible score.
 - The resulting figure is weighted by its share of the final score.

The final score results from the sum of the percentages at the super cluster levels and the survey.

3.3.2 Award system

A **certificate** is issued if the assessed building obtains a final minimum score of 60%.

In addition, a qualification report – provided to the client – will detail and illustrate the level achieved (qualification of results, radar graph, etc.) and present the strengths and weaknesses of the operation. The qualification levels are as follows:

- Good practices ($\geq 60\%$)
- Very good practices ($\geq 75\%$)
- Best current practices ($\geq 90\%$)

Neither the score nor the qualification appears on the certificate. The certificate is illustrated in Figure 11.



FIGURE 11 – HOMES4LIFE CERTIFICATE

3.3.3 Scoring and award for residential complexes

Residential complexes are a specific case in which several buildings are assessed. Therefore, several options may be proposed according to the client's needs:

- A score, an award with its qualification for each building.
- A score, an award with its qualification for the whole complex.
- Mixed options.

These options will be discussed and settled during the Management phase.

4 Quality and validation process for the Homes4Life certification scheme

4.1 Quality and validation process

A quality and validation process was defined to ensure the applicability of the CS, with the following steps:

- Test of the CS on a panel of pilot buildings representing most of the different possible contexts, in terms of typologies of buildings, countries, types of owners.
- Validation of the CS with experts and stakeholders involved in age friendly housing.

Therefore:

- Between April and October 2020, a series of tests have been conducted on a set of 12 buildings distributed over 10 pilot sites, recruited in different EU countries. The tests were based on the first version v0 of the CS implemented on the digital platform called ISIA (Innovative, Sustainable, Interactive Application) currently used by CER to host and centralise its whole portfolio of certification, benchmarking, and evaluation services. In parallel, upon these tests, this v0 version of the CS has been presented to expert board, to get their feedbacks on the requirements and the assessment method. This round of feedback led to v1.
- A wide-spread call for comments on v1 of the CS was published and disseminated to all Col members in November 2020, organizations and contact points identified during the earlier phases of the project, all H4L supporting organizations and to members of relevant European associations, including those represented in the H4L consortium (AGE, EUCA, ECTP). Based on received feedback, the v1 of the scheme was adapted where required to lead to this final version. The feedbacks from stakeholders concerned all parts of the CS: requirements, assessment method, scoring, auditing process, duration of the certification, price, etc.

4.2 Test phases in the pilot sites

4.2.1 Selection of the pilot sites

The pilot sites were selected upon the following set of criteria:

- Socio-geographical area: Northern Europe, Central Europe, Southern Europe, British Isles,
- Building typology: individual, collective,
- Organization: social housing, other,
- Phase: in design/under construction, operational.

Considering the difficulty to get a fully representative set of sites according to these criteria, and the need for appropriate auditors among the H4L partners, the search focused mainly on Belgium, the Netherlands, Ireland, France, Italy, Spain and Poland. Ten pilot sites (details

in Table 5 below) have been selected and twelve building perimeters/operations were assessed against v0 of H4L CS (see Figure 12):

- Seven buildings in design phase were tested between April and July 2020. A survey among the future residents was performed in one of them.
- Five buildings in operation were tested during the last months of 2020. Residents' surveys were performed in all these sites.

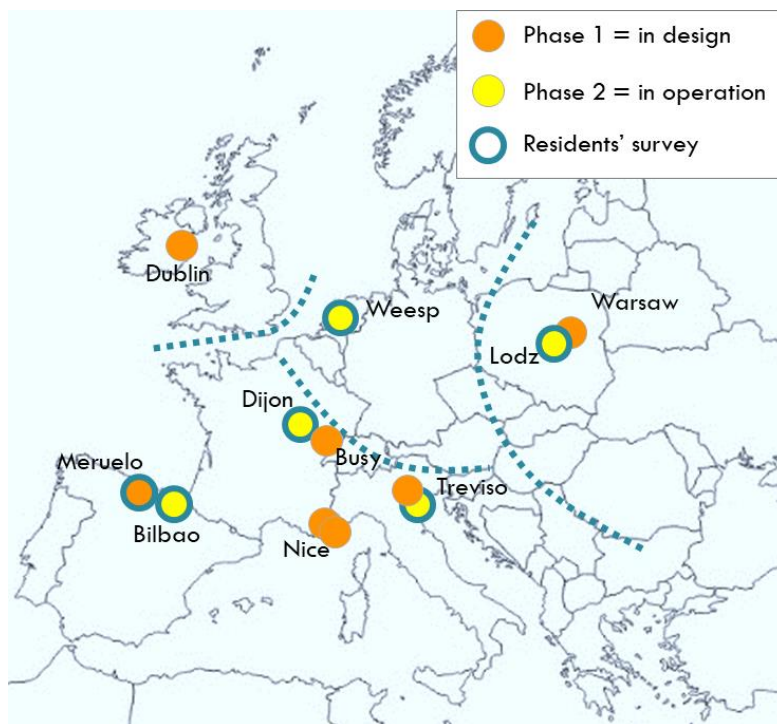


FIGURE 12 – PILOT SITES

4.2.2 Tests

The tests performed with the contribution of the different pilot sites aimed at validating both the contents of the H4L CS and the auditing process. Due to the Covid-19 pandemic occurred from March 2020, most of the assessments were conducted via virtual meetings.

Supportive organizations were associated in the H4L CS building process. A Registration and Commitment form defined mutual commitments during the test phase, from the pilot project holders and H4L partners. There were mainly three phases of interactions: 1. registration, 2. data collection and tests, and 3. feedback.

TABLE 5 – INFORMATION ON PILOT SITES

Country	Pilot site	Perimeter		Certification characteristics of the buildings		
		Building / operation	Client	Phase	Situation	Type
France	Busy (near Besançon)	Résidence Kalia	A2L Seniors	Design	New	Collective
	Neuilly-lès-Dijon	Village Senior Alice et Victor	Alice et Victor	Operational	Existing	Collective
	Nice Méridia	Pôle multi-accueil - Résidence autonomie	CCAS de Nice	Design	New	Complex
		Pôle multi-accueil - EHPAD		Design	New	Complex
Ireland	Dublin, Inchicore	St. Michael's Estate, Site 1B	CVHA	Design	New	Complex
Italy	Treviso, Borgo Mazzini SC	Casa del Chiostro	ISRAA	Design	New	Collective
		Secondo stralcio		Operational	Existing	Collective
Netherlands	Weesp	De Hogeweyk	Vivium Zorggroep	Operational	Existing	Complex
Poland	Lodz	Multigenerational House	City of Lodz	Operational	Existing	Collective
	Warsaw	At Home Despite the Age	Fundacja Mimo Wiek	Design	New	Collective
Spain	Meruelo, Cantabria	Brisa del Cantabrico	Cooperativa Brisa del C.	Design	New	Complex
	Bilbao, Biscay	Etxegoki	Diputación Foral de Bizkaia. Fekoor	Operational	Existing	Collective

4.2.3 Feedbacks from tests in the pilot sites

Overview

The pilots provided feedback on the certification scheme and the assessment process through different means: evaluation forms, comments made on the ISIA platform and freeform interchanges.

The global approach of the H4L CS was very much appreciated and welcomed as a move toward age-friendly housing. Though, its complexity was stressed by many, and questions arose whether it was possible to fit a very wide range of housing situations within a sole certification scheme. Some pilots call for a simpler scheme, while others felt appropriate its level of detail.

Several pilots note an increased awareness of age-friendly housing issues and growing demand for certification/quality assessment and see value in the Homes4Life scheme as potentially providing a quality mark and a benchmark. Thus, H4L CS may help to stimulate innovation in the projects, and some pilots thought that an early use of the certification scheme could have an impact on improving planned projects or projects in design. Several pilots put forward that certification schemes can help promoting a project and reassure people with a minimum quality standard. Involvement of other stakeholders should be valued to improve the scheme, especially in the social perspective.

More detailed feedback could be organised in 4 main categories: survey, platform, assessment process and outcomes, content of the certification scheme.

Survey

Surveys are considered valuable by the pilots as they allow for a direct collection of (current or future) residents' view on the operation. It is why pilots engage in making surveys compulsory or having them generate bonus points in design phase. Main issues raised on the surveys concerned:

- The applicability of the questions in diverse situations or contexts.
- The language, e.g. the question wording.
- The people who can answer, especially in sites where the residents may have impairments such as strong dementia.
- The scoring scale considered much too simple and arguing for a Likert-type scale.

ISIA platform

Feedback was generally positive on the ISIA platform, which was considered quite intuitive to use. However, pilot sites noted several areas where improvements could be made:

- Explanations provided are too technical or specialised, which may impair a self-assessment.
- Immediate feedback on scores would be nice.
- Presentation of results could be more intuitive.
- Questions on what is exactly performed in the stakeholders' analysis (management phase).

Assessment process and its outcomes

Many questions arose relating to the assessment itself. For instance:

- Pilot sites were critical of the "medals" system used in the initial version of the CS. It was felt that a Platinum, Gold or Silver medal is not very informative in clarifying which aspects of a project specifically contribute to its quality and value. In particular, pilot sites would appreciate an outcome score that would better indicate which performance areas could be approved and how.
- The quality that can be achieved in a project depends on multiple factors, not all of which are currently addressed in the CS. Examples given by pilots include price range (both for the dwelling as a whole, and for any specific adaptation or refurbishment for which certification is sought), constructive or technical building

characteristics that constrain which age-friendly adaptations can be implemented and so on. It would be helpful if “peer groups” could be defined so that clients can assess how well or poorly their buildings perform relative to similar buildings.

- Is it realistic to cater for a wide range of schemes, contexts, and target groups in a single CS? Two possible paths to improvement: optimize within current structure or diversify into module?

Content of the certification scheme

Among the main criticisms made to the current CS was the level of detailing, especially in the “hard” categories (mainly in Physical and Outdoor access), sometimes leading to a certain amount of overlapping or redundancy. On the other hand, some “soft” requirements were found to be too vague or hard to interpret or score.

Finally, the compatibility with local, national, or international standards and regulations is a problem in terms of complexity.

On a fundamental level, the questions raised by the pilots were:

- To which extent should a Homes4Life certification scheme include “hard” technical requirements and how?
- Should requirements be included based on importance, even if evidence and evaluation are still problematic? Or should a CS only include requirements that can be objectively verified? How can the balance between these aspects be maintained as the CS is developed further?

These questions could not be fully addressed within the scope of the project. They partly concern the longer-term developmental perspective for the CS. However, they have served as a guideline for the in-project revision of the CS to the final version that is described in this report.

4.3 Call for comments

Feedback from the pilot sites was used to prepare proposals to the Col for the improvement of the certification scheme.

More than 40 persons attended the webinar organised as an interactive call for comments on the H4L CS. During the presentation of the current version of the CS and feedback from pilots, the audience could participate to a poll with a set of 21 questions (about one-half answered the questions) and were subsequently asked to react to a Q&A session.

The poll results (see Table 6) and subsequent feedback for the audience have led to the development of an improved version of the CS. Proposals for improvement are detailed in section 4.4.

TABLE 6 – POLL RESULTS FROM THE CALL FOR COMMENTS

Questions	Occurrences
Q1 To which stakeholder category do you belong?	22
R&I institutes/ Construction or ICT industry	5
Service providers (health, care, insurance, digital, ...)	5
Representatives of older adults and/or carers	4
Local/regional authorities	3
Other	3
Architect/design/urban planners	2
Q2 Are the definitions of residential building types clear enough for you?	20
Yes	19
No	1
Q3 Do the proposed perimeters represent the majority of your residential environments?	18
Yes	16
No opinion	2
Q4a Are the different phases of the auditing process adapted to your needs?	20
Yes	15
No opinion	3
No	2
Q4b Would it be useful to make an assessment of a construction project, while it is still at its planning stage (before design)?	20
Yes	17
No opinion	2
No	1
Q5 For you, the validity period of the certificate proposed at each phase is:	21
Too short	15
Adequate	6
Q6 Which of the Homes4life clusters do you think are the most relevant to achieve the vision? Choose 1 or 2 answers.	23
Social	10
Personal	7
Physical	4
Economic	2
Q10a Do you agree with the weight assigned to each cluster?	18
No	12
Yes	5
No opinion	1
Q10b If not, would you give a higher weight to the...? (choose 1 to 3 answers)	18
Physical cluster	6
Economic cluster	4
Outdoor access cluster	4
Personal cluster	3
Social cluster	1
Q7a Would it make sense to provide or perform a SWOT analysis for the site analysis and the stakeholders' involvement during the Management phase?	21
Yes	15
No opinion	4
No	2
Q7b If yes, should points be allocated for performing this SWOT analysis?	21
Yes	13
No opinion	5
No	3

Questions	Occurrences
Q8 Considering the complexity of the topics covered by age-friendly housing, how many requirements could we reasonably include in the whole certification scheme?	24
50 to 100	16
≤50	6
>200	2
Q9a Do you consider appropriate to include residents' perspective through surveys in the assessment process?	22
Yes	20
No	1
No opinion	1
Q9b What percentage of the residents (of the whole site) should be interviewed to be able to include the surveys in the assessment process?	22
>50%	10
25-50%	6
≤25%	3
No opinion	3
Q9c Is it useful to organize a survey with the future residents for construction projects that are still in the design/planning phase?	22
Yes	15
No	4
No opinion	3
Q11c What overall weighting should we attribute to the survey of residents?	21
Over 30%	7
20% to 30%	7
10% to 20%	6
≤10%	1
Q11a Do you agree with the scoring system (Platinum, Gold, Silver, Bronze)?	21
Yes	15
No	4
No opinion	2
Q11b Should Platinum be accessible only in the Operational phase (with Design and Construction phases limited to Gold)?	21
Yes	13
No	6
No opinion	2
Q12 In the case of a site composed of several buildings, what kind of rating system would you prefer?	22
Both	9
One score per building	9
One score for the whole site	4
Q13a How much time is it reasonable to spend on the assessment?	20
≤40 hours	12
40-60 hours	6
>60 hours	2
Q13b For you, how much money is it reasonable to spend on the assessment of each phase (in design, under construction, operational)?	20
≤3000€	12
3000-5000€	6
>5000€	2

4.4 Improvements between versions

A dedicated working group of H4L partners was organised to implement the improvements of the certification scheme based on feedback and proposals from pilots and stakeholders. Below are listed the changes made from the first to the final version of H4L CS.

4.4.1 Principles

Building types and perimeters

There was some confusion about the Building types (Individual house, Collective building, Residential complex) and the perimeters that were assessed. Therefore, two changes occurred:

- Building types: keep two cases only > "Individual house", "Collective building".
- Add a new category called Perimeter, considering four items: a "Single house", a "Single collective building", a "Single flat in a collective building", a "Residential complex".

Furthermore, rules of sampling and duplication have been written to simplify the assessment workload.

Occupancy situations

The Building situations (New and Existing) were considered unclear. Two changes were made:

- Rename Building situation into Occupancy situation
- Rename New into "Not yet in use" and Existing to "In use".

Life-cycle phases

A 3rd phase, "Under construction", is added between "In design" and "In operation" for buildings in works (construction, retrofitting, renovation or rehabilitation). There was a debate about the opportunity to add an earlier phase before the design of the operation (Planned). In fact, if a need has been expressed by some pilots and stakeholders for assistance in projects while they are still at a planning stage, an assessment at that stage doesn't seem appropriate. An extra module could be an excellent idea for a potential improvement of the scheme, but it cannot be done within the time frame of the H4L project. Before it is done, potential clients could use existing tools, like the proposed Context analysis in the Management phase and the residents' survey, to help them defining their project.

Changes that occurred:

- Rename Building phase into Life-cycle phase
- Three phases are included: "In design", "Under construction" and "In operation"

Certification process

Participants to the Call for comments claimed for a longer validity period for the H4L certificate. In fact, in the residential field, a 24-month time span seems very short and continuous assessments may be very unattractive, especially when the site is in operation. Moreover, there is no legal basis in the field of age-friendly housing that would impose such a pace, as it is in other fields like environmental quality.

Proposed extension of the validity period are as follows:

- Buildings in design: unchanged (until delivery of the building).
- Buildings under construction: time span doubled from 24 to 48 months.
- Buildings in operation: time span multiplied by 2,5 (5 years after last assessment instead of 2 years).

4.4.2 Structure

The current hierarchical structure has been simplified and the subcategory level has been removed. Indeed, if subcategories were necessary to specify the fields of an AFE and the KPIs, keeping this level in the CS complexified the scheme, generated redundancies and led to duplication of requirements. As a consequence:

- The new hierarchical structure comprises clusters and categories.
- Requirements will be directly linked to categories.

Management phase

A need was expressed to clarify objectives of items of the Management phase. The Management phase should both deal with the compatibility with numerous national and local standards, and with the local context for which a SWOT analysis could be considered. Therefore, the 4 previous items have been reduced to 2:

- A Commitment document to comply to national regulations and engage in performing a residents' survey.
- A Context analysis merging Site analysis and Stakeholders' involvement.

Requirements

Criticisms made to the current list of requirements called for a large review, including working applicability, simplification and overlapping. The objective was to reduce the number of requirements by half to about 60 requirements for super cluster 1 and 40 for super cluster 2. In the Physical cluster, many regulations were transferred to the Management phase (compliance with the rules). Moreover, reduction of the number of requirements could be done through the suppression of subcategories.

As a consequence, the number of requirements has been reduced by 42% (56 in super cluster 1 vs 85 and 55 in super cluster 2 vs 107). Further simplification may be brought with future feedbacks.

Residents' survey

Both pilots and stakeholders favoured a residents' survey in all phases and pointed out the importance of getting people's views on their living environment in a more detailed way. In the new version:

- Surveys are included in the assessment process in all phases.
- The scoring scale has been reviewed to a 5-level one instead of a simple yes/no scale.

4.4.3 Scoring and award system

Scoring

Though stakeholders identified Personal and Social clusters as the best ones to achieve H4L vision, they asked for a higher share of super cluster 2. Besides, all of them agree that the survey should attribute points and that the impact of the survey on the final score would be more easily readable.

Therefore, major changes occurred in the scoring system to make it more in line with their wishes:

- Clusters and survey share respectively 80% and 20% of the final score.
- Results from the survey are no longer dispatched between categories in clusters but have a direct impact at the scheme higher level.
- Super cluster 2 has a larger share in the final version (40% of the final score vs. 30%) and the Outdoor access within super cluster 2 (25% instead of 20%).

Awards

In the first version of the CS, medals (platinum, gold, silver and bronze) were awarded at defined thresholds. The bronze level (between 40% and 60% of the final score) seemed irrelevant and it was decided to delete it. Therefore, a certificate shall be awarded at a minimum score of 60%. Moreover, a majority considered that the higher level (platinum, over 90%) should be accessible only for sites in operation.

In addition, a number of pilots doubted that a medal system could translate the good and the wrong aspects of an operation. This is the reason why an alternative system has been proposed in the final version:

- A certificate will be issued for each assessment with a minimum score over 60%.
- A qualification report will give further information on the level achieved and present the strengths and weaknesses of the operation.

5 Appendices

5.1 Description of clusters and categories

Clusters and categories have been described in D2.4 – Working taxonomy. These texts are reproduced below as they help understanding the concepts behind Homes4Life certification scheme.

TABLE 7 –DESCRIPTION OF CLUSTERS AND CATEGORIES

<i>Clusters and categories</i>	<i>Description</i>
2. Personal cluster	<p>In this cluster of the taxonomy there is a marked disconnect between on the one hand the policy and research literature, and on the other hand the world of label, certification, norms and standards.</p> <p>The importance of the home environment to people's emotional well-being, sense of anchoring and sense of self is well-attested. The home is an important part of who and what people are, and this importance increases with age, as people spend more time in their home (up to 90% of the time in the "oldest old" i.e. those over 85 years of age), and as memories centred around the home continue to accrue. Sense of identity and emotional connectivity is a contributing factor to people's reluctance to move to a new house and even greater reluctance to leave their neighbourhood. A deep-seated desire to remain in contact and continuity with one's own life history also contribute to this attachment to familiar surroundings. Negative identity associations can apply to adapted and specialised housing and impede people's willingness to contemplate moving to such facilities, quoting motivations such as: "This type of house is "not me""; "This type of house is for "oldies"; or "If I live here, people will believe I'm a "needy old so-and-so". These perceived negative effects on self-worth and self-perception and emotional connection also help explain many people's reluctance to accept adaptations to their current home, or the introduction into the home of assistive technologies. These adjustments carry negative connotations, with people stating that "This means I'm old" or "The house just won't be the same." These identity and emotion-based negative connotations also adversely affect the value people place on home adaptations and hence their willingness to invest in them. Thus, the Personal cluster of home functions, while it may appear "soft" compared to the more tangible elements in the Physical and Outdoor access clusters, has a very tangible effect on the business case for investment. The extent to which the home environment is the subject of positive emotional attachment and its alignment with people's sense of identity, personal history, self-worth and self-reliance co-determines the value placed upon the home environment. For instance, a new build development that fails to take these into account will have a smaller potential market and even people for whom it is in scope may attach lower value to it. The home as a source of identity and emotional connection is also an explanatory factor in people's generally negative response when</p>

Clusters and categories	Description
	<p>adaptations or preparatory measures are framed in terms of coping with future dependencies and health problems. People do not want to think of their future selves in this way.</p> <p>It should be noted that identity and emotional connectivity are not just about safeguarding and preserving historical ties and continuities. Also relevant are the opportunities the home and the environment in which it sits offer for forging a new sense of identity and new emotional connections. This potential for positive redefinition of the self in later life may contribute to the success of self-organized and self-directed community living initiatives. Awareness of the importance of identity and emotional connectivity to the home and living environment may also encourage redevelopment and revitalization of urban and rural central areas, as these are natural loci of emotional attachment.</p> <p>While the research literature and to an extent policy and advocacy are well aware of the importance of the home as a source of identity, emotional connection and self-worth, the current state of play in certification and standards and norms almost completely overlooks this aspect, as evinced most practically by the analysis of existing certification schemes. One of the central challenges for the Homes4Life project, therefore, is to find ways to make this crucial aspect of the home environment susceptible to practical assessment and verification.</p> <p>In defining the content of the Personal cluster of the Homes4Life taxonomy, the theoretical departure points outlined in paragraph 5.1 have been particularly valuable and informative: the SoC from salutogenesis theory maps particularly well, while literature from place making offers not just corroborative material, but also insights how user-led, participatory design and decision making strategies help investment places and spaces with emotional meaning. Gerontechnology has offered insights on how good design of technology for ageing can contribute to higher self-worth and better utilization of technology, and what risks lie in using badly designed technology.</p> <p>Next to the original analysis of literature conducted in February and March of 2019, literature analysis done for the purpose of defining Key Performance Indicators (see chapter 8) and Needs and Preferences (see chapter 7) has produced a great number of relevant studies that have served to confirm the broad structural choices for this Taxonomy cluster as well as to highlight some nuances and additional sub-categories which have been included in the version of the taxonomy presented in this report.</p> <p>The Personal cluster is divided into two categories:</p> <ul style="list-style-type: none"> • Identity and emotional connectivity • Privacy and dignity
2.1 Identity and emotional connectivity	<p>The title of this category is self-explanatory. It deals with those aspects of the home that support, maintain and create positive emotional attachment, support identity and keep people in touch with their former selves. In further structuring the category it has proven most practical to make a division</p>

Clusters and categories	Description
	<p>according to scale, since home characteristics functioning for this purpose tend to operate at one of three scale levels:</p> <ul style="list-style-type: none"> • The home • A larger complex or development (e.g. a communal living facility) if the home is part of such • The neighbourhood or village <p>Relevant elements at the level of the home are its outside appearance, whether or not inside or outside features can be experienced as stigmatizing or “labelling”; to what extent the home environment is perceived as recognizable and relatable by its occupants; and the flexibility the home offers to adapt spatial lay-out, furnishings and amenities to personal preferences and styles, and to be able to continue to do so over the life course of both person and home. Further relevant elements include the presence of dedicated spaces for activities important to the sense of self (e.g. hobbies), and the amount of autonomy and control occupants tend to experience.</p> <p>Relevant elements at the level of the larger complex or development centre around the questions whether occupants feel “at home” there, which involves as elements the mix of dwellings; mix of occupants; the designation or labelling of the complex or development; and the perceived relevance and suitability of on-site functions (e.g. community spaces)</p> <p>Relevant elements at the level of the neighbourhood or village focus on the emotional and/or historical connections the area (re)presents for occupants and the proximity of significant others.</p>
2.2 Privacy and dignity	<p>This category focuses on those elements of the home environment that contribute to a sense of personal freedom, self-worth and decorum. A number of sub-categories has been deduced from the literature as being relevant to this aspect. They are:</p> <ul style="list-style-type: none"> • Control over the degree, nature, time and place of social interaction that occupants engage in • Control over who accesses (parts of) the home and what they are allowed to do there • Control over data collection and management, covering both transparency about what data is collected, and control over adjustments to data collection from situation to situation and space to space • Control over look, feel and furnishings of the home environment • To what extent the home environment offers spaces and times which are wholly private, and where occupants can be totally free from interaction with others if they so desire • The extent to which the home environment offers spatial opportunity for seclusion for the provision of health and ADL care. This is not only relevant for the decorum and comfort of occupants requiring care; this sub-category also comprises spatial opportunities for informal carers to seclude themselves from care processes (e.g. an extra bedroom)

Clusters and categories	Description
	<p>On the basis of the literature analysis for the definition of KPIs and NoPs, two more subcategories have been defined:</p> <ul style="list-style-type: none"> • Long-term security on the (financial) ability to stay in the home environment and/or keep the home environment fit for purpose over the life course. Research into the wellbeing of tenants and low-income homeowners has shown that housing precariousness has a negative effect on health, emotional wellbeing and self-worth • The degree to which the home environment supports self-determination of actions and movement
3. Social cluster	<p>What has been said above for the Personal cluster also substantially holds true for the Social cluster of age-friendly home functions: an extensive base in research, policy and advocacy, but little or no available material in current work in certification, labelling and standards. The challenge is accordingly similar: find ways to translate these insights into terms that lend themselves to practical assessment and verification.</p> <p>Under the social cluster are subsumed all those functions of the home environment that are in some way relevant to occupants' ability to stay socially active. That includes the ability to receive visitors in the home; to maintain existing social networks and find opportunities to build new connections; to engage in social activities of one's own choice and at times and places suited to one's personal needs and preferences; to self-direct and self-organize activity; to satisfy the need for access to both more practical services such as shops as well as to find a supportive environment for immersion in arts and culture, if one's tastes run that way. And functions of the home environment that support people in engaging in meaningful activity and remain a contributing member of society, as this particularly has been shown (for instance in analysis of the so-called "Blue zones") to contribute to better health, better wellbeing, higher resilience in the face of adverse life events and the extent to which people experience their own lives as worthwhile. Social isolation, meanwhile, is a growing problem with a profound negative effect on nearly all relevant aspects of health and well-being.</p> <p>While much of research and policy on social aspects focuses on the primary user group of older people, many of the functions and elements touched upon in this cluster are just as relevant from the perspective informal carers. When it comes to aspects of maintaining involvement in paid or unpaid employment, these latter are the primary beneficiaries. At the same time, it should not be forgotten that for the primary group as well the ability to keep involved in work and work-like activities is of great value in maintaining quality of life.</p> <p>In developing the taxonomy, the Social cluster of home functions has been subdivided into two categories:</p> <ul style="list-style-type: none"> • Social activity • Employment

Clusters and categories	Description
3.1 Social activity	<p>The Social activity category has been further sub-divided into four sub-categories</p> <ul style="list-style-type: none"> • Ability to have social contacts in the home • Proximity to activities and facilities • Ability to find social contacts outside the home • Online connectivity <p>The category of social contacts in the home covers aspects such as: can the home be conveniently reached by others? Is there sufficient parking space? Is the home close to public transport? Is the route from the public transport stop accessible? Is there sufficient space in the home to entertain visitors? Is there a spare bedroom to accommodate overnight visitors?</p> <p>Proximity to activities and facilities describes to what extent the home environment is a suitable base to access practical, social, cultural and hobby services and facilities. Next to formalized social activity, the opportunity to find spaces and opportunities to engage with others informally, without prior plan or organization emerges from the literature as an important component of the home environment in allowing gradual self-directed build-up of social connectivity.</p> <p>The ability to find social contacts outside the home also encapsulates these informal social engagement opportunities, while the extent to which the home's environment is a happy hunting ground for social connection is due in large part to its demographic composition</p> <p>The inclusion of an online connectivity categories recognizes that increasingly, ICT technology and applications play a supporting role in maintaining contacts with friends and family, connecting to social groups and networks and accessing entertainment and activity services.</p>
3.2 Employment	<p>The Employment category has been further subdivided into two sub-categories</p> <ul style="list-style-type: none"> • Suitability of the home as a place of work • Connection to place of employment <p>The sub-category suitability of the home as a place of work describes functions and elements of the home that determine to what extent it can be used as a working environment by its occupants. While not exclusively relevant for informal carers, this perspective shows the clearest need: many informal carers are faced with the need to do all or part of their work from home, or from the home of the person they care for if they live elsewhere themselves. A home environment that supports this contributes to sustainable employment and helps avoid loss of income and social isolation among informal carers. Availability of workspaces and the general lay-out of the house contribute, as do the availability of technical facilities and digital connectivity.</p>

Clusters and categories	Description
	<p>The sub-category connection to place of employment primarily looks the situation of the home relative to place of employment (travel distance) and the presence nearby of suitable accessible transport options.</p>
4. Economic cluster	<p>Including an Economic cluster of functions in the Homes4Life taxonomy makes eminent sense. First of all, the purpose of the Homes4Life project is to stimulate investment in age-friendly homes, for which a structured understanding of the aspects that contribute to the feasibility and attractiveness of such investment is a prerequisite. But economic considerations also more directly co-determine the quality and fitness for purpose of the home environment for ageing in place. This is particularly true for the many older people with lower incomes for whom good quality housing, adequate maintenance and heating are simply out of reach, to say nothing of the costs associated with home adaptations. Age-friendly housing for all requires that appropriate housing is available within price ranges to suit different budgets. For this it is necessary to know what those budgets are and what percentage of income is realistically available for housing costs. Affordability considerations and cost-benefit trade-offs are also instrumental for decision making by both public sector and private sector organisations. Next to objective affordability, the value that the home environment and investments in it represent to both its intended users and those with a stake in making it available, is instrumental in constructing viable investment propositions, so the aspects of the home environment that are relevant to this consideration deserve a place in the Homes4Life taxonomy.</p> <p>In the Economic cluster, money isn't everything. Also relevant are those market conditions that determine to what extent those with different budgets and support needs can choose between different options for the type of home, type of living environment and living arrangement they prefer, the type of neighbours and co-occupants who will form part of their social circle, and the ageing in place technologies and adaptations they do or do not want. Not only choice as such, also the authority to make it and the availability of sufficient information to base it on, are potentially relevant structural elements in the Homes4Life taxonomy.</p> <p>The inclusion of a Choice category in the taxonomy is, admittedly, slightly speculative, because there is not a great deal of material on which to base verifiable characteristics that are directly tied to the home environment as such. It has been included nevertheless, because one of the objectives of the Homes4Life taxonomy is to present a broad and comprehensive overview of functions. From that perspective, Choice certainly qualifies.</p> <p>To summarize, then, the breakdown of the Economic cluster into categories and sub-categories is as follows:</p>
4.1 Affordability	<p>Affordability:</p> <ul style="list-style-type: none"> • Objective affordability • Willingness to pay

Clusters and categories	Description
4.2 Choice	<p>Choice:</p> <ul style="list-style-type: none"> • Dwelling type • Living environment type • Living arrangement type • Neighbours and/or co-occupants • Solutions • Decision-making authority • Choice information
5. Physical cluster	<p>This is a large cluster of functions, which comprises those elements and functions traditionally associated with age-friendliness and ageing in place in a narrow sense. It covers those elements of the home which contribute to the physical safety and comfort of the occupant. These elements tend to be relatively “hard” and tangible: they describe the physical and material characteristics of the home and its infrastructure and built-in and wired-in systems. Perhaps because of their “hard” nature, which makes them comparatively easy to assess, the functions in the Physical cluster feature largely in current labelling, certification, norms and standards and directives. An example is accessibility, for which most EU Member States have national codes or directives.</p> <p>The Physical cluster is a large cluster of functions, which in the taxonomy has been structured into five categories.</p>
5.1 Personal safety	<p>This Category deals with those functions and elements of the home that enable occupants to remain safe and free from harm while dwelling in the home and going about their daily activities. The primary perspective in play for this category is older adults, with the demands made of the home environment becoming more stringent and specific as physical and/or cognitive impairments play a more prominent role. However, personal safety may also be an issue for co-occupants and visitors, as well as for professional operatives entering the home for specific tasks. Co-occupants and visitors may themselves have impairments; professional operatives may have specific requirements from the home environment to make it into a suitable and safe working environment. The Category breaks down into the following sub-categories:</p> <ul style="list-style-type: none"> • Accidents and calamities • Safe use of amenities and facilities • Safety around the home • Safety from outside threats
5.2 Comfort	<p>Comfort concerns the home's ability to create an interior climate that is conducive to health and wellbeing and adaptable to the personal preferences of its occupants. Personalization is important. For instance, while it is well-established in physiology that the ability of the body to generate heat diminishes as we age, there is great variety, not just between genders but between individuals, on what is experienced as a comfortable temperature bandwidth.</p> <p>Some definitions of comfort take a comparatively narrow view, considering only temperature regulation and air quality as being in scope. In the Homes4Life</p>

Clusters and categories	Description
	<p>taxonomy a broader definition has been chosen, that also includes daylight and artificial light quality and acoustic properties, taking “control over the environment” as its central notion. For that latter reason, the functionality of home management systems has also been considered in scope.</p>
5.3 Accessibility and orientation	<p>This category of home functions is likewise very well-established in the literature consulted, and existing certification, and is the subject of a wide range of norms, standards and guidelines at both national and international level. It encapsulates a long list of aspects that have been included in the taxonomy. The central principle of the category is that the functions of the home under this category contribute to people being able to go about their daily business with the maximum amount of freedom and the minimum amount of assistance required and hindrance experienced. This recognizes that intrinsic freedom of movement and action may change over the life course, but that the ambition to achieve a degree of freedom commensurate with personal preferences within that limit stays a constant.</p> <p>Requirements associated with this category of functions encountered in the literature focus variously on the lay-out of the home, design and dimensions of spaces, widths of doors and corridors, lighting conditions, use of contrasting colouring, fixed mobility aids in WCs, bathrooms and bedrooms, positioning and design of home management and communications interfaces et cetera. The list of sub-categories defined under this category is as follows.</p> <ul style="list-style-type: none"> • Getting in and out of the house • Getting around the house • Performing daily in-house activities • Getting in and out of bed • Personal hygiene • Using communications and entertainment features • Doing work or hobbies • Controlling home functions • Orientating oneself in space and time
5.4 Health and social care	<p>Intermittently over the course of our lives, more often and sometimes chronically as we age and/or impairments start to play a role, the home becomes and environment for care. How well it functions in fulfilling that function plays a major role in determining the extent to which people who experience health problems can continue to age in place. A logical element of the home contributing to its fitness for purpose is its location relative to community level health services such as GP, pharmacy and other community based and primary care services. Accordingly, proximity to services has been included as a sub-category, with the items just mentioned belonging in it.</p> <p>ICT-based alternatives to physical care delivery play an increasingly prominent role, hence the importance of the home environment's options and facilities for eHealth and remote medicine. But when health problems are more serious, the physical home environment must function as a fit for purpose care environment, which necessitates facilities for care provision in the home. Items listed under this sub-category in the taxonomy are sufficient space for manoeuvring and</p>

Clusters and categories	Description
	<p>assistance; and availability of assistive apparatus (this may include ceiling hoists in some types of specialized housing). Perhaps less immediately obvious, but definitely important for health care professionals working in the home environment are the items safety and capacity of electrical and ventilation systems and safety of the working environment for the professionals involved.</p>
5.5 Smart readiness	<p>While non-fixed ICT-based products and ICT-services are outside the Homes4Life scope, a number of framework conditions apply to determine whether the home can function as a base for deployment and utilization of these products and services. These framework conditions have been included in the Smart readiness category.</p> <p>It has been decided to include smart readiness under the Physical cluster for two main reasons. On conceptual grounds, most of the products and services enabled by smart readiness of the home serve purposes included in the Physical cluster (safety, monitoring, operating comfort systems, health care and health monitoring). On a more practical level for certification purposes, smart readiness features are “hard” home environment features which lend themselves to assessment in conjunction with other tangible home functions and components. The list of sub-categories included under Smart readiness is</p> <ul style="list-style-type: none"> • Wireless and wired connectivity • Network infrastructure and interoperability • IT infrastructure and API's • Digital security and data protection
6. Outdoor access	<p>This is a much more compact cluster than the Physical cluster. Its importance in determining the quality, fitness for purpose and material and immaterial value of the home environment should not be underestimated. The quality of the outdoor environment is a central component in the WHO Age-Friendly Cities framework, and there is an extensive body of research and guidance in architecture, urban design, psychology and health to substantiate that the ability to be outdoors, in an environment that is independently accessible and that is experienced as attractive and safe by its users, contributes to health, wellbeing, and perceived quality of life. The importance of green spaces has been a topic of particular interest in urban design and landscaping, but the quality of outdoor spaces may also pertain to urban interests, to variety, to views and interaction with human activity, and even with the influence as such of being exposed to outdoor conditions such as fresh air and daylight. The outdoor access cluster breaks down into three scale-levels, which have been included as categories: the home and building, the immediate environment, and the neighbourhood or village. Given the Homes4Life scope, the higher scale levels will be viewed from the perspective of the home, with its functions primarily defined as its proximity to outdoor environments.</p> <p>It should be noted that the Outdoor access cluster pertains to the <u>physical</u> aspects of the home's outdoor spaces and wider outdoor environment. It does not include the network of social connections, services and activities that</p>

Clusters and categories	Description
	constitute the social environment of the home. This latter aspect is covered under the Social cluster of the Homes4Life taxonomy.
6.1 Home and building	At the level of the home and building, outdoor access pertains both to the availability, accessibility and privacy of outdoor spaces such as gardens, balconies and patios, as to the views available from the living areas in the home environment.
6.2 Immediate environment	Both at the level of the immediate environment and the neighbourhood or village, main determinants are accessibility, attractiveness and social safety. Attractiveness is variously associated with maintenance level, the presence and quality of street furniture, cleanliness and the absence or presence of graffiti, presence and maintenance of greenery, the architectural quality of surrounding buildings and protection from the elements.
6.3 Neighbourhood or village	

5.2 Management phase

5.2.1 Commitment document

The following document will collect the client's involvement in the assessment process and is a prerequisite to the admissibility of the applicant.

Entity asking for certification	Name and location	
	Name and function of signatory person	
Audited operation	Building name	
	Building location	

We, the undersigned, hereby certify that:

☐ **The audited operation complies with all relevant national and local regulations.**
We are aware that this is a pre-requisite to the eligibility into the certification process.

Please declare the regulations applicable to the building	Level			Building	
	European	National	Local or Regional	New	Existing
ACCESSIBILITY					
Indoor					
Outdoor					
....					
SAFETY					
Fire protection					
Air quality					
Construction Materials					
Safety of use (Inside/Outside/Parking areas/...)					
...					
INDOOR COMFORT					
Acoustic					

HVAC					
Thermal comfort					
Lighting					
...					
ENERGY EFFICIENCY					
Thermal insulation					
Technical Regulations of Electrical Installations					
Sustainability					
...					
E-HEALTH					
...					
DIGITAL SECURITY AND DATA PROTECTION					
General regulations	GDPR				
...					
IT OPNENNESS					
...					
AFFORDABILITY					
Rent control	Housing Act				
...					

If no regulation is applicable on any of the above items, then see in Appendix 5.8 the characteristics that may be considered.

☐ **All the necessary resources and means are implemented**, to achieve and rule the operation according its objectives and including the allocated budget.

☐ **The entire certification process will be conducted** (Context analysis, Requirements and Survey).
We are aware that, if the survey cannot be performed, the final score will be limited to 80% of its potential.

We engage in:

☐ **Disseminating this Commitment letter to all stakeholders** directly involved in the operation, as listed below (see 'Involvement of stakeholders').

☐ **Referring to this document in terms of overall performance** of the operation at all stages.

Date and signature:

5.2.2 Context analysis

Site analysis list

The following list of potential items should be adjusted to the context and to the availability of data. It can be collected at different local levels (neighbourhood, municipality, ...).

<p>Physical environment and site location</p> <ul style="list-style-type: none"> • Description of geographical location and natural landscape • Type of environment (urban, rural) • Building orientation (thermal comfort, e.g. dominant winds in winter, sunrays in summer, lighting comfort, acoustic comfort) • Road traffic and environmental risks (for their impact on outdoor/indoor air quality and noise insulation) <p>Mobility</p> <ul style="list-style-type: none"> • Road network: density, hierarchy and use (automotive, pedestrian), road conditions and walkability • Public transport network: lines, vehicles and stops; frequency and schedules; affordability • Private transport: supply and affordability • Bike renting service, ... <p>Population and socio-economic characteristics</p> <ul style="list-style-type: none"> • Age composition • Family composition • Ethnic background / migrant population • Education • Revenues 	<p>Shops, services and amenities</p> <ul style="list-style-type: none"> • Basic shops: food and drink / bakery, pharmacy, bookstore, ... • Other shopping and commercial centres • Culture, leisure and recreation: library, museum, theatre, cinema, ... • Restaurants and bars • Sport areas, indoor and outdoor • Parks, gardens and green spaces • Benches in public spaces • Medical and health services • Home delivery services • Community group associations and services <p>General and age-friendly housing</p> <ul style="list-style-type: none"> • Housing market • Private and public offer • Purchase and renting cost • Financing mechanisms to facilitate home ownership <p>Age-friendly policies</p> <ul style="list-style-type: none"> • Programs for increasing accessibility, safety and adaptability of housing • Home employment • Formal carer services • Informal carer support • Emergency Preparedness Plan
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Needs, perspectives and involvement of stakeholders

Below is a list of potential relevant key stakeholders. This list should be adjusted to the context and especially the life-cycle phase (in design, under construction, in operation). The needs, perspectives, roles and involvement of each identified stakeholder must be described as thoroughly as possible.

<p>End users</p> <ul style="list-style-type: none"> • Future residents • Current residents <p>Government:</p> <ul style="list-style-type: none"> • National government • Regional or local governments <p>Care providers:</p> <ul style="list-style-type: none"> • Health and social care providers • Social and public housing providers • Informal carers <p>Planning and building industry:</p> <ul style="list-style-type: none"> • Project developers and investment companies • Construction and installations 	<p>Service providers:</p> <ul style="list-style-type: none"> • Financial organizations • Health insurance companies • Insurance companies • Innovative services (e.g. digital services) <p>Community groups and services</p> <ul style="list-style-type: none"> • Sport and leisure associations • Other associations (culture, entertainment, etc.) • Grassroots organisations • Neighbourhood
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5.2.3 Table of actions

Applicability: De = in design; Cs = under construction; Op = in operation; Ny = not yet in use; Us = in use; In = Individual house; Co = collective building

TABLE 8 – ACTIONS FOR THE MANAGEMENT PHASE

Category	Requirement				Scoring		Evidence		Applicability						
	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
1.1 Commitment document	1.1.1	Commitment	The entity asking for certification must commit. This commitment is formalised in a document signed by the top management of this entity.	The Commitment document is present and signed by the Client	Yes/No	0	Commitment document signed (reviewed if necessary), evidence of dissemination of this commitment to stakeholders involved in the operation	Commitment document signed (reviewed if necessary), evidence of dissemination of this commitment to stakeholders involved in the operation	x	x	x	x	x	x	x
1.1 Commitment document	1.1.2	Residents' survey	Collect current or future residents' perception upon the quality of the living environment.	The Residents' survey has been performed.	Yes/No	0	Survey report	Survey report	x	x	x	x	x	x	x
1.2 Context analysis	1.2.1	Site analysis	List the benefits and disadvantages of the building/site and its environment	The Site analysis has been performed.	Yes/No	0	Site analysis report	Site analysis report	x	x	x	x	x	x	x
1.2 Context analysis	1.2.2	Needs, expectations and involvement of stakeholders	Identify and describe the role and involvement of local stakeholders in the project and/or on life of the site.	The Involvement of stakeholders has been formalized in a document.	Yes/No	0	Report on local stakeholders	Report on local stakeholders	x	x	x	x	x	x	x

5.3 Personal cluster: table of requirements

Applicability: De = in design; Cs = under construction; Op = in operation; Ny = not yet in use; Us = in use; In = Individual house; Co = collective building

TABLE 9 – REQUIREMENTS FOR THE PERSONAL CLUSTER

Taxonomy		Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co	
2.1 Identity and emotional connectivity	2.1.1	Home environment promotes creation of informal support networks e.g. neighbours, and sense of safety and security is reassured	Home environment provides reassurance and sense of safety through existence of common and shared spaces e.g. common room for meal taking, communal laundry, shared gardens and patios.	There are common and shared spaces in the neighbourhood, e.g. common room for meal taking, communal laundry, shared gardens and patios.	Level 1	0	Plans	On-site visit, plans	x	x	x	x	x	x	x	
				Level 2	2											
				Level 3 (4 points): Yes, in the vicinity (closer than 400m or within a 10min walk)	Level 3	4										
2.1 Identity and emotional connectivity	2.1.2	Space for deployment of personal history objects	Home environments for people with mild cognitive impairment (MCI) or early-stage dementia must offer room for deployment of material objects that reflect personal history and/or serve as symbolic links to valued relationships.	Possibility to deploy material objects that reflect personal history and/or serve as symbolic links to valued relationships	Level 1	0	Plans	On-site visit, plans	x	x	x	x	x	x	x	
				Level 2	2											
				Level 3 (4 points): Yes, no limit at first glance	Level 3	4										
2.1 Identity and emotional connectivity	2.1.3	Availability of places and features for personalization of home environment	Place identity (a dimension of place attachment), the home environment must provide spaces and design features that enable personalization of the home environment, reflecting the occupants' personal history, sense of self, tastes and preferences	Presence of spaces and design features that allow customization to suit personal history and preferences (display spaces, front or back porch, common rooms, ...)	No	0	Plans, internal rules	On-site visit, internal rules	x	x	x	x	x	x	x	
				No (0 point)	4											
				Yes (4 points)	Yes											
				References: Lies et al find that design features associated with personalization are: * Individual home display spaces * Individual home front porch * Individual home back porch * Wild and raised flowers * Common house dining room												

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<i>Bergland et al (2015) note the importance of both personal historical continuity (the home as a place and reminder of past experience), and personal + personalized space, as well as stress and anxiety at losing these resources in the case of moving home. By inference, a new home environment that allows customization to suit personal history and preferences will help avoid loss of the sense of self and identity, as well as contributing to emotional wellbeing.</i>											
2.1 Identity and emotional connectivity	2.1.4	Personalization of kitchen spaces	To preserve their function as a locus for emotional attachment and personal identity, kitchens must allow personalization of design, equipment and processes to reflect occupants' lived experience	Kitchen spaces may be adapted to the wishes of the occupants (materials, location of machines and other equipment, etc.). No (0 point) Yes (4 points)	No Yes	0 4	Options offered by designers	On-site visit	x	x	x	x	x	x	x
2.1 Identity and emotional connectivity	2.1.5	Opportunities for meaningful social activity	The home and its immediate environment should offer opportunities to engage in meaningful social activity	Existing space within the home to receive other people for social gathering (such as a living-room or lounge/activity room) without rearranging furniture No (0 point) Yes (4 points)	No Yes	0 4	Plans	On-site visit, plans	x	x	x	x	x	x	x
2.1 Identity and emotional connectivity	2.1.6	Easy and affordable access to various community services or support measures that enable "ageing-in-place"	For cohabiting family member (spouse, child, other relatives) to a person who is care dependent (e.g. due to age, disability or disease) and has substantial care needs, they are able from their home to access necessary support to alleviate the burden of care e.g. access to information, access to respite care, access to financial support; access to psychosocial services; support groups	For cohabiting family member, it is possible from the home environment to get information about available support or community services that facilitate ageing in place, such as: Respite care and day care services; Psychosocial support; Peer support or self-help groups; Financial support (allowances) for care dependent person or the informal carer; Access to information or training or volunteering. Level 1 (0 point): No supportive community services for care dependent persons and their family members Level 2 (1 point): Some existing services, but not easily accessible and affordable Level 3 (4 points): Some existing services, accessible and affordable Level 4 (8 points): Supportive community and services available for family carers and the care-dependent persons	Level 1 Level 2 Level 3 Level 4	0 1 4 8	Site analysis	Site analysis, on-site visit	x	x	x	x	x	x	x
2.1 Identity and emotional connectivity	2.1.7	Home offers dedicated space for pursuing activities for self-fulfilment and social engagement.	Home should offer dedicated space for pursuing activities for self-fulfilment and social engagement. Specifically, the home environment must offer adequate spatial provisions for pets, hobbies, socializing and storage. Where homes have	Existence of spatial provisions for self-fulfilment and social engagement (pets, hobbies, socializing and storage). Level 1 (0 point): no space or room available Level 2 (2 points): existing space, but not for all the	NA Level 1 Level 2 Level 3	0 2 4	Plans	On-site visit, plans	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
			multiple occupants, the home should be able to cater for the preferences of each occupant Research shows that the ability to pursue these activities in the home contributes to positive perception of the home environment and contributes to perceived agency in ageing healthily	occupants Level 3 (4 points): each occupant can benefit from a personal and private space											
2.1 Identity and emotional connectivity	2.1.8	Home environment allows views of and interaction with nature	To contribute to Nature bonding (dimension of place attachment), the home environment must provide spaces and design features allowing views of nature and interaction with nature	<p>Presence of devices which allow:</p> <ul style="list-style-type: none"> * View of nature (e.g. large windows, individual home back porch, common house patio, home great room, balcony or terrace, etc.) * Interaction with nature (e.g. common garden, compost area, labyrinth, nodes and sidewalk system, etc.) <p>Level 1 (0 point): No view of or interaction with nature in the home environment Level 2 (2 points): View of nature from home Level 3 (6 points): View of nature from home and interaction with nature in the home environment</p> <p><i>References:</i> <i>Lies et al (2017) found that the design features associated with these types of interaction found in the study are:</i> <i>View of nature</i> <i>* Large windows</i> <i>* Individual home back porch</i> <i>* Common house patio</i> <i>* Individual home great room</i> <i>Interaction with nature</i> <i>* Common garden</i> <i>* Compost area</i> <i>* Labyrinth</i> <i>* Nodes and sidewalk system</i></p>	Level 1 Level 2 Level 3	0 2 6	Plans	On-site visit, plans	x	x	x	x	x	x	x
2.1 Identity and emotional connectivity	2.1.9	Home within range of neighbourhood 'third places'	To promote emotional connectivity, meaningful activity and social engagement, the home should be located within easy, accessible range of a variety of appropriate 'third place' destinations in the neighbourhood.	<p>Presence of 'third places' (such as public parks, local businesses like small single-purpose shops, community organisations and institutions, ...) where people can feel like they are at 'home away from home' and socialize.</p> <p>Level 1 (0 point): no or not accessible 'third places' in the neighbourhood Level 2 (6 points): existing and accessible 'third places' in the neighbourhood</p> <p><i>References:</i> <i>Third places', using a definition from Oldenburg (1989) are places "that are located outside of the home (first place) and work (second place) and share several essential features: they are on neutral</i></p>	Level 1 Level 2	0 6	Site analysis	Site analysis, on-site visit	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				ground, they act as 'levellers', conversation is the main activity, they are accessible, 'regulars' spend time in them, they are physically plain and unassuming, the mood is playful, and people feel like they are a 'home away from home'. " Notable 'third places' identified by the subjects in the study were public parks, certain local businesses (with a strong preference for small single-purpose shops), community organisations and institutions											
2.1 Identity and emotional connectivity	2.1.10	Home environment within reach of community activities and engagement	For emotional wellbeing and attachment to place, the home environment must be situated within short and accessible reach of community activities, and opportunities for social engagement, and contact with significant others	Community activities and opportunities for social engagement and contact with significant others in the neighbourhood, within short and accessible reach (a 10-min walkable or a 400m-diameter distance from home) Level 1 (0 point): None Level 2 (2 points): Familiar neighbourhood or long-term neighbours Level 3 (6 points): Supportive neighbours or community (looking for each other)	Level 1 Level 2 Level 3	0 2 6	Site analysis	Site analysis, on-site visit	x	x	x	x	x	x	x
2.1 Identity and emotional connectivity	2.1.11	Meaningful destinations within walking distance from home	Meaningful destinations around the home environment (that provide for social inclusion and offer suitable activities within walking distance) is especially important for people with dementia and their family members who cohabit with them. It is important they both have easy access to various services and amenities at walking distance e.g.: grocery stores, shopping facilities, pharmacists, access to community care services and other social support services as well as the possibility for social activities.	Presence of 'meaningful destinations' that are helpful to care dependent persons and their cohabiting family members (such as grocery stores and other shopping facilities, pharmacist and other primary care services, social connections, community services including work) within a walkable distance (10min or 400m). Level 1 (0 point): No meaningful destinations in the neighbourhood Level 2 (6 points): Some meaningful destinations in the neighbourhood Level 3 (8 points): Lots of meaningful destinations in the neighbourhood	Level 1 Level 2 Level 3	0 6 8	Site analysis	Site analysis, on-site visit	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.1	Housing options for single older persons must enable occupants to live alone	To give single persons the option to choose whether they want to share or not accommodation (this applies particularly, but not only, to older women)	Is the collective housing designed to offer to single older persons the option to live alone? Not applicable No (0 point) Yes (3 points)	NA No Yes	0 3	Plans	Plans, on-site visit	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.2	Occupants have control over access to home	Home environment must offer access control to occupants, thus giving occupants the opportunity to regulate the flow of visitors and caregivers to the home.	The home front door or the door to private spaces/rooms have a limited access control device No (0 point) Yes (3 points)	No Yes	0 3	Characteristics of devices	Characteristics of installed devices	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
2.2 Privacy and dignity	2.2.3	Availability and access to housing resources	Availability of a resource listing age-friendly home maintenance, support and care-giving services.	<p>Availability of an accessible resource listing age-friendly home maintenance, support and care-giving services.</p> <p>Item a: age-friendly home maintenance Item b: age-friendly support services Item c: age-friendly care-giving services</p> <p>Level 1 (0 point): no available resource Level 2 (3 points): available resource (on paper or internet) for at least 2 items Level 3 (5 points): available resource for at least 2 items, with assistance (telephone service, help on web services)</p>	Level 1 Level 2 Level 3	0 3 5	Plans of local activities	Plans of local activities, on-site visit	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.4	Monitoring systems situationally adjustable according to wishes of and through actions of occupants.	To have deployed in the home environment monitoring systems that assume and accommodate active, creative agency on the part of occupants. This includes operational principles and data flows being made transparent to occupants in non-technical terms, and monitoring sensitivity being situationally adjustable according to wishes of and through actions of occupants. It takes into account informed trade-offs made by older adults between autonomy, dignity, utility and privacy.	<p>Are the home environment monitoring systems adjustable according to wishes and through actions of occupants?</p> <p>Not applicable No (0 point) Yes (3 points)</p>	NA No Yes	0 3	Characteristics of systems	Characteristics of installed systems	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.5	Surveillance devices and systems in the home adjustable to occupant needs and preferences by occupants themselves	To safeguard perceived autonomy and privacy, any surveillance devices or systems deployed in the home must be adjustable to suit personal preferences for surveillance and non-surveillance, and it must possible for occupants to do this themselves. It should be transparent to occupants (in terms appropriate to their perspective and background) which information is being shared and with whom by devices and systems deployed about the house, with the occupant being enabled to make and revise decisions about which data is being shared.	<p>In case of AAL (Active Assisting Living) technology in the home:</p> <p>1. Are the in-home surveillance systems installed with the resident's agreement? 2. Are the residents able to select and revise data to be shared?</p> <p>Not applicable Level 1 (0 point): No to both questions Level 2 (1 point): Yes to either question Level 3 (3 points): Yes to both questions</p>	NA Level 1 Level 2 Level 3	0 1 3	Commitment to ask for agreement, characteristics of planned systems	Presence of agreement, characteristics of installed systems (possible disconnection)	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.6	Home environment has spaces and design features that contribute to autonomy and space for transition	Place dependence (a dimension of place attachment), the home environment must provide spaces and design features that contribute to autonomy and space for transition	<p>To contribute to place dependence (a dimension of place attachment), the home environment must provide spaces and design features that contribute to autonomy and space for transition</p> <p>For instance, design features associated with these aspects may be:</p> <p>Autonomy: Individual home kitchen, individual home bathroom, common garden, compost area Space for transition: Common house guest rooms, individual home closets, individual home great room</p>	Level 1 Level 2 Level 3 Level 4	0 2 4 6	Plans	Plans, on-site visit	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>The home environment benefit from spaces and design features that contribute to autonomy and space for transition.</p> <p>Level 1 (0 point): No spaces or features Level 2 (2 points): Spaces and features that contribute to autonomy (kitchen, bathroom, garden, ...) Level 3 (4 points): Spaces and features for transition (guest room, living room, home closets, ...) Level 4 (6 points): Both spaces and features</p>											
2.2 Privacy and dignity	2.2.7	Separate extra bedroom available for family member or guests	Homes have at least a 2nd bedroom of sufficient dimensions to accommodate a single bed which can function as a guest room (for a family member or other external visitor,...)	<p>Space for a guest to stay overnight</p> <p>Level 1 (0 point): no space Level 2 (1 point): Home allows easy adaptation for a family member of visitor to stay overnight Level 3 (4 points): Home has at least one extra bedroom</p>	<p>Level 1 Level 2 Level 3</p>	<p>0 1 4</p>	Plans	On-site visit, plans	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.8	The home environment must offer adequate privacy and private spaces in co-habitation situations	To support occupants sense of identity and autonomy, home environments must offer private indoor spaces, in the case of cohabitation. Private spaces can be a private bathroom, private bedroom, independent heating and cooling system, a separate kitchen, a private outdoor space	<p>Do residents benefit from private spaces, in co-habitation situations?</p> <p>Not applicable Level 1 (0 point): No private space Level 2 (2 points): At least a private bedroom Level 3 (4 points): At least a private bedroom and bathroom Level 4 (6 points): At least a private bedroom and bathroom plus others (heating and cooling, separate kitchen, private outdoor space, ...)</p>	<p>NA Level 1 Level 2 Level 3 Level 4</p>	<p>0 2 4 6</p>	Plans	Plans, on-site visit	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.9	In-home technologies / systems should be equipped with privacy awareness systems tailored to the concerns and tech awareness level of users	Home ICT services adapted to home occupants' awareness level	<p>Are the home ICT systems able to be disconnected by residents at any time?</p> <p>Not applicable No (0 point) Yes (4 points)</p>	<p>NA No Yes</p>	<p>0 4</p>	Characteristics of systems	Characteristics of installed systems	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.10	Home can be accessed and easily adapted for home care	The home layout, systems and functions are modular and can be appropriately adapted for health care provision directly in the home.	<p>Are the home layout, systems and functions adaptable and modular to enable possible professional health care provision directly at home? (e.g. by home nurses etc)</p> <p>Not applicable No (0 point) Yes (3 points)</p>	<p>NA No Yes</p>	<p>0 3</p>	Characteristics of systems	Characteristics of installed systems	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.11	Formal and personalised social and health services are available, accessible and	Easily available formal (public or private) community care services, social support service or other assistance needs in the neighbourhood.	<p>The neighbourhood has availability to receive formal (public or private) care services or assistance needs</p> <p>Level 1 (0 point): No care services available in the</p>	<p>Level 1 Level 2 Level 3</p>	<p>0 2 4</p>	Site analysis for availability of services	Site analysis for availability of services	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
		affordable in the home's neighbourhood		neighbourhood Level 2 (2 points): Accessible private or public care services Level 3 (3 points): Accessible to both public and private care services											
2.2 Privacy and dignity	2.2.12	Flexible home tenureship rules	Home tenureship rules (e.g. in case of rented home) are flexible and allow for non-cohabiting family members to move into the home of their care-dependent family member.	Existing home tenureship rules allows for a non-cohabiting family member or friend to move into the home of the care-dependent person Not applicable No (0 point) Yes (2 points)	NA No Yes	0 2	-	Rules			x	x	x	x	x
2.2 Privacy and dignity	2.2.13	Home environment promotes a sense of autonomy and purpose for its occupants	Home environment should be a place that promotes the wellbeing of its occupants by fostering their sense of autonomy and sense of purpose, especially if the inhabitants are persons in need of care and/or support (including their cohabiting family members)	The home has been designed to allow for maximum autonomy of its inhabitants even if they are care-dependent, e.g. they can easily take care of themselves in their own home, despite potential decline in their physical abilities or cognitive functions (lighting is sufficient, bathroom is well designed for ageing-in place, they can easily access all shelves in kitchen, etc.) No (0 point) Yes (4 points)	No Yes	0 4	Professional narrative	Professional narrative	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.14	Occupants as co-creators of home environments	Occupants should be able to participate to the design of their homes in aging-in-place initiatives (new build and/or major refurbishment projects) to preserve people's sense of identity.	Are the occupants able to participate to the design of homes/dwellings in case of construction or refurbishment projects? No (0 point) Yes (3 points)	No Yes	0 3	Documents showing that it is possible to participate or co-create homes or dwellings	Effective homes/dwellings in that situation	x	x	x	x	x	x	x
2.2 Privacy and dignity	2.2.15	Home component settings controllable by occupants	Occupants can control their home settings to contribute to sense of autonomy and sense of control over the environment	Can the home setting systems be controlled by residents, for e.g. temperature control, ventilation, day light access, outdoor views etc.? No (0 point) Yes (4 points)	No Yes	0 4	Characteristics of systems	Characteristics of installed systems	x	x	x	x	x	x	x

5.4 Social cluster: table of requirements

Applicability: De = in design; Cs = under construction; Op = in operation; Ny = not yet in use; Us = in use; In = Individual house; Co = collective building

TABLE 10 – REQUIREMENTS FOR THE SOCIAL CLUSTER

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
3.1 Social Activity	3.1.1	Availability of space in the home environment to receive visitors, at daytime	The availability of social spaces facilitates the social contact of the user. Possibility to receive visitors at home or nearby in order to provide social contacts and limit the risk of social isolation.	The home environment is adequate to receive visitors at day time (e.g. a living room or a kitchen at home, a common or shared indoor space in collective places, etc.): Level 1 (0 point): No spaces available for daily visitor Level 2 (4 points): Yes, a common or shared space Level 3 (6 points): Yes, a private space	Level 1 Level 2 Level 3	0 4 6	Plans	Plans, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity	3.1.2	Home environment and neighbourhood contain 'third place thresholds'	The presence of 'third place threshold' provides emotional connectivity, meaningful activity and social engagement in older adults.	Thresholds "are the hybrid, semi-public spaces that straddle the private dwelling and public neighbourhood, such as porches, patios, backyards and balconies. These in-between third places provide easy and readily available opportunities for social interaction, most commonly with neighbours." For those living in high-rise dwellings, balconies, lobbies and elevators took on the role of 'thresholds'. Presence of 'third place thresholds' such as: porches, patios, backyards and balconies; and, in high-rise dwellings, lobbies and elevators. Level 1 (0 point): no 'third place threshold' at home or nearby Level 2 (2 points): limited number of 'third place thresholds' at home or nearby Level 2 (6 points): large number of 'third place thresholds' at home or nearby	Level 1 Level 2 Level 3	0 2 6	Plans, Site analysis	On-site visit, plans	x	x	x	x	x	x	x
3.1 Social Activity	3.1.3	Home environment has spaces and design features that allow expression of family history	Family bonding (a dimension of place attachment), the home environment must provide spaces and design features that allow for continuation of family past and continuation of family history	To contribute to family bonding (a dimension of place attachment), the home environment must provide spaces and design features that allow for continuation of family past and continuation of family history Continuation of family past: * Allowance of pets * Spending time with grandchildren Continuation of family history: * Individual home display spaces Does the home environment provide spaces and	Level 1 Level 2 Level 3	0 2 4	Plans	Plans, on-site visit	x	x	x	x	x	x	x

Taxonomy		Requirement				Scoring		Evidence		Applicability						
Category		Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
					design features for continuation of family past (allowance of pets, time with grandchildren) and family history (home display spaces)? Level 1 (0 point): no space or feature Level 2 (2 points): one feature (family past/family history) Level 3 (4 points): both features											
3.1 Social Activity		3.1.4	Home environment offers adequate spatial provisions for pets, hobbies, socialising and storage	The home environment must offer adequate spatial provisions for pets, hobbies, socialising and storage. Where homes have multiple occupants, the home should be able to cater for the preferences of each occupant	The home environment has adequate spaces for pets, hobbies, socialising and storage, for each resident. Level 1 (0 point): none Level 2 (2 points): closet or basement or garage Level 3 (4 points): idem + living room, kitchen Level 4 (5 points): idem + spare room, common room, terrace, garden	Level 1 Level 2 Level 3 Level 4	0 2 4 5	Plans	Plans, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity		3.1.5	The home and its immediate environment offer opportunities to engage in meaningful social activity	Home and its immediate environment should be a place to engage older adults in social activity	Opportunities to engage in meaningful social activity. Level 1 (0 point): none Level 2 (2 points): social and physical activity room (game room, hearth room, sports room, ...) Level 3 (4 points): community services (visiting and travel, ...)	Level 1 Level 2 Level 3	0 2 4	Plans, accessible services planed	Plans, effective accessible services	x	x	x	x	x	x	x
3.1 Social Activity		3.1.6	Spatial lay-out of the home environment allows control over level of social interaction.	The spatial lay-out of the home environment must allow occupants control over the level of social interaction they engage in while in the home. Specifically, each home should have a distinct private space to which the occupant wholly controls access	Existence of a distinct private space within the home to which the occupant wholly control access Level 1 (0 point): no such space Level 2 (1 point): no total control over this space Level 3 (3 points): total control over a distinct private space	Level 1 Level 2 Level 3	0 1 3	Plans	Plans, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity		3.1.7	The direct environment of the home offers suitable spaces for engagement in organized social and learning activities.	The direct environment of the home offers suitable spaces for engagement in organized social and learning activities.	The 'ideal menu' of group activities emerging from the literature: * provision of 'something for everyone' in physical and hobby activities * a range of different forms of mental stimulation and physical exercise to suit various tastes * activities which will foster emotional support and informal contacts that develop into real friendship, addressing emotional loneliness * breaking the vicious circle which leads through loneliness to poorer health, and thus to reduced capacity to engage with others and make new friends (health promotion events and similar) * supporting the most frail and especially those with mobility problems to take part in community life * helping residents maintain links with the wider community, in particular links with other age groups	Level 1 Level 2 Level 3	0 2 4	List of available or future activities	List of available or future activities, on-site visit	x	x	x	x	x	x	x

Taxonomy		Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co	
				<p>and with healthier people</p> <p>* encouragement of internet use as an important gateway to the wider social environment</p> <p>* offering specialised help to those who are too frail or immobile to leave their homes, or who have become withdrawn due to bereavement or crisis leading to rupture of social networks</p> <p>Accessible social spaces where people can engage in organized social and learning activities.</p> <p>Level 1 (0 point): none</p> <p>Level 2 (2 points): yes, but a limited offer compared to the needs</p> <p>Level 3 (4 points): yes, wide offer</p>												
3.1 Social Activity	3.1.8	Basic necessities and services are easily accessible to people with disabilities	The home environment guarantees short and accessible reach of shops and services, or ensures provision of these basic necessities	<p>Basic necessities are easily accessible to people with minor disabilities (shops and services within short reach or provision ensured in the home environment)</p> <p>No (0 point)</p> <p>Yes (4 points)</p>	No Yes	0 4	Plans of local accessible shops	Plans of local accessible shops, on-site visit	x	x	x	x	x	x	x	
3.1 Social Activity	3.1.9	Home within easy reach of accessible and affordable public and individualizes transport services	<p>Proportion of public transport services (incl. vehicles and stops) with designated places for older people or people who have disabilities.</p> <p>Proportion of housing within walking distance (500 m) to a public transportation stop.</p> <p>Additional indicators would be needed to take into consideration the safety and quality of the route to the transportation stop.</p>	<p>Accessible public transport services (including vehicles and stops) within a 400m ray or a 10min walk from home.</p> <p>Level 1 (0 point): Few public transport services are accessible to older people or people with disabilities (25% or less)</p> <p>Level 2 (2 points): Between 25% and 75% of public transport services are accessible to older people or people with disabilities</p> <p>Level 3 (4 points): Most public transport services are accessible to older people or people with disabilities (75% or more)</p>	Level 1 Level 2 Level 3	0 2 4	Plans of local transportation services, information about their accessibility	Plans of local transportation services, information about their accessibility, on-site visit	x	x	x	x	x	x	x	
3.1 Social Activity	3.1.10	The neighbourhood offers opportunities for social interaction, within range of the home and by accessible routes.	Identification of the built environment spaces that can improve social environment and quality of life.	Many people consider that the social environment is the main factor contributing to people's quality of life. However, since social interactions take place within the neighbourhood-built environment, this latter can eventually affect the social environment and, finally, the quality of life. In particular, in the case of older people, the identification of spaces within the neighbourhood as important for social interaction and place attachment, is mostly driven by emotional attachment to places and the significance of certain spaces in their own life history, whereas for the professionals only the functional perspective matters.	Level 1 Level 2 Level 3 Level 4	0 2 4 6	Plans with accessible places for social interactions	Plans with accessible places for social interactions, on-site visit	x	x	x	x	x	x	x	

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>Identify and list a number of accessible spaces important for social interaction in the neighbourhood (indoor or outdoor, e.g. social gathering, leisure, culture, restaurants and bars, spiritual places, green or natural areas, etc.). Accessibility is considered for these places within 800-m ray from home or less than 30min-walk</p> <p>Level 1 (0 point): no place Level 2 (2 points): 1 to 3 places Level 3 (4 points): 4 to 6 places Level 4 (6 points): 7 places and over</p>											
3.1 Social Activity	3.1.11	Green spaces in home environment improve social interactions	Assessing to what extent green spaces can strengthen social interactions and quality of living.	<p>Accessible green spaces within a walkable distance (400 m or 10min walk)</p> <p>Level 1 (0 point): none Level 2 (1 point): yes, but in poor conditions (maintenance, no sitting spaces, ...) Level 3 (3 points): yes, in good conditions of maintenance, but limited authorized uses (just walk in the alleys or sit on the benches) Level 4 (5 points): yes, in good conditions of maintenance, and with a wide range of authorized uses (physical activities on grass, newspapers kiosk, kiosk with snacks, ...)</p>	Level 1 Level 2 Level 3 Level 4	0 1 3 5	Plans of local green spaces available and characteristics	Plans of local green spaces available and characteristics, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity	3.1.12	The social living environment of older people from migrant communities, is sensitive to their specific socio-cultural needs and preferences, and supports trust building and development of social capital	Identifying the features of social living environment that supports trust building and development of social capital of older people from migrant communities.	<p>Ageing immigrant population is and will be increasingly an issue in many EU countries. Providing social living environment which meet specific socio-cultural needs and preferences of older people from migrant communities can be conducive to support social connectivity. Nevertheless, we must be aware that simply creating ethnically homogeneous living communities is not sufficient to support social connectivity, since it can trigger an adverse effect if such living arrangements are experienced as (socially) unsafe and/or adversarial by occupants. In order to identify which could be the features of social living environment required by immigrant communities a focus group approach aimed at providing a qualitative evaluation of the (proposed) living environment by target group representatives can be used.</p> <p>Opportunities for migrant communities to find social activities allowing to build trust and social capital between the different communities of the neighbourhood.</p> <p>Not applicable Level 1 (0 point): None</p>	NA Level 1 Level 2 Level 3	0 1 4	Plans with social activities for migrant community	Plans with social activities for migrant community	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				Level 2 (1 point): Few in comparison to the migrant population Level 3 (4 points): Fair choice in comparison to the migrant population											
3.1 Social Activity	3.1.13	Home is situated in an area that facilitates establishment of reciprocal social relationships with e.g. neighbours	Showing that easiness to establish reciprocal social relationships with e.g. neighbours contributes to a sense of safety and security and supports the emergence of a sense of social cohesion.	Home environment providing reassurance and sense of safety through existence of common and shared spaces (e.g. common room for meal taking, communal laundry, shared gardens and patios) contributes to a sense of safety and security and supports the emergence of a sense of social cohesion. This result can be related to the fact that these spaces offer conceptual continuity with occupants' previous lives, and with spatial/architectural characteristics like subjective safety and non-institutionalized feel being referenced. Availability of common and shared spaces for community activities in the immediate environment. Item a: Common room for meal taking Item b: Communal laundry Item c: Shared gardens and patios Item d: Community social activities (organized by church, community or municipality) Level 1 (0 point): no common and shared spaces Level 2 (2 points): at least one item Level 3 (4 points): yes to tow items or more	Level 1 Level 2 Level 3	0 2 4	Plans	Plans, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity	3.1.14	The home environment accommodates a wide range of activities	Showing that the home environment must accommodate a wide range of activities to fulfil people's preferences, then increasing self-fulfilment and experience positive emotions.	Preferences in activities to achieve self-fulfilment and experience positive emotions differ markedly between the people on the basis of age, gender, cultural background, physical capacity, mental health, etc. Availability of a wide range of activities in the home environment to cover people's personal interests No (0 point) Yes (4 points)	No Yes	0 4	List of available or future activities	List of available or future activities, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity	3.1.15	Availability of places with spiritual significance within accessible walking distance	Showing that availability of places with spiritual significance within accessible walking distance supports the sense of identity and emotional attachment	Availability of places with spiritual significance within walking distance (churches or religious place, but also natural space with a spiritual significance such as a park or a river or a large sight on sky, ...) Level 1 (0 point): not at a walkable distance	Level 1 Level 2	0 4	Plans with spiritual significant places	Plans with spiritual significant places, on-site visit	x	x	x	x	x	x	x

Taxonomy		Requirement				Scoring		Evidence		Applicability						
Category		Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
					(<400m or 10min walk) Level 2 (4 points): yes, at a walkable distance											
3.1 Social Activity		3.1.16	Home's immediate environment has sitting spaces to enable social interaction.	Showing that the presence of sitting spaces in the immediate environment of home enables social interaction.	Sitting spaces are considered in both public spaces (streets, parks, etc.) and private spaces (like in a residential complex). Sitting spaces to enable social interaction in the home's immediate environment. Level 1 (0 point): No sitting spaces around the home Level 2 (2 points): Sitting spaces around the home Level 3 (4 points): Sitting spaces scattered all over the neighbourhood (streets and pathways, parks and gardens)	Level 1 Level 2 Level 3	0 2 4	Plans with presence of sitting spaces	Plans with presence of sitting spaces, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity		3.1.17	Home is situated in a walkable neighbourhood with accessible public spaces and buildings	Showing that homes situated in a walkable neighbourhood with accessible public spaces and buildings improve liveability and social contacts.	Proportion of streets in the neighbourhood (within a 1km-ray from home) that have pedestrian paths or sidewalks that are accessible by all people, including those who have limitations in mobility - wheelchair for instance, vision or hearing. Level 1 (0 point): Less than 50% Level 2 (2 points): 50% to 80% Level 3 (6 points): over 80%	Level 1 Level 2 Level 3	0 2 6	Site analysis	Site analysis and on-site visit	x	x	x	x	x	x	x
3.1 Social Activity		3.1.18	Home is situated in a walkable neighbourhood with safe pedestrian crossings and public seating	Showing that homes situated in a walkable neighbourhood with accessible public spaces and buildings improve liveability and social contacts	Frequent and safe pedestrian crossing as well as public seating options, median islands, etc. Level 1 (0 point): Insufficient crossings and seating options Level 2 (2 points): On average, over 100m between them Level 3 (4 points): On average, below 100m between two of them	Level 1 Level 2 Level 3	0 2 4	Site analysis	Site analysis and on-site visit	x	x	x	x	x	x	x
3.1 Social Activity		3.1.19	The home environment gives occupants a potential virtual access to those in their social group	Showing that a home environment that gives occupants virtual access to those in their social group increases their outward-focused engagement, and consequently their mental health	Availability at home of simple systems to keep in touch with family and friends Not applicable Level 1 (0 point): No Level 2 (1 point): Yes, but considered as complex Level 3 (3 points): Yes, and friendly use	NA Level 1 Level 2 Level 3	0 1 3	Planned systems	Installed systems, on-site visit	x	x	x	x	x	x	x
3.1 Social Activity		3.1.20	Information and support needs for care dependent person and their family members are easily accessible and understandable, and include personalised tailored support services or tools	Showing that accessibility and understandability of information and support needs of carers as well as personalised tailored support services or tools improve carers working conditions.	Home-bound carers can access relevant web-based information (community services, information needs, support needs) and receive primary care services in the home. Not applicable Level 1 (0 point): No Level 2 (2 points): Access to web-based information	NA Level 1 Level 2 Level 3	0 2 4	Availability of web services, information	Presence of web services, information, on-site visit	x	x	x	x	x	x	x



Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				Level 3 (4 points): Access to web-based information and to primary care service in the home (e.g. care workers or home nursing)											
3.2 Employment	3.2.1	The home helps and enables co-habiting and working family carers to easily work from home	Showing that if the home supports informal carers' work-life-care balance, their working conditions improve	Home environment is ICT ready and cohabiting family carers can work from home (ICT and fast Wi-Fi connexion) Not applicable No (0 point) Yes (4 points)	NA No Yes	0 4	ICT solutions planed, mean time	Effective ICT solutions, effective mean time, on-site visit	x	x	x	x	x	x	x

5.5 Economic cluster: table of requirements

Applicability: De = in design; Cs = under construction; Op = in operation; Ny = not yet in use; Us = in use; In = Individual house; Co = collective building

TABLE 11 – REQUIREMENTS FOR THE ECONOMIC CLUSTER

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	C
4.1 Affordability	4.1.1	Affordable housing for all	Contribution to occupants' wellbeing by providing affordable cost on home arrangements	<p>Financial dependency is negatively associated with mental health. This is specifically so where there is financial dependency for housing arrangements. Moreover, housing precarity negatively affects residents' physical, social and emotional wellbeing.</p> <p>Housing costs should be maintained within 30% of income (optimum performance); a 40%-threshold is considered as the minimum standard to be achieved. Housing costs include renting costs, mortgage payment, and repair and maintenance costs.</p> <p>Income share of overall housing costs (rent, mortgage, maintenance, etc.)</p> <p>Not applicable Level 1 (0 point): Housing costs are beyond 40% of income Level 2 (2 points): Housing costs are between 30% and 40% of income Level 3 (4 points): Housing costs are less or equal to 30% of income</p>	NA Level 1 Level 2 Level 3	0 2 4	Predicted housing costs	Effective housing costs	x	x	x	x	x	x	x
4.1 Affordability	4.1.2	Occupants must have long-term security on costs of housing	To support personal sense of security and emotional wellbeing, occupants must have long-term security on costs of housing, or alternatively on the long-term availability of appropriate, affordable housing arrangements.	<p>Rental arrangements need to offer long-term security on costs of housing, or alternatively on the long-term availability of appropriate, affordable housing arrangements; owners could benefit from financial provision to meet housing cost overburden such as maintenance costs; etc.</p> <p>Mechanisms that prevent eviction of the most economically fragile elderly. Then, older people are guaranteed to stay in their home place in the long-term, because of, e.g.:</p> <ul style="list-style-type: none">- a specified age threshold- policy in terms of the duration of rental contracts- long-term policy in terms of housing costs increase (for instance, on energy costs)- financial provisions to face housing cost overburden (housing allowances)	No Yes	0 6	Contracts	Contracts	x	x	x	x	x	x	x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				No (0 point) Yes (4 points)											
4.2 Choice	4.2.1	Affordable rental accommodation needs to be situated within reach of social and healthcare services	There is a tendency for affordable accommodation to shift to the periphery, away from services, as areas are redeveloped and gentrified.	Distance to social and healthcare services for affordable rental accommodation (30% of average household income) Level 1 (0 point): Over 15-min by public transportation Level 2 (3 points): 15-min by public transportation	Level 1 Level 2	0 3	Plans of the neighbourhood	Plans of the neighbourhood	x	x	x	x	x	x	x
4.2 Choice	4.2.2	The home environment enables mobility for its occupants, through access to public transport	Easy access, and proximity to affordable public transportation from home environment support access for example to social activities and other facilities.	Proportion of public transport services (incl. vehicles and stops) with designated places for older people or people who have disabilities. It refers to the ability of people with disabilities and older people to safely ride in a public transport vehicle in order to reach their destination. Item a: At least one public transport stop within a circle of a 10min-walk or a 400m-distance from home Item b: Cost of public transportation (round trip) no more than 3 per thousand of minimum wage Item c: Public transport schedule at least during working hours Item d: Public transport frequency at least every 30 min Level 1 (0 point): 0 or 1 item fulfilled Level 2 (2 points): 2 items fulfilled Level 3 (6 points): 3 or 4 items fulfilled	Level 1 Level 2 Level 3	0 2 6	Site analysis	Site analysis	x	x	x	x	x	x	x
4.2 Choice	4.2.3	Home employment workers can easily be accessed	Home environment provides visible and clear information concerning family and home employment options	Home environment provides visible and clear information concerning family and home employment options, including financial arrangements or tax exemption measures.. Not applicable No (0 point) Yes (4 points)	NA No Yes	0 4	Commitment to give information	Presence of information, on-site visit	x	x	x	x	x	x	x
4.2 Choice	4.2.4	Housing support awareness	Awareness of rent subsidy or other programmes among older people (e.g. home loans).	Availability of information on housing support programs for the elderly: loans, subsidies. Level 1 (0 point): no specific information provided Level 2 (2 points): available information through leaflets, brochures and websites Level 3 (4 points): available information given through meetings between stakeholders and end users	Level 1 Level 2 Level 3	0 2 4	Available information or commitment to give information	Information given to users	x	x	x	x	x	x	x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
4.2 Choice	4.2.5	Modifications to home may be undergone on the initiative of the occupant	To allow occupants to carry through modifications to improve the fit of their home environment to their personal preferences, without acceptance of anyone (owner, site manager, ...)	Are occupants allowed to make modifications to their home on their own initiative? Not applicable Level 1 (0 point): No modification without anyone's acceptance Level 2 (2 points): Minor modifications without anyone's acceptance Level 3 (4 points): Major modifications without anyone's acceptance	NA Level 1 Level 2 Level 3	0 2 4	Contracts (tenants), co-ownership regulations	Contracts (tenants), co-ownership regulations	x	x	x	x	x	x	x
4.2 Choice	4.2.6	Availability of information about home adaptation options	Availability of local sources providing information about possibilities (services and funds) to retrofit/adapt one's home.	Availability of information about possibilities (services and funds) to retrofit/adapt one's home. Level 1 (0 point): none Level 2 (3 points): yes, booklet or website Level 3 (5 points): yes, through information meetings	Level 1 Level 2 Level 3	0 3 5	Available information or commitment to give information	Information given to users	x	x	x	x	x	x	x
4.2 Choice	4.2.7	Housing programmes and resources must be widely available	Availability of a resource listing age-friendly home maintenance, support and care-giving services.	Availability of a resource listing age-friendly home maintenance, support and care-giving services (either from the municipality, housing organisations, associations...) Level 1 (0 point): none Level 2 (3 points): yes, booklet or website Level 3 (5 points): yes, through information meetings	Level 1 Level 2 Level 3	0 3 5	Available information or commitment to give information	Information given to users	x	x	x	x	x	x	x

5.6 Physical cluster: table of requirements

Applicability: De = in design; Cs = under construction; Op = in operation; Ny = not yet in use; Us = in use; In = Individual house; Co = collective building

TABLE 12 – REQUIREMENTS FOR THE PHYSICAL CLUSTER

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
5.1 Personal Safety	5.1.1	Secure lighting around home	Proper lighting around the home referring to the entrances so that these spaces have the right intensity as well as presence detection system covering the entire space.	Proper lighting around the home referring to the entrances so that these spaces have the right intensity as well as presence detection system covering the entire space. No (0 point) Yes (1 point)	No Yes	0 1	Characteristics of lighting systems	On-site visit, characteristics of lighting systems	x	x	x	x	x	x	x
5.1 Personal Safety	5.1.2	Burglary protection	Construction design and systems installation against burglary	Construction design and security systems installation against burglary include alarms as well as other basic devices such as videophone, door eye or peephole, which are placed at the right heights. Level 1 : At least 3 of the following construction design characteristics - The guardrails of the dwellings are the subject of at least one provision making it possible to reduce the risk of escalation, to choose from the following list: • Height of the guardrails of dwellings (including lighters) at least 0.10 m higher than the height required by the current local standard • Windows and patio doors in dwellings equipped with an opening blocking system (for example a door stop) preventing their complete opening by a child or are of the tilt-and-turn type; • Single vertical bar in accordance with local standard • Smooth internal face; • Internal side with a strong grid pattern (no soft mesh), a frame width <5 cm or a frame height <3 cm; • Anti-crossing device at the head of the protection, designed to oppose accidental tipping over the railing after climbing. To be effective, this device must be set back supports usable for climbing a distance greater than 15 cm. It may consist of a continuous rail attached to the interior of the railing, a continuous support of balconies, etc .; • Another device whose efficiency is demonstrated by the Client (e.g.: inclination of the railing inwards). - Burglar-resistant doors and windows and/or shutters. All doors and windows accessible to burglars should be burglary resistant to an entry delay of at least three minutes. - A locking device on the windows and doors of the housing accessible from the outside (ground floor and first floor, if any) is installed to limit the opening of the window to a few centimetres. Swinging and tilting systems are accepted. - A guard, rigid or in the form of a chain, is installed on the	Level 1 Level 2	2 4	Plans, characteristics of systems	On-site visit, characteristics of installed systems	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>entrance door at a height of the ground between 90 cm and 150 cm.</p> <p>Level 2 : Level 1 + At least one of the following systems</p> <ul style="list-style-type: none"> - A system of intercom or videophone at the entrance of the public building, on the street or in the hall, is installed. The equipment is accessible and does not require complex or fast manipulation sequences. The control base of the intercom or videophone system is located at a height between 110 cm and 130 cm. - A door eye (peephole or bull's eye) is placed on the entrance door of the dwelling at a height between 120 cm and 150 cm from the ground. - Burglar alarm or BUS- connected security system. <p>Level 1 (2 points) Level 2 (4 points)</p>											
5.1 Personal Safety	5.1.3	Safety requirements for parking	Some provisions have to be in place for parking.	<p>Some provisions have to be in place for parking:</p> <ul style="list-style-type: none"> - Parking facility lay-out must be transparent. - Route to entry hall of collective buildings must be immediately obvious from parking space - Direct line of sight to parking garage floor from lift/stairwell - Parking facilities should be directly visible from at least 2 homes and be small scale. - Multi-storey parking must not be freely accessible from outside. Locked door to domestic area of collective buildings. - Collective buildings parking facilities must be locked and accessible only to occupants and other specifically authorized persons. <p>If applicable, for bicycle access parking facilities should have separate access by walk-through door with good line of sight. Access doors communal bicycle/mobility scooter parking: self-locking, 3 minute burglary delay; glass pane in or next to door with minimum width 400 mm, lower edge maximum 1000 mm above floor level, upper edge minimum 1800 mm above floor level, glass must satisfy burglary-delay requirement</p> <ul style="list-style-type: none"> - Doors, windows and ventilation openings for bicycles/mobility scooters should delay burglary attempts by at least 3 minutes. This applies to all openings with both width and height minimum 1500. The requirement also applies to light wells and skylights. <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Plans, characteristics of locking systems, doors, etc.	On-site visit, characteristics of installed locking systems, doors, etc.	x	x	x	x	x		x
5.1 Personal Safety	5.1.4	Safety requirements for storage areas and back passages	Some provisions must be in place for storage areas and back passages.	<p>Some provisions have to be in place for storage areas and back passages:</p> <p>Where centralized storage facilities or back passages are realized, they should be safe, especially for use by vulnerable occupants.</p> <p>NA if there is no storage areas and back passages</p>	NA No Yes	0 1	Plans, characteristics of locking systems, doors, windows, etc.	On-site visit, characteristics of installed locking systems, doors, windows, etc.	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				No (0 point) Yes (1 point)											
5.1 Personal Safety	5.1.5	Safety requirements for access doors	Some provisions have to be in place to ensure safety of access doors.	Some provisions have to be in place (at least 2): <ul style="list-style-type: none"> - Access doors should be fitted with a device allowing them to be automatically blocked open at a 90° angle if necessary. - Self-locking, key-only operation from outside. - Access to the collective building is managed: all doors require physical or electronic key to open. - No glass allowed in doors. No (0 point) Yes (2 points)	No Yes	0 2	Characteristics of doors	Characteristics of installed doors	x	x	x	x	x	x	x
5.1 Personal Safety	5.1.6	Direct sightline from inside to the street	The location of the front door should provide a direct sight so that the occupant is able to see the visitor.	The location of the front door should provide a direct sight so that the occupant is able to see the visitor. Technical specifications to consider: <ul style="list-style-type: none"> - Front door should be directly visible from street. - If an alcove is present, its maximum depth is: <ul style="list-style-type: none"> - Individual: 600 mm. - Collective building: 1000 mm Requirement for collective building above also applies to all other doors of the collective building <ul style="list-style-type: none"> - Viewing apertures at appropriate heights (see previous requirement for heights to consider). No (0 point) Yes (2 points)	No Yes	0 2	Plans, characteristics of systems	On-site visit, characteristics of installed systems	x	x	x	x	x	x	x
5.1 Personal Safety	5.1.7	Safe use of main entrances of the building	The lobby of the collective buildings is sufficiently lit and bright for good accessibility and visibility by seniors.	The lobby of the collective buildings is sufficiently lit and bright for good accessibility and visibility by seniors. The following characteristics must be in place: <ul style="list-style-type: none"> - In passage areas, the lighting is at least 80 lux. - There are no shadow areas near the mailboxes, lobby entrance door and entrance doors to the dwellings. - In case of presence detection lighting system, this must cover the entire space concerned. - In case of temporary lighting system, the extinction is progressive. Any direct dazzling effect of the users on the area or reflection on the signage should be avoided. - Indirect or semi-direct lighting are favoured. <i>The luminous intensity is evaluated at a height of 150 cm from the ground.</i> No (0 point) Yes (2 points)	No Yes	0 2	Plans, characteristics of systems	On-site visit, characteristics of systems	x	x	x	x	x		x
5.1 Personal Safety	5.1.8	Providing safety information	The information and safety information panels located in the lobby of the collective buildings are accessible and legible.	The information and safety information panels located in the lobby of the collective buildings are accessible and legible: <ul style="list-style-type: none"> - The bottom of the panel is at a height between 120 cm and 140 cm from the floor - The panel has a higher contrast at 70% between the lettering and the background 	No Yes	0 1	Characteristics of the information panels	On-site visit, characteristics of the information panels	x	x	x	x	x		x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>- The background is plain and mat</p> <p>- The font used is simple and sans serif.</p> <p>No (0 point)</p> <p>Yes (1 point)</p>											
5.1 Personal Safety	5.1.9	Adapted lighting and lighting controls	Lack of adequate lighting can decrease visual efficiency and cause accidents, and in order to provide when necessary the good level of light, lighting controls have to be implemented.	<p>Visual comfort depends on many variables. In relation to the amount of light it can produce either glaze (too much light) or dark spaces. Lighting intensity will be evaluated, avoiding shadows and dazzle.</p> <p>The lighting of the passage areas of the staircase serving the labelled dwellings has, on average, on the path, the same intensity: 80 lux.</p> <p>There should be no shadows, no direct dazzle of users on the area or no reflection on the signage.</p> <p><i>The luminous intensity is evaluated at a height of 150 cm from the ground.</i></p> <p>Level 2: Level 1 and the following provisions are in place:</p> <p>A presence detection lighting system is preferred. Otherwise, the lighting controls are easily accessible and visible. They are located:</p> <ul style="list-style-type: none"> - At the entrance of the hall - Near the lifts and stairs - At a height between 90 cm and 130 cm (from the ground to the base). <p>These lighting controls are identified (light integrated in the lighting control, pictogram ...).</p> <p>The presence detection lighting system must cover the entire space concerned and when two detection zones succeed one another, they overlap.</p> <p>The half-levels are equipped with a detector.</p> <p>There must be no shadow zones, or direct dazzle of users on the area or reflection on the signage.</p> <p>Level 1 (2 points)</p> <p>Level 2 (4 points)</p>	Level 1 Level 2	2 4	Plans, characteristics of systems	On-site visit, characteristics of systems	x	x	x	x	x		x
5.1 Personal Safety	5.1.10	Design and equipment of bathrooms	A lot of incidents occur in bathrooms. Therefore, bathrooms must have minimum provisions in place and to comply with minimum characteristics.	<p>In order to enjoy maximum comfort without risk or injuries, bathrooms have to comply with minimum characteristics to allow everyone (even disable people) to use them: enough space, equipment, ...</p> <p>Entering and leaving a bathtub is a considerable inconvenience for people with reduced mobility. Due to its safety and distribution of space showers are much more functional than tubs. Bathrooms must have minimum provisions in place:</p> <ul style="list-style-type: none"> - Dimensions of shower basin: 90x90 cm or 80X120 cm minimum with a non-slip bottom. - Height of the edge (rail included) between shower basin and ground: 18 cm maximum - Location of taps: between 90 cm and 130 cm from the ground, accessible from the entrance of the shower if possible 	No Yes	0 3	Plans and characteristics of bathroom, equipment, taps, basins, sinks, bars, tiles, ...	On-site visit, plans and characteristics of bathroom, equipment, taps, basins, sinks, bars, ...	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>- Installation of rail(s) in the bathroom, to facilitate entry and exit of shower: a bar is located inside the shower and, in the absence of a stable hold, another bar is located outside the shower. The holding bars are located on a load-bearing or consolidated wall in order to withstand considerable traction.</p> <p>- A thermostatic mixing valve is installed in the shower. In case of individual gas heating without accumulation, the thermostatic mixing valve is not mandatory.</p> <p>- A mixer tap is installed on the basin/sink.</p> <p>- Equipment: washbasin with tap:</p> <p>possibility for placing toilet (sufficient space, ducts in place)</p> <p>shower head on gliding pole. Pole should be positioned between 1200 and 2100 mm above floor level. Shower head should be placed at least 550 mm from inner corner</p> <p>thermostatic mixer tap, at least 550 mm away from inner corner</p> <p>Possibility for placement of shower stool at least 500 x 500 mm</p> <p>- Support bar is installed inside the shower or bathtub.</p> <p>- If the doors of the bathrooms are swinging, they open on the outside.</p> <p>All tiles in bathrooms (including shower areas) must be non-slip in accordance with CEN/TS 16165 (method A (grade B) or method C (0.45-0.80)).</p> <p>No (0 point)</p> <p>Yes (3 points)</p>											
5.1 Personal Safety	5.1.11	Design and equipment of toilets	In order to enjoy maximum comfort without risk or injuries, toilets have to comply with minimum characteristics	<p>In order to enjoy maximum comfort without risk or injuries, toilets have to comply with minimum characteristics to allow everyone (even disable people) to use them: enough space, equipment, ...</p> <p>- Installation of a handrail on the wall at a height between 75 cm and 90 cm from the floor</p> <p>- Privilege rails of 30 cm oblique</p> <p>- Reinforcement of the wall in case of light partition.</p> <p>It is also possible to install a rail attached to the floor.</p> <p>- Support bar located near the bowl.</p> <p>- Raised toilet: Laying a toilet block. The seating surface of the bowl shall be at a height of between 45 cm and 50 cm from the floor, including the flap; or install a booster seat that can be removed to reach a bowl height of between 45 cm and 50 cm.</p> <p>- If the doors of the toilets are swinging, they open on the outside.</p> <p>All tiles in toilets including shower areas) must be non-slip in accordance with CEN/TS 16165 (method A (grad A), method B (R10) or method C (0.30-0.80))</p> <p>Sliding doors</p> <p>If it's possible, sliding doors are installed to avoid space loose.</p> <p>If the cabinet is wider than 120 cm, sliding doors are installed.</p> <p>No (0 point)</p> <p>Yes (2 points)</p>	No Yes	0 2	Plans and characteristics of toilets, equipment, bars, tiles, ...	On-site visit, plans and characteristics of toilets, equipment, bars, ...	x	x	x	x	x	x	x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
5.2 Comfort	5.2.1	Presence of artificial lighting systems - Common areas	Presence of lighting points (type, quantity, position) and sockets	<p>Presence of means/systems to allow users to control their artificial lighting environment</p> <p>Artificial light: Presence of lighting points in common areas Inside collective building: - In entrance hall (min 40 Lux) and circulation areas (min 20 Lux) - In lift halls (min 50 Lux) and stairwells (min 20 Lux) - In circulation areas of storage facilities (min 20 Lux) - In communal cycle/mobility scooter parking facilities (min 20 Lux) - In in-complex multi-storey parking facilities (min 15 Lux) Outside collective building: - Parking facility (if run by the owner) (min 3 Lux) - All access routes (min 3 Lux) - Outside all entrances; within 2 m of door; minimum 2 lighting fixtures at main entrance (min 15 Lux) - At garbage disposal facility (min 20 Lux)</p> <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Plans, characteristics of lighting points and sockets	On-site visit, plans, characteristics of installed lighting points and sockets	x	x	x	x	x		x
5.2 Comfort	5.2.2	Identification and treatment of pollution sources on the site	Services areas concerned: parking lot or attached garage, common kitchen, activity rooms, ...	<p>At least the following spaces are concerned (if existing): Parking lot or garage - In the case of an attached garage communicating with the dwelling, it is provided at least: - the presence of an automatic closing door; - or specific treatment of the housing / garage partition (additional sealing at the wall or door); - or an airlock between the housing and the garage. - In the case of an attached garage communicating with the accommodation, the garage is provided with permanent ventilation directly on the outside.</p> <p>Kitchen (in presence of a common kitchen) (individual housing not concerned) An exhaust air duct for an extractor hood (independent of that provided for the mechanical ventilation) is present in the kitchen.</p> <p>NA if there is no parking lots, garages or common kitchens No (0 point) Yes (2 points)</p>	NA No Yes	0 2	Plans, characteristics of systems, treatments	On-site visit, characteristics of installed systems and treatments	x	x	x	x	x	x	x
5.2 Comfort	5.2.3	Operability and control of building systems	Control of heating, and air conditioning, ventilation and lighting systems in the dwelling,	<p>Controls The heating / cooling and ventilation control system allows adjustment and control of each of the main rooms of the house depending of the use. It should be possible to manage heating, cooling and ventilation systems from a single point in the dwelling: - Central operating panel in living room. Panel mounted at maximum height of 1500 mm above floor level. - Operating interfaces in each room (knobs, dials, twiddles), situated at a height between 400 mm and 1400 mm above floor level and at least 350 mm away from inner corner.</p> <p>Shutters</p>	Controls for heating/cooling and ventilation Controls for shutters and lighting points Automation	3 2 2	Characteristics of control system, automation device, and information	Characteristics of installed control system, automation device, and information	x	x	x	x	x	x	x

Taxonomy	Requirement				Scoring		Evidence		Applicability									
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co			
				<p>The shutters of the exterior joinery are motorized and each have an opening and closing switch (remote control or a push button (simple command)). The base of the push button is located between 90 cm and 130 cm from the ground.</p> <p>Lighting points</p> <ul style="list-style-type: none">- When the living room serves several rooms, the lighting system is equipped with switches of type back-and-forth or a remote control switch.- In the main bedroom, a lighting with a back-and-forth installation is installed. It allows to turn on or off the room from the entrance to the room and the headboard. <p>Automation: At least 2 of the following provisions are in place</p> <p>A building automation concept is in place, and all comfort parameters can be influenced by occupants.</p> <p>Examples of automation:</p> <ul style="list-style-type: none">- Weekly programming of the temperature of the rooms ensuring comfort, eco, frost, off. The command can be single zone or multizone.- Either by centralized control in environment ensuring the control of the modes comfort, eco, frost, stop, of the manual type allowing adjustable timings.- In some areas automatic switch off or dimming of lighting is permitted:<ul style="list-style-type: none">- circulation areas storage facilities- communal cycle/mobility scooter parking facilities- emergency stair wells- All areas should be fitted with automatic presence detection; at detection lights must come fully on and remain so for at least 10 minutes.- For collective building parking facilities only automatic dimming (with automatic switch on as described) is permitted. <p>Information: At least 2 of the following provisions are in place</p> <p>Moreover, ease of use must be addressed for senior occupants: user's manual, explanation of systems:</p> <ul style="list-style-type: none">- Provide occupants with easy-to-understand information on their energy and water use, and to pinpoint where heavy energy or water use is occurring :- Allow occupants to use electricity when it is most cost-effective in the future (dependent on the introduction of smart energy tariffs). For example:<ul style="list-style-type: none">- Advanced control of heating: Enhanced controls for heating systems (e.g. Climate, Nest)- Electricity monitoring: Smart electricity meter that provides cost information on daily, weekly and monthly rates, different cost tariffs, etc.- Heat and hot water: Information on costs and energy use in kWh for gas, oil and electrical (for hot water and heating) usages- Monitoring of water use: Water monitor- Provide occupants with easy-to-understand information on their ventilation system.- Advanced control: Enhanced controls for ventilation systems.	Information	2												

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<ul style="list-style-type: none"> - Integrated dashboard: All of the above information is integrated onto one platform - Provide occupants with easy-to-understand information on their lighting system. <p>Controls for heating/cooling and ventilation (3 points) Controls for shutters and lighting points (2 points) Automation (2 points) Information (2 points)</p>											
5.2 Comfort	5.2.4	Insulation between dwellings and with common spaces - Collective buildings	Maximise acoustic comfort and provide privacy between dwellings/homes, considering fair protection from noises of neighbouring apartments and from common spaces in multiple dwelling buildings: halls, staircases, lifts in common spaces; systems and equipment of neighbouring dwellings.	<p>The following design provisions should be in place:</p> <p>Collective buildings:</p> <ul style="list-style-type: none"> - Staircase or elevator are not adjacent to bedrooms - Noisy rooms (such as business, heating, other house technology rooms, rooms for garbage) are not adjacent to bedrooms. - Entrance doors do not lead from staircases or hallways directly to living rooms (no acoustically enclosed entrance halls). - On both sides of partition walls there are rooms which are used for same purposes (kitchen/kitchen, bedroom/bedroom). - Walls with plumbing installations are not adjacent to bedrooms <p>Level 1 (1 point): All conditions for > 80% of dwellings Level 2 (3 points): All conditions for > 95% of dwellings</p>	Level 1 Level 2	1 3	Submission plans	On-site visit, plans for execution (outlines, sections)	x	x	x	x	x		x
5.2 Comfort	5.2.5	Construction materials	Performance of construction materials in terms of pollutants emission	<p>Ensure good indoor air quality and avoid negative impact on occupant health from Volatile Organic Compounds (VOCs) or Formaldehyde contained in construction materials and finishes.</p> <p>All construction products and materials in contact to interior air (wall and floor coverings, paints, coatings, varnishes, ...) have been tested or are labelled (VOC and Formaldehyde emissions at least). Examples:</p> <ul style="list-style-type: none"> - All decorative paints and varnishes have been tested in accordance with UNE EN 11890-2: 20131 and comply with the limit values of phase II of maximum VOC content established in Annex II of Directive 2004 / 42 / CE2 on Decorative Painting. - Textile floor coverings have the "European Ecolabel" label or equivalent (GUT type). - The laying products (for example: glues, patching, etc.) have the EMICODE EC1 + label. - Compliance with local regulations (A+ or A label for example in France). - ... <p>All decorative paints and varnishes should also be resistant to fungi and algae in humid environments.</p> <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Plans, characteristics of construction materials in contact with indoor air	On-site visit, plans, characteristics of installed construction materials in contact with indoor air	x	x	x	x	x	x	x
5.2 Comfort	5.2.6	Daylighting and access to natural light,	Improve quality of life and mental wellbeing by providing visual delight and daylighting	Promote good daylighting and thereby reduce the need for energy to light the home.	No Yes	0 3	Plans	On-site visit, plans	x	x	x	x	x	x	x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
		especially in winter	in living spaces, bedroom, bathroom and kitchen	<p>For all types of buildings: Minimum conditions</p> <p>- General condition: The total area of the housing windows, measured in a table is greater than or equal to 1/5 of the living space.</p> <p>- Living-room and bedroom (or at least one room per dwelling for small ones): The Opening Index (OI = surface of window / usable surface of the room) stays (including open kitchen) is greater than or equal to 15%.</p> <p>- Closed kitchens OI is greater than or equal to 10%.</p> <p>For collective buildings:</p> <p>- The value of OI minus a maximum of 20% is tolerated (i.e. 12% for living-rooms and bedrooms or 8% for closed kitchens) for 20% of the housing units of the building or 20% of housing units.</p> <p>- For 50% at least of the dwellings:</p> <p>- Direct sunlight during winter in living-rooms (Min. 1.5 sunny hours on Dec 21)</p> <p>- Main bathroom has a glazed and translucent surface giving on the outside, superior or equal to 1/6 the floor space of the premises (skylights are accepted).</p> <p>No (0 point) Yes (3 points)</p>											
5.2 Comfort	5.2.7	Glare control	To ensure that there is no risk of glare in the house/dwelling, some provisions should be in place	<p>The risks of glare in the dwellings are reduced by means of special provisions while ensuring to maintain an external view:</p> <ul style="list-style-type: none">• Identify the rooms sensitive to glare (bedroom / living room / kitchen) as well as the glare conditions thereof (identification of potential sources of glare, reflection of the sun on neighbouring buildings).• Set up provisions to protect these spaces from solar radiation in order to limit glare (mobile solar protection, canopy, vegetation, etc.). When the sun protectors are used, a position of the latter allows a view on the outside. <p>Presence of means/systems (shutters and blinds, solar protection) to allow users to control their natural lighting environment at least for 50% of the dwellings:</p> <p>- The windows and French windows of the main living rooms (main bedroom, living room, kitchen) are equipped with shutters.</p> <p>- If applicable, the windows of the rooms upstairs can only be equipped with motorized blinds.</p> <p>- If presence, types and characteristics of solar protections.</p> <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Plans, characteristics of shutters	On-site visit, plans, characteristics of installed shutters	x	x	x	x	x	x	x
5.2 Comfort	5.2.8	Presence of artificial lighting systems	Presence of lighting points (type, quantity, position) and sockets	<p>Presence of means/systems to allow users to control their artificial lighting environment (all dwellings)</p> <p>Artificial light: Presence of lighting points in private areas (dwellings or houses - grouped or not):</p>	No Yes	0 2	Plans, characteristics of lighting points and sockets	On-site visit, plans, characteristics of installed lighting points and sockets	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>- A lighting point is provided on the ceiling or wall-mounted in the entrance, hallways, living room, bedrooms, kitchen (open and closed), shower rooms and toilets while respecting local standards.</p> <p>- In closed kitchens or in open kitchens whose surface is greater than or equal to 4m², a second lighting point is provided.</p> <p>- In the main bathroom, a second lighting point is provided.</p> <p>- Outside front door (houses) and lighting connection point at all other outer doors or outside storage facility (unless a lighting connection point is already available within 7,50 meters).</p> <p>Technical specifications of lighting points</p> <p>- The color rendering index (Ra) of low consumption lamps, fluorescent tubes, discharge lamps and halogens is greater than or equal to 80.</p> <p>- All fluorescents and compact fluorescent lamps are equipped with high frequency ballasts</p> <p>Sockets in dwellings</p> <p>Wall sockets and connection points should be provided in all areas of the dwelling. They are positioned for easy operation:</p> <p>- All wall sockets must be positioned at least 350 mm away from inner corners.</p> <p>In all residential areas except kitchens, all wall sockets should be placed at least 350 mm above floor level, with at least one wall socket positioned at 1050 mm above floor level.</p> <p>- In circulation areas, at least one wall socket should be placed at 1050 mm above floor level.</p> <p>No (0 point) Yes (2 points)</p>											
5.2 Comfort	5.2.9	Insulation inside dwelling - Design provisions	Reduce noise transfer (ceilings, walls, floors, doors, systems and equipment) inside houses/dwelling	<p>Following design provisions should be in place in all dwellings:</p> <p>- The interior doors of the main rooms, kitchens and bathrooms are solid and have joints on 3 sides, and are undercut 1 cm for the main rooms and 2 cm for kitchens and bathrooms.</p> <p>- The equivalent absorption area of the internal circulation to the housing is greater than or equal to 50% of the floor area.</p> <p>- Floating screeds do not run between pieces.</p> <p>- Suspended ceilings and façade cladding are not running between rooms.</p> <p>Level 1 (1 point): At least 2 conditions Level 2 (3 points): At least 3 conditions</p>	Level 1 Level 2	1 3	Submission plans, technology plans	On-site visit, plans for execution (outlines, sections), technology plans	x	x	x	x	x	x	x
5.3 Accessibility and orientation	5.3.1	Accessibility of outdoor circulations (signage around the building).	The home must be accessible.	<p>Vicinity signage</p> <p>Existence of enough signage around the building and clear identification of the building.</p> <p>The path around the building - property of the landlord - is clearly identified to facilitate identification by seniors.</p> <p>Several options are possible: differentiated floor tint, differentiated floor covering appearance, visual limits, colour coded marking.</p> <p>Signage identifies the various buildings and paths at least at the entrance of the site, at the level of the parking lot and whenever a choice of route is given to the user.</p>	No Yes	0 1	Plans, characteristics of signage	Plans, characteristics of signage	x	x	x	x	x		x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>Where there are several accesses, accessible paths are the object of a suitable signage.</p> <p>The signage has to be compliant with the requirement of the accessibility local regulations regarding position and characteristics, or the following ones:</p> <p>In the vicinity of the building - property of the landlord - the signage of orientation is easily readable:</p> <ul style="list-style-type: none"> - It presents characters with a height of 7 cm minimum - A contrast of 70% minimum between the lettering and the bottom is required - background is plain and matte. The font used is simple and without wheelbase - If no obstacle obstructs the visibility of the signage - it is cleared - and the bottom of the writing medium is between 130 cm and 160 cm from the ground - If the signage obstructed, the writing support is located at a height greater than 160 cm. <p>No (0 point) Yes (1 point)</p>											
5.3 Accessibility and orientation	5.3.2	Accessibility to parking, specific parks and drop-off areas	Specific requirements to ensure accessibility to parking spaces.	<p>General accessibility</p> <p>Parking spaces are easily accessible, close and directly connected to main entrance. When the garage is attached to the lease, the door is motorized.</p> <p>Presence of parking spaces for people with specific needs, mobility impairments.</p> <p>Presence of parking spaces with specific characteristics, located closer to access roads and the entrance of the building or elevator. In the common-entry residences, these places are connected to the entrance of the building or elevator by an accessible path.</p> <p>Characteristics according to local regulation or following:</p> <ul style="list-style-type: none"> - Number of adapted spaces according to local regulations or: - for parking facilities with 20-50 spaces: at least 1 handicapped space - for parking facilities with more than 50 spaces: 2% of total, rounded - Locations must be marked and marked on the ground. - Minimum length of 500 cm. - Minimum width of 330 cm (250 cm + 80 cm of passage). - Minimum height of passage of 215 cm (at the appropriate parking space if covered parking). - Maximum distance to main entrance 50 m. - Horizontal position within 2% and connected without threshold to the path. <p>This parking spaces are assigned priority to people with disabilities and/or specific needs</p> <p>Drop-off area</p> <p>A parking space is identified as a drop-off place. This location is located in the immediate vicinity of the path leading to the hall</p>	Level 1 Level 2 Level 3	1 3 4	Plans, characteristics of equipment	On-site visit, characteristics of installed equipment	x	x	x	x	x		x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>entrance of the building and is reserved for residents of labelled housing. When parking places of labelled housing are located near the lobby of the building, it is not necessary to set up a drop-off area.</p> <p>Level 1: General accessibility achieved (1 point) Level 2: General accessibility and parking spaces for people with specific needs, mobility impairments (3 points) Level 3: Level 2 and drop-off area</p>											
5.3 Accessibility and orientation	5.3.3	Accessibility to parking - Electric vehicles parking	Specific requirements to ensure accessibility to parking spaces.	<p>Electric vehicles parking</p> <p>For all car parks arrangements are made (excluding cabling) to accommodate terminals and an individual metering for the normal charging of electric vehicles or hybrids, for at least:</p> <ul style="list-style-type: none"> • 50% of spaces for motor vehicles with a minimum of one place, when the capacity of the car park is less than or equal to 40 places. • 75% of spaces for motor vehicles, when the capacity of the parking lot is greater than 40 places. <p>In the case of individual garages in grouped individual houses, the following requirements are met:</p> <ul style="list-style-type: none"> > Arrangements are made (excluding cabling) to accommodate later and safely a terminal for normal charging of electric or hybrid vehicles. > The garage is equipped with wiring sized to accept all car manufacturers' cars. <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Plans, characteristics of equipment	On-site visit, characteristics of installed equipment	x	x	x	x	x		x
5.3 Accessibility and orientation	5.3.4	Entry of the home	The threshold and the door to access home is accessible.	<p>Landing door - Manoeuvrability and threshold maximum height:</p> <p>The landing door of the dwelling has a width of 90 cm and requires little effort to be opened or closed. It does not include:</p> <ul style="list-style-type: none"> - Handle knob - Tubular lock <p>It is equipped with a lock three points (a single barrel).</p> <p>The threshold height of the landing door of the housing is less than 2 cm. In the presence of a chamfer, this threshold can be increased up to 4 cm.</p> <p>The threshold to access to different places (entrance hall, rubbish areas, other common areas) is less than or equal to 2 cm.</p> <ul style="list-style-type: none"> - In case of jump, it is less than or equal to 2 cm with rounded edges or equal to 4 cm with a one-third chamfer - If there is a hole or slot at ground level, its diameter or width is less than or equal to 2 cm. <p>Sufficient manoeuvring space outside front door for people using walkers and/or wheelchair bound (1500 x 1500 mm or 1850 x 1350 mm, with at least 350 mm to side of front door at lock side).</p> <p>+ For collective buildings:</p> <p>The majority number (>50%) of apartments or housing units are barrier-free designed (with above characteristics).</p>	No Yes	0 2	Plans	On-site visit, plans	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				No (0 point) Yes (2 points)											
5.3 Accessibility and orientation	5.3.5	Accessibility to main entrances - Doors	Main accesses are designed to avoid any kind of discrimination, and to be used by all and useful for all.	Access doors - Main entrances usable by all: - Easy door operation and limiting the risk of shocks. The effort required to open the entrance door of the building is less than 50 newtons. Several possibilities: - The door is automatic: swinging or sliding - The door is manual opening. In this case, the pressure is checked each semester using a pressure gauge. - When the surface of the door is entirely glazed, contrasting elements are arranged on / in the glazing at a height of between 110 cm and 160 cm. Access doors - Minimum requirements to guarantee accessibility for people with (light) mobility impairments: all access doors must comply with a set of minimum requirements. - Free width at least 850 mm. - Electric, automatic or operable by persons with limited physical strength. - Maximum threshold height 20 mm. - Glass pane in or beside door: minimum width 400 mm, lower edge maximum 1000 mm above floor level, upper edge minimum 1800 mm above floor level - 70% contrast with their immediate environment for doors with a threshold greater than 5 mm. No (0 point) Yes (2 points)	No Yes	0 2	Plans, characteristics of doors	On-site visit, plans, characteristics of installed doors,	x	x	x	x	x	x	x
5.3 Accessibility and orientation	5.3.6	Spatial requirements for storage facilities for use by occupants with mobility impairments	Some specific spaces have to be adaptable to make it suitable for use by occupants with (more serious) mobility impairments (wheelchair dependency, need of assistance in ADL activities)	Maximum distance from dwelling entrance 75 m. Accessible for people with (light) mobility impairments both from public areas and from other areas of the complex (with cross-references to various other requirements). No (0 point) Yes (1 point)	No Yes	0 1	Plans	On-site visit, plans	x	x	x	x	x		x
5.3 Accessibility and orientation	5.3.7	Accessibility of mailboxes	Mailboxes are easily accessible and comply with minimum requirements.	Mailboxes, located in the lobby of collective buildings, are easily accessible and those assigned to people with specific needs will comply with the requirements of the national/regional/local regulations or at least at a height of between 90 cm and 130 cm. No (0 point) Yes (1 point)	No Yes	0 1	Plans	On-site visit, plans	x	x	x	x	x	x	x
5.3 Accessibility and orientation	5.3.8	Manoeuvrability of doors	The aim is to ensure that the use of doors is easy for all.	Manoeuvrability of the annex room door If there is a closed additional room (garbage, bicycle, pushchair, storage facilities, etc.): the door of the room can open under the effect of a pressure lower than 50 Newtons. The pressure is checked each semester using a pressure gauge. And / or: In case of garbage bin or external container - property of the	NA No Yes	0 1	Plans, characteristics of doors	On-site visit, characteristics of installed doors	x	x	x	x	x		x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				landlord - this is at a distance less than or equal to 75 m from the building. NA if there is no additional room No (0 point) Yes (1 point)											
5.3 Accessibility and orientation	5.3.9	Communication and access control devices usable by all	Communication and access control devices have to comply with specific requirements.	Intercom / videophone system (private entrance). One or another of the following possibilities is in place: - An intercom or videophone connecting the housing to the entrance of the building is installed. In this case, the installation of the device in the housing is performed between 90 cm and 130 cm from the ground to the bottom of the device. - The intercom is connected to the phone of the tenant. The sound level is set on demand. No (0 point) Yes (1 point)	No Yes	0 1	Characteristics of the device.	On-site visit, characteristics of the installed device or demonstration of phone app	x	x	x	x	x	x	x
5.3 Accessibility and orientation	5.3.10	Orientation in space and time in common spaces	Presence of signage inside the building, to help orienting in space	For halls and other open spaces, some provisions are in place: - Presence of markers or remarkable elements punctuating the course and facilitating an intuitive orientation: These arrangements can be: the configuration of the space, the choice of coatings (visual and tactile contrast), decorative elements, or elements of signage. They must allow visitors and users circulating in the building to identify themselves intuitively, to make legible the different spaces and functions hosted, and to avoid the feeling of disorientation created by uniform environments. The elements to be minimally treated are the stairs and elevators, the entrance areas, and the intersections of the circulations. As examples, the following elements can be valued: opening on the outside, overhangs in the corridors, space of conviviality, work of art, element of decoration, use of a colour code giving a rhythm, contrast of coating visual and tactile at the level of the stairs giving access to the stairs, totems signage, opening of the stairs on the circulations ... - Optical, auditory and haptic orientation support in halls and other open spaces: The points are obtained when a tactile, auditory and visual contrast underlines the circulations. These contrasts can be obtained by different solutions. As examples, let us quote some principles: engraved guide, contrast of flooring operating on different registers: roughness, resonance of the materials, visual contrast, soft slope ... For stairs, some provisions are in place: Presence of a tactile and/or visual device of each flight of descending stairs: It is requested that a tactile and visual device be positioned upstream of each downward flight on all bearings including the intermediate bearings. This device must verify the following characteristics:	Level 1 Level 2 Level 3	1 2 3	Plans, characteristics of visual devices, paintings, signage, markers, ...	On-site visit, plans, characteristics of installed visual devices, paintings, signage, markers, ...	x	x	x	x	x		x

Taxonomy	Requirement				Scoring		Evidence		Applicability							
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co	
				<p>- Minimum width: 40 cm.</p> <p>- Implantation: in a closed staircase, the device starts at 1 lap of the nose of the first step (or 50 cm for the new one); in an open staircase, the device starts at 50 cm from the nose of the first step.</p> <p>- Positioning: the tactile device must always be parallel to the danger and away from the bearings or other horizontal circulations (awakenings with 90 ° return are prohibited). The touch device must also cover the entire width of the stairs.</p> <p>- Nose of stairs with visual contrast and non-slippery.</p> <p>For lifts, some provisions are in place: A device, located outside the lift and on all floors, allows the display of the lift level / position.</p> <p>For the corridors, some provisions are in place: > In the corridors of the floor of the labelled housing and common premises of the building, the differentiation by colour is marked:</p> <p>- the doors of the housing in relation to the service doors</p> <p>- the floors in relation to the walls</p> <p>- the plates of the dwellings , where available</p> <p>> Signage is easily readable:</p> <p>- All signage elements are made with 70% colour and luminance contrasts between the text and the medium. The bottom is united.</p> <p>- The floor numbers are indicated; they have a minimum height of 6 cm</p> <p>- The other information related to the orientation have characters of 1.5 cm minimum height.</p> <p>- The accommodations are indicated by an encrypted or alphabetical numbering of at least 6 cm in height.</p> <p>Level 1: Halls and other open spaces (1 point) Level 2: Level 1 and stairs/lifts (if present) (2 points) Level 3: Level 2 and corridors (3 points)</p>												
5.3 Accessibility and orientation	5.3.11	Physical accessibility inside the home	The living room, the kitchen, a bedroom, the toilet and the bathroom are at the same level of access as the entrance door of the apartment, without any physical obstacle	<p>The living room, the kitchen, a bedroom, the toilet and the bathroom are at the same level of access as the entrance door of the apartment, without any physical obstacle such as steps or stairs.</p> <p>All required room types are either situated at same construction layer, or access between rooms is possible by stairlift.</p> <p>- Living room and kitchen need to be on the same layer.</p> <p>- Main bedroom and main bathroom need to be on same layer. Same layer means no height differences between room floors of more than 20mm. If there is a hole or slot at ground level, its diameter or width is less than or equal to 2 cm.</p> <p>All inner doors to dwelling areas, bathrooms and toilets must be accessible to people with light mobility impairments and limited physical strength</p> <p>- Width equal/greater 850 mm</p> <p>- Manoeuvring area each side of door minimum 900 x 900 mm (exception: in toilet)</p>	No Yes	0 2	Plans	On-site visit, plans	x	x	x	x	x	x	x	

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<ul style="list-style-type: none"> - No thresholds in doors to dwelling areas - Thresholds other inner doors equal/lower 20 mm - Operable with limited physical strength (equal/less than 40 N) - Manoeuvre of doors and comfortable circulations in the toilets. <p>No (0 point) Yes (2 points)</p>											
5.3 Accessibility and orientation	5.3.12	Minimum dimensions of the different home rooms	The different areas in the homes must satisfy certain spatial standards to allow easy use.	<p>Living room master bedroom, kitchen, bathroom and private outdoor area are classified as required room types; that is to say they are essential to the home function and need to be suitable for use by an occupant with impairments. These room types need to satisfy certain minimum dimensions:</p> <ul style="list-style-type: none"> - Living room: minimum 20 m², with minimum width of 3,40. Sitting area: minimum width (parallel to main window side) 3400 mm, minimum depth 3000 mm Dining area: minimum 2500 by 2500 mm. This includes a circulation zone with a minimum width of 900 mm. - Master bedroom: minimum 12 m², with minimum width of 3,00 m. - Kitchen: minimum 6 m², with minimum width of 2,10 m. - Bathroom: no minimum area, minimum width 1,90 m. - Private outdoor area: minimum 4 m², with minimum width 1,50 m. <p>A number of room types are considered optional (not essential to the home function). When present, these rooms need to satisfy certain minimum spatial standards. It should be noted that all room types under this code are considered non-required: they need not be suitable for use by people with impairments.</p> <ul style="list-style-type: none"> - Second bedroom: minimum 8 m², with minimum width of 2,40 m. - Extra bedrooms: no minimum area, minimum width 2,10 m. Visitor bedroom: no minimum area, minimum width 2,10 m. - Office or hobby room: no minimum area, minimum width 2,10 m. - Corridors: Minimum width is 1,10 mm <p>For collective buildings: If more than 50% of the dwellings achieved these provisions, the 2 points are reached</p> <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Plans	On-site visit, plans	x	x	x	x	x	x	x
5.3 Accessibility and orientation	5.3.13	Accessibility and visibility of controls	The controls (lighting and other) of each room - including the corridors - are easily accessible from the threshold of each entrance door and are easily recognizable with the wall.	<p>The lighting controls of each room - including the corridors - are easily accessible from the threshold of each entrance door. Either the lighting controls are direct (switch, push button ...), or are switch-controlled sockets. The base of each lighting and electrical control is located at a height between 90 cm and 130 cm from the ground.</p> <p>The lighting and electrical controls of the housing are easily recognizable by a colour contrast with the wall and by a backlight or phosphorescence (night marking).</p> <p>For collective buildings: If more than 50% of the dwellings achieved these provisions, the point is reached</p>	No Yes	0 1	Plans, characteristics of systems	On-site visit, characteristics of installed systems	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				No (0 point) Yes (1 point)											
5.3 Accessibility and orientation	5.3.14	Easy use of systems (lighting in kitchen, power outlets)	To facilitate daily use of spaces, lighting and power outlets have to comply with some minimum requirements.	Lighting in the kitchen Installation of a suitable lighting: point of light, above the worktop and / or sink. Ignition control by accessible zipper or by accessible switch. There must be no direct dazzle of the users. Height of power outlets In each of the main-use living rooms (main bedroom, living room, kitchen), at least one power outlet is installed at a height that facilitates accessibility. They have to comply with the requirements of the national/regional/local accessibility regulations or they are at least at a height of between 40 cm and 130 cm from the floor. No (0 point) Yes (1 point)	No Yes	0 1	Plans	On-site visit, plans	x	x	x	x	x	x	x
5.3 Accessibility and orientation	5.3.15	Spatial requirements master/second bedroom	The master/second bedroom must be of sufficient dimensions to accommodate a single or a double bed and allow sufficient manoeuvring room	Double bed room (1 point) (considered as the "master" bedroom if many bedrooms) Minimum surface 12m² if at least 2 bedrooms in the home. Positioning area bed at least 1800 by 2100 mm. Manoeuvring zone with minimum width of 900 mm on three sides of the bed. Positioning area for closet at least 1600 by 600 mm. Manoeuvring zone between bed and closet with width equal/greater than 900 mm. Space for 1500 mm turning circle within furnished room. Single bed room (1 point) (considered as the "second" bedroom if many bedrooms) Positioning area bed at least 900 by 2100 mm. Manoeuvring zone of at least 900 mm width along length of bed. Positioning area closet at least 800 by 600 mm. Positioning area table/desk at least 1200 by 600 mm. Manoeuvring zone along bed, closet and table/desk with minimum width of 900 mm. Space for 1500 mm turning circle within furnished room. Note for "extra bedrooms": As second bedroom, with the exception of the 1500 mm turning circle	Double Single	1 1	Plans	On-site visit, plans	x	x	x	x	x	x	x
5.3 Accessibility and orientation	5.3.16	Possibility to have an office activity at home	Some elderly people continue to carry out a professional or associative activity. They therefore need a workspace at their home. This space must offer minimal requirements.	The home office must comply with the following (depending on the type of building): In homes with one or two bedrooms or in studios, the space will be enabled in any suitable area of the home with sufficient space. In dwellings with three or more bedrooms, the space will be enabled in a suitable area of the home different from the main rooms and with sufficient space. Collective buildings:	No Yes	0 2	Plans, justification of presence of an accessible coworking place in immediate surroundings	On-site visit, plans, justification of presence of an accessible coworking place in immediate surroundings	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>- Workspace in the building: an office space has been enabled for every 20 homes within the building or development available to all users. This space will have a minimum area of 14m2 and will contain, at least, two work stations.</p> <p>OR</p> <p>- "Coworking": there must be a shared resources office within 1,000 meters of the house.</p> <p>No (0 point) Yes (2 points)</p>											
5.4 Health and social care	5.4.1	Access to health facilities and physical/fitness activities	Specific spaces are available for health facilities and physical/fitness activities	<p>It is possible to access health services, physical activity spaces or fitness equipment at home.</p> <p>Specific spaces are in place in the collective building to receive:</p> <ul style="list-style-type: none"> - Medical practitioners: doctors, dentists, physiotherapists, pharmacist, ... - Nursing homes, hospitals, and rehabilitation clinics, ... <p>Specific spaces are in place in the collective building to receive:</p> <ul style="list-style-type: none"> - Cardiorespiratory exercise, muscle-strengthening exercise equipment, - Fitness or sport facilities, external exercise spaces. <p>Level 1: Health facilities (1 point) Level 2: Health and physical/fitness activities (3 points)</p>	Level 1 Level 2	1 3	Plans	On-site visit, plans	x	x	x	x	x		x
5.4 Health and social care	5.4.2	Availability of information on health and wellness	Health and Wellness awareness when it has been designed .	<p>Providing residents options and facilities for e-Health and remote medicine.</p> <p>Documentation on health/wellness, and facilities for e-Health and remote medicine.</p> <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Documentation	Documentation	x	x	x	x	x	x	x
5.5 Smart readiness	5.5.1	Predisposition of cabling of the building and common spaces	The building is prepared to receive the cabling or network equipment	<p>Pre cabling of the building</p> <p>Predisposition of the building for being linked to any external wired connection:</p> <ul style="list-style-type: none"> - The building must be able to be linked to external operators networks, in order to allow the distribution of all kinds of connections: Linking capacity to at least 2 telecommunications operators. - The building is equipped with online high-speed fibre-optic electronic communications. - Adaptability of the cabling distribution: The cabling of the building enable to easily add/remove/modify the density or location of connection points of the communicating equipment. - extension capacity (min. 30%) enabling the addition of future ICT plugs. - distribution of the terminals and plugs using predetermined extension cables/sockets (enabling easy redistribution of plugs in the building) 	No Yes	0 4	Characteristics of equipment, plans	On-site visit, plans, characteristics of installed equipment	x	x	x	x	x	x	x

Taxonomy	Requirement				Scoring		Evidence		Applicability						
	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				No (0 point) Yes (4 points)											
5.5 Smart readiness	5.5.2	Minimal connected devices	Presence of a central home management system interface for comfort devices: heating, ventilation, shutters and blinds. The ICT systems of the building's general services and users are connected to a unified Ethernet-IP network (= Smart Network).	Presence of a Smart network for building functions Presence of an IP (Internet Protocol) network, dedicated to the building and serving common areas and the housing either Ethernet, Wi-Fi or other wired or radio link protocol. The different building functions and uses are identified by the client (heating, ventilation, shutters, blinds, ...). This network dedicated to the general services systems, constitutes the unified information transport network for the communicating systems of the building. It connects the equipment of general services communicating systems, being accessible via Internet or Intranet. The network securely manages the routing function (esp. inter-VLAN). Network equipment are shared by all communicating systems of the general services. No (0 point) Yes (2 points)	No Yes	0 2	Smart network plans and characteristics	Installed smart-network characteristics	x	x	x	x	x		x
5.5 Smart readiness	5.5.3	Interoperability of equipment	Interoperability of devices for the building functions	All smart and connected devices that need to communicate (for the buildings functions) are supported by the building's IP (Internet Protocol) network infrastructure, either natively, either via a gateway. Smart and connected devices have open API, accessible in IP (Internet Protocol). No (0 point) Yes (2 points)	No Yes	0 2	Smart network plans and characteristics	Installed smart-network characteristics	x	x	x	x	x		x
5.5 Smart readiness	5.5.4	Digital Security in case of cyber-attack or hacking	In the presence of intelligent and connected equipment, the digital security of building services / functions and of residents should be ensured.	In the presence of intelligent and connected equipment, foresee the establishment of a system of protection and access against piracy (security of access to the network, mechanism of identification / protection of access to data by password , protection of access to services provided by the connected building, dynamic IP addressing, secure web services offered ...). In the event of a computer malfunction on the various connected devices, the basic functions of the dwelling are provided in degraded mode for the users of the building and the dwellings. Establishment of an Information Security Management System (ISMS) meeting at least the requirements of ISO / IEC 27001. The written documents for contractor companies will refer to the ISMS. Protection (2 points) Degraded mode (1 point) ISMS (1 point)	Protection Degraded mode ISMS	2 1 1	Smart network plans and characteristics	Installed smart-network characteristics	x	x	x	x	x		x

Taxonomy	Requirement				Scoring		Evidence		Applicability							
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co	
5.5 Smart readiness	5.5.5	Predisposition of cabling of private spaces	The building is prepared to receive the cabling or network equipment, which gather the connections of private communicating systems of the private spaces	<p>Predisposition of cabling of all the private spaces of the building</p> <p>The building is prepared to receive the cabling or network equipment, which gather the connections of private communicating systems of the private surfaces. Cabling of the Smart Network. Installation of:</p> <ul style="list-style-type: none">- the sheathing/pipes/structure that will convey the cabling,- the cabling, or a modular pre-cabling (removable, modular and upgradable cabling in private spaces). <p>Presence of minimal infrastructure required (in all dwellings in collective buildings):</p> <p>The indoor installation includes the termination and patching devices required for telephone access, audio-visual communication services (terrestrial television, satellite and cable networks) and digital data (internet). The brewing devices are placed in the communication board of the housing.</p> <p>The indoor installation includes star-type wiring for the provision and connection of terminal sockets in a minimum number of rooms:</p> <ul style="list-style-type: none">- living-room,- at least one of the bedrooms (master bedroom). <p>The indoor facility also accommodates and supplies equipment for electronic communications operators and accessories installed by the occupant when connecting to the high-speed or high-speed fibre-optic network.</p> <p>Networks are based on the international standard Ethernet-IP.</p> <p>Level 1: Predisposition</p> <p>Level 2: Predisposition and minimal infrastructure</p>	Level 1 Level 2	1 3	Characteristics of equipment, plans, smart network plans and characteristics, sockets	On-site visit, plans, characteristics of installed equipment, installed smart network plans and characteristics, sockets	x	x	x	x	x	x	x	x

5.7 Outdoor Access cluster: table of requirements

Applicability: De = in design; Cs = under construction; Op = in operation; Ny = not yet in use; Us = in use; In = Individual house; Co = collective building

TABLE 13 – REQUIREMENTS FOR THE OUTDOOR ACCESS CLUSTER

Taxonomy	Requirement				Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
6.1 Home and building	6.1.1	Access to outdoor areas	Conditions for entering and moving around outdoor spaces must meet requirement in terms of universal design*, accessibility and usability. * Universal design principles: integrated into the neighbourhood; easy to approach, enter and move about in; easy to understand, use and manage; and flexible, cost-effective and adaptable over time.	For all dwellings: The width of the door opening is 80 cm minimum. The height of the access threshold to the outside - balcony, terrace, garden - is: - Either less than or equal to 2 cm in the presence of a chamfer (recommended) - Either higher than the recommended heights, in this case it is necessary to add: • an access step that meets the following conditions: . Non-slip coating (R9 (DIN 51130)), or in accordance with CEN/TS 16165 method B (R11) or method C (0.45-0.80) . Free space in front of the step of 90 cm minimum on the balcony / terrace / garden . Step of 28 cm of depth and a width identical to that of the opening. And / or: • a bar of support, when the wall is located at least 50 cm of the threshold. In case of technical impossibility, for example, it is also possible to install a support bar fixed to the ground. No (0 point) Yes (2 points)	No Yes	0 2	Plans, characteristics of coatings and equipment (bar)	On-site visit: dimensions, characteristics of coatings	x	x	x	x	x	x	x
6.1 Home and building	6.1.2	Outdoor Spaces - Accessibility and Usability	Outdoor spaces must meet requirements in terms of universal design* for accessibility and usability (technical requirements) * Universal design principles: integrated into the neighbourhood; easy to approach, enter and move about in; easy to understand, use and manage; and flexible, cost-effective and adaptable over time.	Size: The outdoor space (private or semi-private) must have a sufficient size that allows all occupants to sit outside. Collective buildings: Share of housing units with a direct allocated open space of more than 4 m² Town house /one-/two-family houses: Private garden: Share of housing units with a private garden of more than 100 m² Accessibility: The outdoor space (private or semi-private) must be accessible (at least 1 characteristic below) - The outdoor spaces must be adjacent or be very close to the house or housing. - Allow easy access to all occupants, including users with reduced mobility. - Be accessible only to the occupants of the designated dwellings. For individual houses: - At least one outdoor area must be accessible - At least one outdoor area must be directly accessible from the	Level 1 Level 2 Level 3 Level 4 Level 5	1 2 3 4 5	Plans, technical specifications	On-site visit: dimensions, characteristics of installations	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>living room</p> <p>Technical requirements: The outdoor space (private or semi-private) must meet technical requirements for usability (at least 3 characteristics below) - Provide lighting to illuminate the door, the home number and location of the entry system, separate to a P.I.R. light or general external light - Provide porches or shelters at front doors for improved weather protection at the door - Provide different colours to front doors for visual contrast and wayfinding - Provide different colours to exteriors – wayfinding and breakup of uniformity - Plant at front door with scents and sounds to help guidance to door - Provide wider doors, both external and internal - Provide an entrance door with a clear width of between 800mm and 850mm - Entrance and hallway in the home: provide space for storing outdoor wear, coats, shoes and bags - Entrance and hallway in the home: provide additional storage space for a buggy and/or shopping trolley - Entrance and hallway in the home: provide opening (slabbed over) in first floor for future installation of platform lift</p> <p>Size, accessibility and technical requirements are reached for: Level 1 (1 point): 10 to ≤20% of dwellings/houses Level 2 (2 points): >20 to ≤40% of dwellings/houses Level 3 (3 points): >40 to ≤60% of dwellings/houses Level 4 (4 points): >60 to ≤80% of dwellings/houses Level 5 (5 points): > 80 % of dwellings/houses</p>											
6.1 Home and building	6.1.3	View quality	View quality from the inside to the outside should make it possible to see the sky, the soil and the landscape.	<p>Requirements to ensure view quality (from inside to outside) for at least 50% of the dwellings:</p> <p>Outer windows adjoining the sitting area of the living room must satisfy certain minimum requirements pertaining to size</p> <ul style="list-style-type: none"> - Minimum width 1500 mm. - Lower glass edge equal/lower 750 mm above floor - Higher glass edge equal/higher 1900 mm above floor - No horizontal, view-obstructing discontinue in glass area <p>No (0 point) Yes (2 points)</p>	No Yes	0 2	Plans, technical specifications	On-site visit: dimensions, characteristics of installations	x	x	x	x	x	x	x
6.2 Immediate environment	6.2.1	Easy accessibility for reduced mobility occupants	Reduced mobility occupants may be able to access in and out of the building and dwelling.	<p>For at least 50% of the dwellings, allow easy access to all occupants, including users with reduced mobility: at least 1 of the following characteristics</p> <ul style="list-style-type: none"> - Provide accessible car parking and good set down points / communal parking close to the home - Provide a dropped kerb for ease of access onto the pavement - Provide ease of access to home's front door – ensure that paving 	No Yes	0 2	Plans, technical specifications of pavements	On-site visit: dimensions, characteristics of installations	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				<p>within the property boundary is firm, non-slip and non-reflective</p> <p>No (0 point) Yes (2 points)</p>											
6.2 Immediate environment	6.2.2	Presence of vegetation	Presence of vegetation in the project is an attractive characteristic for the majority of older people.	<p>Presence of:</p> <p>> Green spaces (in the ground, on slab, roof, wall, plants in bins integrated into the architectural project, ...).</p> <p>OR</p> <p>> At least 30% of the area of the plot in open green spaces (i.e. without construction below). In the case of an urban site not presenting on the plot of open-ground possibilities, the minimum thickness of the substrate must be 1.5m.</p> <p>Characteristics of planted species: Planted species are complementary to each other, non-invasive, well adapted to the climate and terrain. They rely on diverse plant strata and participate in the diversity of habitats (ponds, hedges, groves, gravel, ...). In case of use of substrate (example of green roofs), it is adapted to the desired type of vegetation and according to the climate and the conditions of exposure of the site (sun, wind). Invasive or invasive species are proscribed. The introduction of allergenic species is minimized (70% to 80% of species planted with a low risk class, for example), especially allergens classified at risk 4 to 5 (such as: cypress, birch, grasses, alder, olive, sagebrush).</p> <p>In the case of landscaping [1], the maintenance program is provided to the managers. For green spaces, the document presents at least the following topics:</p> <ul style="list-style-type: none"> • reasoned management of plants for each typology encountered (massif, hedge, banks, spontaneous flora ...); • the preventive measures put in place; • management of plant health status (biological control); • how to use watering. <p>[1] Improvements on the architecture of the building (facade, green roof, ...) or on the plot (water point, green spaces, ...)</p> <p>No (0 point) Yes (3 points)</p>	No Yes	0 3	Plans, characteristics of species, maintenance program	On-site visit, characteristics of installed species, maintenance contract	x	x	x	x	x	x	x
6.2 Immediate environment	6.2.3	Neighbourhood quality	The neighbourhood quality can be measured by the number of vacant housing.	<p>Percentage of vacant housing units: measured at the neighbourhood scale</p> <p>Level 1 (1 point): ≤40% Level 2 (3 points): ≤25% Level 3 (5 points): ≤10%</p>	Level 1 Level 2 Level 3	1 3 5	Calculation at neighbourhood scale, from local authorities	Calculation at neighbourhood scale, from local authorities	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
6.3 Neighbourhood or village	6.3.1	Proximity to frequent existing public transportation	The location of the home should be close to frequent existing public transportations	<p>Options for transportation: The location of the home should be close to existing transport in an effective distance.</p> <ul style="list-style-type: none"> encourage the location of development close to existing transport define the effective shortest distance in metres from the assessed home to local public means of transportation <p>Proximity and frequencies of public transport: In the analysis of the site, an inventory of the main transport stations (bus, tram, train, ...) near the operation is carried out. It specifies the types of transport, their distance to the entrance of the site, as well as the frequencies of passages.</p> <p>The two indicators considered are:</p> <ul style="list-style-type: none"> Number of transport lines accessible within 800m or 400m Frequency of transport lines for at least 1 line <p>Level 1 (1 point): 1 line ≤800m with frequency >20min Level 2 (2 points): 1 line ≤400m with frequency ≤ 20min or 1 line ≤ 800m with frequency ≤ 10min Level 3 (3 points): 2 lines ≤400m with frequency ≤ 20min or 2 lines ≤ 800m with frequency ≤ 10min Level 4 (3 points): more than 2 lines ≤400m with frequency ≤ 10min</p>	Level 1 Level 2 Level 3 Level 4	1 2 3 4	Plans of local transport facilities and roads infrastructures	Plans of local transport facilities and roads infrastructures	x	x	x	x	x	x	x
6.3 Neighbourhood or village	6.3.2	Proximity to alternative transports (e.g. free bikes, vehicle stations, etc)	Alternative transports offer should be present in an effective distance.	<p>This requirement encourage the location close to alternative transportation modes (actual or in new development) or free bikes (electric or not) and/or electric vehicles stations within a distance.</p> <p>Level 1 (1 point) : Yes for at least one alternative mode ≤800m Level 2 (2 points) : Yes for at least one alternative mode ≤400m</p>	Level 1 Level 2	1 2	Plans of local transport facilities	Plans of local transport facilities	x	x	x	x	x	x	x
6.3 Neighbourhood or village	6.3.3	Proximity to roads	The location of the home should be close to existing roads in an effective distance.	<p>Options for transportation: The location of the home should be close to existing transport in an effective distance.</p> <ul style="list-style-type: none"> encourage the location of development close to existing transport define the effective shortest distance in metres from the assessed home to local public means of transportation <p>Access to main roads depending on the context (urban / rural areas)</p> <p>Level 1 (1 point): One express road or highway <5km / One express road or highway <20km Level 2 (2 points): One express road or highway <1km / One express road or highway <10km Level 3 (3 points): Boulevard or avenue or main street <250m / Structuring local road < 5km Level 4 (4 points): Boulevard or avenue or main street direct connexion / Structuring local road < 1km</p>	Level 1 Level 2 Level 3 Level 4	1 2 3 4	Plans of local roads infrastructures	Plans of local roads infrastructures	x	x	x	x	x	x	x
6.3 Neighbourhood or village	6.3.4	Proximity to pedestrian routes	Pedestrian routes need to be safe for people	<p>This requirement encourages the location close to safe pedestrian routes.</p> <p>Immediate proximity with a developed and secure network of</p>	No Yes	0 2	Plans of local infrastructures	Plans of local infrastructures	x	x	x	x	x	x	x

Taxonomy		Requirement			Scoring		Evidence		Applicability						
Category	Code	Title	Objective	Description	Scale	Points	Design / Construction	Operational	De	Cs	Op	Ny	Us	In	Co
				walkways No (0 point) Yes (2 points)											
6.3 Neighbourhood or village	6.3.5	Proximity to parks and recreational facilities	Access to parks and open spaces promote communal living.	Short distance to be able to walk to such spaces promote communal life. Are considered: Public parks, gardens, recreation green spaces, lakes and rivers, etc. Parks and open spaces within the development are also taken into account. Level 1 (1 point): 1 space ≤1000m Level 2 (2 points): 1 space ≤500m or 2 spaces ≤1000m Level 3 (5 points): 1 space in plain sight or 2 spaces ≤500m	Level 1 Level 2 Level 3	1 2 3	Plans of local facilities	Plans of local facilities	x	x	x	x	x	x	x
6.3 Neighbourhood or village	6.3.6	Proximity to services	Providing basic service facilities, e.g. medical cares, groceries, schools, sport centres, etc. in a short walking or bike distance from home promotes communal living and socialization opportunity.	Distance to following services/amenities are considered: Most frequent ones : - Shopping for daily needs (examples: bakery, supermarket, market, ...); Restaurants, café, bars - Basic services (examples: town hall, post office, bank, ...) Less frequent ones: - Care facilities (examples: general practitioner, pharmacy, hospital, ...) - Educational facilities (examples: Primary / secondary school, Kindergarten , ...) - Sport facilities (examples: fitness, swimming pool, ...) - Cultural facilities (examples: museums, cinema, theatres, ...) Level 1 (1 point): At least 2 most frequent services/amenities ≤ 1000 m Level 2 (2 points): At least 2 most frequent services/amenities ≤ 500 m and 2 less frequent ones ≤ 1000 m Level 3 (3 points): At least all frequent and less frequent services/amenities ≤ 1000 m Level 4 (4 points): At least all frequent and less frequent services/amenities ≤ 500 m	Level 1 Level 2 Level 3 Level 4	1 2 3 4	Plans of local facilities	Plans of local facilities	x	x	x	x	x	x	x

5.8 List of regulations applicable to the building

Table 14 lists all Regulations that are applicable to the assessed building. They will be reported in the Commitment document (Appendix 5.2.1).

TABLE 14 – LIST OF APPLICABLE REGULATIONS

Please declare the regulations applicable to the building	Level			Building	
	European	National	Local or Regional	New	Existing
ACCESSIBILITY					
Indoor					
Outdoor					
....					
SAFETY					
Fire protection					
Air quality					
Construction Materials					
Safety of use (Inside/Outside/Parking areas/...)					
...					
INDOOR COMFORT					
Acoustic					
HVAC					
Thermal comfort					
Lighting					
...					
ENERGY EFFICIENCY					
Thermal insulation					
Technical Regulations of Electrical Installations					
Sustainability					
...					
E-HEALTH					
...					
DIGITAL SECURITY AND DATA PROTECTION					
General regulations	GDPR				
...					
IT OPENNESS					
...					
AFFORDABILITY					
Rent control	Housing Act				
...					

The following characteristics (Table 15 to Table 18) may be considered if there is no applicable regulation in the country or region.

TABLE 15 – CHARACTERISTICS ON ACCESSIBILITY

ACCESSIBILITY	Evidences	
	In design / Under construction	In operation
<p>Accessibility of outdoor circulations (ramps, coatings, lighting, ...).</p> <p>The home must be accessible.</p> <p>Exterior paths characteristics</p> <p>The building where the home is must be accessible, the exterior circulations should be flat and in those cases where it is not possible it can be solved with ramps. Access route to the home from the road is suitable for use by people with mobility impairment:</p> <ul style="list-style-type: none"> - Flat exterior circulation (height difference equal/lower than 250 mm), or with limited ramps if site constraints (maximum incline 4%, rest stops at the top and bottom of the ramp, every 7 m (dimensions 120 x 140 cm) and in the event of a change of direction greater than 45° (allowing a 150 cm rotation space)) - The exterior soil coatings must facilitate the movement of people, they have to guarantee to be adequate, not loose, non-slippery, with adequate lighting day and night. - For the paths leading to the entrance of the building and the collective premises, the cumulative conditions below are fulfilled: <ul style="list-style-type: none"> - The grounds are not loose - The coatings of the paths are non-slippery (slipperiness in foot shod equivalent to R9 (DIN 51130)), or in accordance with CEN/TS 16165 method B (R11) or method C (0.45-0.80) - The minimum width of the paths is 120 cm. - The level of illumination on the ground is at least 20 lux: by the break of sensors of presence, crepuscular probes or permanent lighting at night. 	<p>Plans, characteristics of soil coatings, ramps, lighting</p>	<p>Plans, characteristics of installed soil coatings, ramps, lighting</p>
<p>Design of outdoor circulations</p> <p>Outdoor circulations (accessible paths, stairs, terraces, etc) are non-freezing and non-slippery.</p>	<p>Characteristics of outdoor circulations</p>	<p>On-site visit, characteristics of installed</p>

ACCESSIBILITY	Evidences	
	In design / Under construction	In operation
The floor coverings of common outdoor circulations (accessible paths, stairs, terraces, etc.) are non-freezing and non-slippery in accordance level R9 (DIN 51130)), or in accordance with CEN/TS 16165 method B (R11) or method C (0.45-0.80).		outdoor circulations
<p>Accessibility to main entrances - Access level</p> <p>Main accesses are designed to avoid any kind of discrimination, and to be used by all and useful for all.</p> <p>Access level - Minimum requirements: The building is preferably on the ground floor. If several steps are present, the cumulative conditions below are fulfilled:</p> <ul style="list-style-type: none"> - The installation of an access ramp according to the local standards or regulations (maximum incline 5%) - A staircase with 17 cm steps maximum height, 28 cm deep and 120 cm minimum width - A handrail on each side of the steps of the staircase - The flooring of the steps is non-slip, its slip coefficient is at least equivalent to R9 (DIN 51130)), or in accordance with CEN/TS 16165 method B (R11) or method C (0.45-0.80). - The threshold to access to different places (entrance hall, rubbish areas, other common areas) is less than or equal to 2 cm. 	Plans, characteristics of access level	On-site visit, plans, characteristics of access level
<p>Accessibility of indoor circulations</p> <p>Characteristics of indoor circulations (but outside individual dwellings), to guarantee accessibility and security.</p> <p>For accessibility reasons, elevation differences in circulation areas should be avoided whenever possible. If unavoidable, elevation differences should be no more than 100 mm and be bridged with ramps with an incline of 5% or lower. Thresholds at doors to outdoor circulation areas must be maximum 20 mm in height. The ramps have a handrail (or guardrail) on each side, at a height of 85 cm (+/- 5 cm) from the finished floor. For disabled persons, all horizontal circulations serving apartments have handrails on both sides, with no protruding angle and 85 cm (+/- 5 cm) from the finished floor.</p> <p>In the common spaces inside the building the horizontal and vertical circulations are free of obstacles.</p> <p>Doors in circulation areas: For accessibility reasons, doors in complex circulation areas must satisfy certain requirements:</p>	Plans, characteristics of handrails, doors	On-site visit, plans, characteristics of installed handrails, doors

ACCESSIBILITY	Evidences	
	In design / Under construction	In operation
<p>Doors should be electric, automatic, or operable by persons with limited physical strength.</p> <p>Minimum manoeuvring area 1500 x 1500 mm on each side of door. There should be at least 500 mm width to the side of the door on the lock side on the opening side of the door and 350 mm on the other side (does not apply for automatic doors).</p>		
<p>Design of indoor circulations</p> <p>Circulations are unsafe spaces, especially in terms of slippery, incline, potential obstructions.</p> <p>Circulations must comply with following characteristics:</p> <ul style="list-style-type: none"> - Minimum dimensions: minimum width is 120 cm - Maximum incline 250 mm. If the incline is more than 250 mm, in addition to a banister, handrails must be mounted on both sides between 800 and 1000 mm above surface level. Handrails must be easily grasped. - Free of abrupt height differentials. - Handrails if they are inclined. - Anti-slip properties in accordance with DIN 51130 (R9) or CEN/TS 16165 method B (R10) or method C (0.30-0.80) - The floor is unobstructed: if laying carpets or grid, they are of the same level and have holes or slots whose width or diameter are less than or equal to 2 cm. 	<p>Plans, characteristics of coverings, signalisation</p>	<p>On-site visit, characteristics of installed coverings, signalisation</p>
<p>Accessibility of indoor stairs</p> <p>Morphology of the stairs facilitating their use and guaranteeing security.</p> <p>Characteristics of stairs comply with:</p> <p>All stairs within the building (but outside individual dwellings) must satisfy the local regulation or following requirements:</p> <ul style="list-style-type: none"> - Straight stairs with closed steps - Minimum width 1200 mm - Landing provided for every 1800 mm of ascent. Minimum dimensions of landing 1200 x 1200 mm. - Maximum step height 210 mm, minimum step depth 185 mm <p>Presence of safety devices like handrails and other in the case of the existence of risk of falling.</p>	<p>Plans</p>	<p>On-site visit, plans</p>

ACCESSIBILITY	Evidences	
	In design / Under construction	In operation
<p>Design of staircases</p> <p>Staircases are the origin of a large number of accidents. Almost all accidents occur in the descent. Therefore specific characteristics are expected to avoid these risks:</p> <ul style="list-style-type: none"> - Dimensions Width equal/greater than 900 mm. Shape: straight, max 2 quarter turns, no spiral staircase. Stairs with closed risers Minimum free floor space at top and bottom 900 by 1100 mm. At top, no door turning circles to cross this free floor area, at bottom of stairs this is only allowed for entrance, storage and fuse box doors - Installation of handrails for all stairs, complying with minimum dimensions and positions. In the staircase, which serves the housing labelled, a handrail is installed on both sides of the stairs, at a height between 80 cm and 100 cm. The handrail is a diameter between 3 to 5 cm and is easily grasped. The axis of the handrail is located at a minimum distance of 5 cm from the wall. It extends on both sides of the staircase for a length of 30 cm. It is easily visible and has a visual contrast with the wall. A handrail can be installed on one side, if the staircase is helical. For straight stairs, and stairs with one quarter turn, handrails on both sides are required. For stairs with two quarter turns, one handrail is required. - Non-slip coverings (slipperiness coefficient) The covering of the stairways serving the housing labelled is non-slip: its coefficient of slipperiness is at least equivalent to R9 (DIN51130) (measured in feet shod). - Marks on stair noses, with the following requirements: <ul style="list-style-type: none"> - Be of contrasting colour compared to the rest of the staircase - Be non-slippery - Present an overhang less than 10 millimetres from the riser 	Plans, characteristics of coverings, handrails, marks, signalisation	On-site visit, characteristics of installed coverings, handrails, marks, signalisation

ACCESSIBILITY	Evidences	
	In design / Under construction	In operation
<ul style="list-style-type: none"> - Signalisation of beginning and end of stairs. - By a warning band located at the top of each flight of stairs 50 cm from the first step. This band must be a tactile mark and be visually contrasted - By a riser of a minimum height of 10 cm, on the first and last steps of the staircase, visually contrasted with the walk <p>Evidence in design: Plans, characteristics of coverings, handrails, marks, signalisation</p> <p>Evidence in operation: On-site visit, characteristics of installed coverings, handrails, marks, signalisation</p>		
<p>Accessibility to all levels with lifts - Levels served</p> <p>All usable levels of the building must be accessible with a lift.</p> <p>Levels of service served by elevator, including mezzanine levels: Servicing of all levels of current use by each lift. A lift is present in collective building of more than one level, when the number of housing for the same cage is greater than or equal to 15. All dwellings at an elevation of more than 500 mm above street level must have lift access. Design specifications of lifts (excluding goods lifts) in complexes:</p> <ul style="list-style-type: none"> - Interior dimensions minimum (1100 x 2100 mm) - Manoeuvring area outside every stop at least 2100 x 2100 mm - Minimum width of lift doors 900 mm - Lift door electric or automatic - Call buttons outside lift door, at least 500 mm from interior corners 	Plans	On-site visit, plans
<p>Accessibility to all levels with lifts - Dimensions</p> <p>All usable levels of the building must be accessible with a lift.</p>	Plans, characteristics of lifts	On-site visit, plans,

ACCESSIBILITY	Evidences	
	In design / Under construction	In operation
<p>For use by people with mobility impairments, lifts in complexes need to comply with requirements regarding dimensions, equipment and operation</p> <p>Dimensions:</p> <ul style="list-style-type: none"> * Inside dimensions at least 1200 x 2100 mm * Free door width at least 900 mm <p>Equipment:</p> <ul style="list-style-type: none"> * Banister along at least one side, mounted between 800 and 1000 mm above floor level * If more than three stops, seating (fold-up seat) must be provided * Mirror on back wall running at least from 1000 to 1900 mm above floor level (mirror to be positioned on side wall in case of walk-through lift) * Pane indicating house numbers and storeys <p>Operation:</p> <ul style="list-style-type: none"> * Automatic doors * Call buttons outside lift mounted between 900 and 1200 mm above floor level, at least 350 mm away from inner corners; in contrasting colour with background. Identical requirements apply to operating buttons inside lift 		characteristics of installed lifts
<p>Non-slip flooring in indoor spaces</p> <p>The need to ensure the safety of people have led to the improvement of regulations regarding the design and requirements of pavements, especially on wet rooms, and indoor-outdoor spaces such as halls...</p> <p>Minimum slipping coefficients must be achieved for these spaces:</p> <ul style="list-style-type: none"> - Halls of collective buildings: slip coefficient is at least equivalent to R9 (DIN 51130)), or in accordance with CEN/TS 16165 method B (R11) or method C (0.45-0.80) - Bathrooms: slip coefficient is at least equivalent to A according to DIN 51097 or with CEN/TS 16165 method A (grad A) - Kitchens: In the kitchen or kitchen area, the floor coverings are anti-slip R10 (DIN 51130)), or in accordance with CEN/TS 16165 method B (R11) or method C (0.45-0.80) 	Characteristics of coverings	Characteristics of installed coverings
<p>Spatial requirements for bathroom and kitchen for use by occupants with mobility impairments</p> <p>Some specific spaces have to be adaptable to make it suitable for use by occupants with (more serious) mobility impairments (wheelchair dependency, need of assistance in ADL activities)</p>	Plans	On-site visit, plans

ACCESSIBILITY	Evidences	
	In design / Under construction	In operation
<p>Main bathroom must satisfy certain spatial requirements. These also include requirements for toilets where these are combined with the main bathroom.</p> <ul style="list-style-type: none"> - Positioning area shower at least 1100 by 900 mm. Floor flush with rest of bathroom. - Minimum distance between faucet and wall and/or other equipment is 550 mm. - Minimum positioning area washbasin 1100 x 1600 mm. Minimum distance between faucet and wall and/or other equipment is 550 mm. - If toilet included: positioning area at least 1100 x 1900, with minimum distance to wall or other equipment of 550 mm <p>If bathroom (and potential included toilet) have to be adapted:</p> <ul style="list-style-type: none"> - Main bathroom must be situated at entrance level, or at level that can be made accessible with a stairlift - 1500 mm turning circle (may overlap with current shower) - manoeuvring area on one side of toilet of at least 900 by 1200 mm (may overlap with current shower) - Manoeuvring area to one side of positioning area for shower seat of at least 900 mm by 1200 mm (may overlap with current amenities if these can be removed without major construction works) - Walls near shower, washbasin, toilet suitable for mounting various aids (handgrips, shower seats) - Adaptations may not require major construction and installations work. <p>Kitchen:</p> <ul style="list-style-type: none"> - Total positioning area for worktop + sink + cooker equal/greater than 2700 by 600 mm. - Positioning area fridge at least 600 by 600 mm - Positioning area dishwasher at least 600 by 600 mm. - Manoeuvring zone along entire length at least 1200 mm. - A floor area of at least 0.3 m2 is provided in the kitchen or storeroom or any other proposal put in place by the client, for sorting and intermediate storage of household waste. (This space can be located under the sink, with the provision of specific equipment.) 		

TABLE 16 – CHARACTERISTICS ON SAFETY

SAFETY	Evidences	
	In design / Under construction	In operation
<p>Fire protection</p> <p>In order to prevent fires in homes and minimize major catastrophes, providing fire protection devices such as fire alarm, special fire extinguisher system, or constructive provisions.</p> <p>In order to prevent fires in homes and minimize major catastrophes, providing fire protection devices such as fire alarm, special fire extinguisher system, or constructive provisions:</p> <ul style="list-style-type: none"> - Presence of fire alarm facilities. <p>There is a home detector at least in the main area of every apartment (multi-family building) or on every floor of the house (single family house, detached house).</p> <p>Fire detectors in place in transport area of apartment buildings.</p> <ul style="list-style-type: none"> - Requirements for separate fire sub-section components. <p>The requirements of bearing units, ceilings, balcony panels and sloping roofs (with a less than 60 degree compared to horizontal view) in terms of fire resistance classes are met and comply with current regulations for new buildings.</p> <p>The requirements in terms of fire resistance classes of precast construction units (walls, ceilings) are met and comply with current regulations for new buildings.</p> <p>The requirements in terms of fire resistance classes of partition walls are met and comply with current regulations for new buildings.</p> <ul style="list-style-type: none"> - Special fire extinguisher. <p>Extended automatic fire-fighting equipment or sprinkler in place</p> <ul style="list-style-type: none"> - Access doors must offer free route of escape in case of fires: it must be possible to open them without a key from the inside. 	<p>Plans, characteristics of systems</p>	<p>On-site visit, characteristics of systems</p>
<p>Safe use of car parks</p> <p>Underground car parks have to be safe, according that they are used daily. Specific threat in these spaces is an inappropriate indoor air quality due to cars.</p>	<p>Characteristics of the detection system</p>	<p>On-site visit, characteristics of the</p>

SAFETY	Evidences	
	In design / Under construction	In operation
Underground car parks are equipped with a detection system for carbon monoxide and nitrogen oxides. This system allows control of the ventilation system of the car park as well as emergency signalling if the acceptable thresholds are exceeded.		detection system

TABLE 17 – CHARACTERISTICS ON INDOOR COMFORT

INDOOR COMFORT	Evidences	
	In design / Under construction	In operation
<p>Acoustic - Insulation between dwellings and with common spaces</p> <p>Maximise acoustic comfort and provide privacy between dwellings/homes, considering fair protection from noises of neighbouring apartments and from common spaces in multiple dwelling buildings: halls, staircases, lifts in common spaces; systems and equipment of neighbouring dwellings.</p> <p>The following design provisions should be in place:</p> <p>Grouped houses</p> <ul style="list-style-type: none"> - Noisy rooms (such as kitchen, garage, heating, other house technology rooms, rooms for garbage) are not adjacent to bedrooms. - On both sides of partition walls between houses there are rooms which are used for same purposes (kitchen/kitchen, bedroom/bedroom). - Walls with plumbing installations are not adjacent to bedrooms. <p>Minimum insulation for partition walls: DnT,W < 55dB for collective buildings DnT,W < 60dB for grouped houses</p> <p>Minimum insulation for partition ceilings: DnT,W < 55dB</p>	Submission plans	On-site visit, plans for execution (outlines, sections)

INDOOR COMFORT	Evidences	
	In design / Under construction	In operation
<p>Acoustic - Insulation inside dwelling</p> <p>Reduce noise transfer (ceilings, walls, floors, doors, systems and equipment) inside houses/dwelling.</p> <p>Respect a 35 dB DnT,w (according to ISO 717-1) of noise between living-room, kitchen, bedroom AND bedroom.</p>	<p>Submission plans, technology plans</p>	<p>On-site visit, plans for execution (outlines, sections), technology plans</p>
<p>Thermal comfort - Presence of HVAC systems</p> <p>Relevant and performing HVAC systems (heating, ventilation and air conditioning) must be installed according to climatic conditions.</p> <p>Performance requirements heating / cooling installations: Installations must be designed to achieve the following minimum temperatures under locally applicable norms/regulation for winter temperatures and wind speeds:</p> <ul style="list-style-type: none"> - Living room and kitchen: 22 C - Bathroom: 24 C - Bedroom / other rooms: 20 C <p>Specific characteristics:</p> <ul style="list-style-type: none"> - If presence of a cooling system, when the windows are opened, this system is interrupted (presence of bay rebate contact). - Shoulder season: In the presence of underfloor heating, a loop by room with electrothermal head is set up for a better management of heating in shoulder season. 	<p>Plans, characteristics of HVAC systems</p>	<p>On-site visit, plans, characteristics of installed HVAC systems</p>
<p>Thermal comfort - Ventilation</p> <p>Ensure good indoor air quality throughout the house: consistent supply of fresh air, controlled ventilation, limitation of moisture (mould growth and condensation) and of the concentration of harmful pollutants in the air within the house</p> <p>Buildings without ventilation systems All rooms where occupants stay for extended periods of time (living area, bedrooms, offices/hobby rooms etc) must have at least one</p>	<p>Plans, characteristics of ventilation system</p>	<p>On-site visit, plans, characteristics of installed ventilation system</p>

INDOOR COMFORT	Evidences	
	In design / Under construction	In operation
<p>window (surface not less than 1/8 of the useful surface of the room) that can be opened by occupant with limited physical strength.</p> <p>Buildings with ventilation systems A ventilation system is in place, according to local regulation and:</p> <ul style="list-style-type: none"> - Minimum air flow complies with EN16798-1. - At least a simple flow controlled ventilation is in place: <ul style="list-style-type: none"> - mechanical ventilation system is installed (simple individual humidity controlled flow). - Interior doors are at least 1cm undercut. If the kitchen is accessible by a single door, it is 2cm undercut. If a bathroom equipped with a gas appliance is accessible via a single door, it is 2cm undercut. - In case of double flow ventilation <ul style="list-style-type: none"> - filters and dirt detectors are present in the blowing chamber, the change of the filters is carried out at the end of the works and before the occupation of the dwellings (allowing in particular the elimination of the dust related to the building site), - the owner undertakes to implement the monitoring of the system (frequency of visits, verified points), - the plant is installed in the living space and / or the ducts are insulated and the efficiency of the exchanger / central monobloc must be greater than 80% - the dismantling of the ventilation and recovery boxes is feasible without requiring the disconnection of the ventilation network, in order to carry out the routine maintenance and maintenance operations. - All air intakes are positioned at more than 8 meters: <ul style="list-style-type: none"> - areas where the vehicles are; - a place that gives off odours (place of storage of household waste, factory, etc.); - exhaust air vents; - outlets of flue products and flue gases. 		
<p>Lighting</p> <p>Main accesses are designed to avoid any kind of discrimination, and to be used by all and useful for all.</p> <p>The lighting controls of each space - including the corridors - are easily accessible from the threshold of each entrance door. Either the lighting controls are direct (switch, push button ...), or are switch-controlled sockets. The base of each lighting and electrical control is located at a height between 90 cm and 130 cm from the ground. The lighting and electrical controls of the housing are easily recognizable by a colour contrast with the wall and by a backlight or</p>	Plans, characteristics of lighting systems	On-site visit, plans, characteristics of lighting systems

INDOOR COMFORT	Evidences	
	In design / Under construction	In operation
<p>phosphorescence (night marking).</p> <p>Corridor lighting (for collective buildings):</p> <p>The lighting of the corridors serving the labelled housing and the common premises presents on average, on the path, the same intensity: 80 lux.</p> <p>There should be no shadows, no direct glare from the users on the area or no reflection on the signage.</p> <p>The lighting control base is at a maximum height of 130 cm from the ground and at a distance 50 cm lifts and stairs.</p> <p>3 solutions may be chosen to prevent a situation without any lighting:</p> <ul style="list-style-type: none"> - Lighting system by presence detection (preferred solution). The detection must cover the entire space concerned. The mid-bearings are equipped with detector. - Permanent lighting of 40 Lux, except time of voluntary lighting. - Timer higher than 2 minutes. Dimmer at the end of the timer. The luminous intensity is evaluated at a height of 150 cm from the ground. 		

TABLE 18 – CHARACTERISTICS ON DIGITAL SECURITY AND DATA PROTECTION

DIGITAL SECURITY AND DATA PROTECTION	Evidences	
	In design / Under construction	In operation
<p>Digital Security and protection of personal data</p> <p>Confidentiality and protection of personal data</p> <p>The installed equipment and systems (for building functions: heating, cooling,...) comply with the provisions of the new European protection of individuals with regard to personal data and the free movement of such data (General Data Protection Regulation).</p>	Smart network plans and characteristics	Installed smart-network characteristics

5.9 Residents' Surveys: table of questions

5.9.1 Sites in design or under construction

45 potential questions have been identified for the survey in sites in design or under construction and have been reported in Table 19.

TABLE 19 – QUESTIONNAIRE FOR SITES IN DESIGN OR UNDER CONSTRUCTION

Please, tick the appropriate answer for each question. There are neither right nor wrong answers. Questionnaire is anonymous.

Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
D010	My future home is located in a pleasant environment		4	3	2	1	0	0
D020	I will be able to access basic shops (groceries, pharmacies, etc.) and services within a short walking distance.		4	3	2	1	0	0
D030	My building and home will be easily accessible from a physical point of view.		4	3	2	1	0	0
D040	Everything in my future home is planned for functionality and comfort, e.g. layout, light, temperature.		4	3	2	1	0	0
D050	There, I could easily imagine living independently.		4	3	2	1	0	0
D060	My future home environment will allow me to keep in touch with the people I care about e.g. family, friends, neighbours.		4	3	2	1	0	0
D070	My future home environment is adequate to receive visitors e.g. over lunch or an afternoon coffee.		4	3	2	1	0	0
D080	In my future home environment, it will not be possible to receive overnight visitors.		0	1	2	3	4	0
D090	I will be able to easily control who can access my home.		4	3	2	1	0	0
D100	I will have the option to personalise (arrange and decorate) my future home according to my own taste and preferences.		4	3	2	1	0	0



Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
D110	My future home is designed so it can be adapted over time - in case my needs change.		4	3	2	1	0	0
D120	My future home is designed for me to be able to engage in activities of my choice (keeping pets, performing my hobbies, receiving visitors etc.)		4	3	2	1	0	0
D130	I am confident that maintenance and repair costs in my future home will be manageable for me (electric wiring, plumbing, heating systems, painting, floor covering, etc.).		4	3	2	1	0	0
D140	I am confident that my direct housing costs (rent/mortgage) will be a manageable part of my overall household budget?		4	3	2	1	0	0
D150	I am not confident that, in my future home, I will be able to manage my housing costs also over the longer term (in the next 10-15 years).		0	1	2	3	4	0
D160	I am not well informed about existing financial benefits (grants, subsidies) that exist to adapt my future home when needed.		0	1	2	3	4	0
D180	My future home will offer possibilities to connect and use digital technologies.		4	3	2	1	0	0
D190	I will be able to exert control over my future home systems (access control, thermal control, shutters, etc.) and adjust these to my needs and preferences.		4	3	2	1	0	0
D200	In my future home the conditions that enable digital communications to help me to stay in touch with my family and friends, will not be guaranteed.		0	1	2	3	4	0
D210	My future home will be able to offer me the necessary infrastructure to install and operate assistive devices and monitoring systems if I wish to.		4	3	2	1	0	0
D220	I am confident I will be able to afford the cost of the remote systems (mobile devices, Internet, etc.)		4	3	2	1	0	0
D230	I consider my future home environment will be supportive, and will enable my family and friends to easily help me in my daily activities and future care needs (they will be able to have fast Internet access, they will be able to stay overnight, they will be able to easily reach my home).		4	3	2	1	0	0
D240	I am not aware of existing or future home-based services that can be accessed in my future home e.g. homecare services, cleaning services; social support services; home maintenance and repair services; home adaptation services.		0	1	2	3	4	0



Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
D250	I will be able to easily find information, or get assistance, about age-friendly home services.		4	3	2	1	0	0
D260	From my future home, I will be able to easily find information on and get access to various home-based and /or age-friendly home services.		4	3	2	1	0	0
D270	My future home will be sufficiently connected to green areas (e.g. parks, walking paths, countryside, etc.)		4	3	2	1	0	0
D280	I am not aware that there are places within accessible walking distance from my future home with spiritual significance for me (e.g. religious/cult places, nature).		0	1	2	3	4	0
D290	This project gives you the opportunity to choose a future home environment that will align with your needs and preferences.		4	3	2	1	0	0
D300	I believe I will feel part of a community when I will be living here.		4	3	2	1	0	0
D310	I think I will be able to fully enjoy my own personal spaces in my future home		4	3	2	1	0	0
D320	My future home is part of a project where I will have a say about who I live with?		4	3	2	1	0	0
D330	In my future home I will be able to access outdoor spaces where I will feel comfortable, safe, and well.		4	3	2	1	0	0
D340	The surroundings of my future home feel safe and will have the potential to become familiar to me.		4	3	2	1	0	0
D350	I consider the neighbourhood of my future home pleasant, accessible, and safe for pedestrians.		4	3	2	1	0	0
D360	I do not think I will feel safe in my future home.		0	1	2	3	4	0
D370	I think I will develop a sense of attachment to my future home and this place.		4	3	2	1	0	0
D380	The surroundings of my future home will provide me with opportunities to participate in social activities (volunteering, culture, physical activities; entertainment etc.)?		4	3	2	1	0	0
D390	I can imagine I will feel at home in my future home.		4	3	2	1	0	0
D410	I will be able to easily find places to sit and rest in the surroundings of my future home (e.g. benches, bus stops, etc.)		4	3	2	1	0	0
D420	There, I already know people with whom I feel close.		4	3	2	1	0	0

Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
D430	There, I already know people that I can count on in case of necessity or an emergency.		4	3	2	1	0	0
D440	Around my future home there are no places planned which could be suitable for informal chats or small gatherings with neighbours (e.g. a porch, a patio, a backyard, a balcony, a common area, a lobby)		0	1	2	3	4	0
D450	I think I will be able to enjoy some pleasant views from my future home		4	3	2	1	0	0
D460	My future home will be located in a place with easy access to good public transportation.		4	3	2	1	0	0
D470	I do not think the public transportation services around my future home are not adapted to older people, frail persons or to persons with disabilities.		0	1	2	3	4	0

5.9.2 Sites in operation

47 potential questions have been identified for the survey in sites in operation and have been reported in Table 20.

TABLE 20 – QUESTIONNAIRE FOR SITES IN OPERATION

Please, tick the appropriate answer for each question. There are neither right nor wrong answers. Questionnaire is anonymous.

Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
Q010	My home is located in a pleasant environment		4	3	2	1	0	0
Q020	I can access basic shops (groceries, pharmacies, etc.) and services within a short walking distance		4	3	2	1	0	0
Q030	My building and home are easily accessible, from a physical point of view		4	3	2	1	0	0
Q040	My home is comfortable and functional (layout, light, temperature, etc.)		4	3	2	1	0	0



Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
Q050	Here, I feel that I can live independently		4	3	2	1	0	0
Q060	From my home environment, I am able to keep in touch with people I care about (family, friends, neighbours, etc.)		4	3	2	1	0	0
Q070	My home environment is adequate to receive visitors e.g. over lunch or for afternoon coffee		4	3	2	1	0	0
Q080	My home environment is not adequate to receive overnight visitors		0	1	2	3	4	0
Q090	I can easily control who has access to my home		4	3	2	1	0	0
Q100	I have the options to personalise (arrange and decorate) my home according to my taste and preferences		4	3	2	1	0	0
Q110	My home is designed so it can be adapted over time in case my needs change		4	3	2	1	0	0
Q120	I have the possibility at home to arrange my space to engage in activities of my choice (keeping pets, performing my hobbies, receiving visitors etc.)		4	3	2	1	0	0
Q130	The maintenance and repair costs in my home are manageable (electric wiring, plumbing, heating systems, painting, floor covering, etc.)		4	3	2	1	0	0
Q140	My direct housing costs (rent/mortgage) are a manageable part of my overall household budget		4	3	2	1	0	0
Q150	I will not be able to manage my current housing costs over the longer term (in the next 10-15 years)		0	1	2	3	4	0
Q160	I am not aware of existing financial benefits (grants, subsidies) that exist to adapt my home when needed		0	1	2	3	4	0
Q170	I can rely on people that can help me out on repair in my home		4	3	2	1	0	0
Q180	My current home offers the possibilities to connect and use digital technologies		4	3	2	1	0	0
Q190	I can exert control over my home systems (access control, thermal control, shutters, etc.) and adjust these to my needs and preferences		4	3	2	1	0	0
Q200	I do not consider it important to have access to conditions for digital communications (mobile devices, Internet, etc.) that allow me to stay in touch with my family and friends		0	1	2	3	4	0

Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
Q210	My home has the infrastructure to deploy assistive devices and monitoring systems to help me in my daily life		4	3	2	1	0	0
Q220	I can afford remote systems (mobile devices, Internet, etc.)		4	3	2	1	0	0
Q230	My current home environment is supportive and enables my family and friends to easily help me with my daily activities and current care needs (they can have fast Internet access; they can stay overnight; they can easily reach my home)		4	3	2	1	0	0
Q240	I am not aware of existing home-based services that can be accessed e.g. homecare services, cleaning services; social support services; home maintenance and repair services; home adaptation services		4	3	2	1	0	0
Q250	I can easily find information, or get assistance, on age-friendly home services	x	4	3	2	1	0	0
Q260	If needed, I can easily find information on, and get access to various home-based and/or age-friendly services directly from my home	x	4	3	2	1	0	0
Q270	My home is sufficiently connected to green areas (e.g. parks, walking paths, countryside, etc.)		4	3	2	1	0	0
Q280	There are no places within accessible walking distance from my home with spiritual significance to me (e.g. religious/cult places, nature)		0	1	2	3	4	0
Q290	I have chosen to live here		4	3	2	1	0	0
Q300	I feel part of a community living here		4	3	2	1	0	0
Q310	I can fully enjoy my own personal space in my home		4	3	2	1	0	0
Q320	I get to decide who lives, or not, in my home		4	3	2	1	0	0
Q330	I have access to outdoor spaces where I feel comfortable, safe and well		4	3	2	1	0	0
Q340	The surroundings of my home feel familiar and safe.		4	3	2	1	0	0
Q350	I consider the neighbourhood pleasant, accessible and safe for pedestrians		4	3	2	1	0	0
Q360	I do not feel safe at home		0	1	2	3	4	0
Q370	I would like to continue to live in my current home		4	3	2	1	0	0
Q380	The surroundings of my home provide me with opportunities to participate in social activities (volunteering, culture, physical activities; entertainment, etc.)		4	3	2	1	0	0



Code	Statement	NA	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Do not wish to answer
Q390	This is a place where I feel at home		4	3	2	1	0	0
Q400	I find it easy to set limits to potential intrusive relationships in the surroundings of my home		4	3	2	1	0	0
Q410	I can easily find places to sit and have a rest in the surroundings of my home (e.g. benches, bus stops, etc.)		4	3	2	1	0	0
Q420	I know people close by with whom I am close		4	3	2	1	0	0
Q430	I know people close by that I can count on in case of necessity or an emergency		4	3	2	1	0	0
Q440	There are no places around my home suitable for informal chats or gatherings with neighbours (like a porch, a patio, a backyard, a balcony, a common area, a lobby)		0	1	2	3	4	0
Q450	I find I can enjoy some pleasant views from my home		4	3	2	1	0	0
Q460	My home is located in a place with easy access to a good public transportation		4	3	2	1	0	0
Q470	The public transportation services around my home are not adapted to older people, frail persons, or to persons with disabilities		0	1	2	3	4	0



D4.4 | Technical Reference Framework - Final version



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