



D8.1 – Comprehensive Accessibility Assessment Framework

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Executive Summary

Deliverable **D8.1 – Comprehensive Accessibility Assessment Framework** presents the final methodology developed under **Task 8.1: Development of Comprehensive Accessibility Assessment Scheme**. The deliverable establishes a structured, transparent, and evidence-based framework for assessing accessibility performance in the built environment. Its purpose is to define how accessibility should be evaluated, scored, weighted, interpreted, and reported across different building contexts.

The framework responds to the need for a comprehensive assessment scheme that goes beyond fragmented compliance checking. Accessibility is treated as a multidimensional performance concept, covering not only physical access, but also usability, safety, environmental comfort, orientation and wayfinding, interaction with digital and smart systems, and social inclusion. This reflects the understanding that an accessible building is not only one that can be entered, but one that can be safely, comfortably, independently, and meaningfully used by people with diverse needs.

The final assessment framework is structured around five consolidated Disability Type groups and five Accessibility Domains. These are operationalised through 63 Evaluation Criteria, each of which has been defined, atomised into progressive levels of implementation, and supported by a market-readiness screening of relevant digital, smart-building and assistive technologies.

The methodology is structured around a clear assessment logic:

Disability Type → Assessment Dimension → Evaluation Criterion → Performance Indicator → Score → Weighted Result

The first layer of the framework is formed by **Disability Types**, which represent different user needs and functional limitations. These include physical disabilities, sensory disabilities, cognitive disabilities, neurodiverse conditions, communication impairments, mental health conditions, chronic health conditions, temporary and situational limitations, age-related limitations, and multiple disabilities.

The second layer consists of five consolidated **Assessment Dimensions**:

1. **Spatial & Physical Accessibility**
2. **Safety & Environmental Comfort**
3. **Cognitive & Navigational Accessibility**
4. **Digital Interaction & Smart Usability**
5. **Social Inclusion & Human Experience**

These dimensions organise the assessment into the main areas of accessibility performance. Each dimension is further translated into **Evaluation Criteria**, which form the operational layer of the framework. Each criterion is linked to a clear definition, one or more performance indicators, evidence requirements, and scoring guidance.

The framework uses a **0–5 scoring scale** for each Evaluation Criterion. The scale ranges from **0 – Not applicable** to **5 – Best practice / exemplary accessibility performance**. Scores are assigned based on verified evidence, including site measurements, design drawings, BIM or model data, photographs, operational records, monitoring data, and user feedback where relevant.

To reflect the relative importance of different accessibility aspects, the methodology applies weights at three levels: **Disability Type weights**, **Assessment Dimension weights**, and **Evaluation Criterion weights**. All weights are normalized to ensure consistency in aggregation. Non-applicable criteria are excluded from the relevant calculation, and the remaining weights are re-normalized.

The mathematical model aggregates results progressively from criterion level to building level. Criterion scores are first converted into **Adjusted Criterion Scores**, then aggregated into **Assessment Dimension Impact Scores**, **Disability Type Total Impact Scores**, and finally the **Overall Building Score**.

The Overall Building Score is expressed on a 0–5 scale and translated into an accessibility class from **Class E to Class A**.

The framework produces results at four levels:

- **Overall Building Score**, expressing the final accessibility performance of the building;
- **Disability Type scores**, showing how the building performs for different user groups;
- **Assessment Dimension scores**, identifying strengths and shortcomings across accessibility domains;
- **Evaluation Criterion scores**, identifying specific issues requiring corrective action.

This multi-level interpretation allows the framework to function both as an assessment tool and as a diagnostic tool. It enables assessors and stakeholders to understand not only the overall accessibility performance of a building, but also the specific shortcomings that should be prioritised for improvement.

The assessment procedure is organised into ten steps: defining the building type and scope, confirming applicable disability types and assessment dimensions, selecting evaluation criteria, assigning weights, collecting evidence, scoring criteria, calculating weighted results, determining the accessibility class, and identifying improvement priorities.

The outputs of the assessment can be used by accessibility assessors, designers, engineers, building owners, facility managers, public authorities, policymakers, and project partners. The framework supports accessibility upgrades, design improvements, operational monitoring, benchmarking, future certification schemes, and harmonization activities.

D8.1 does not endorse, rank or recommend specific suppliers or products. However, for each Evaluation Criterion, a market-readiness screening was conducted to verify whether relevant digital, smart-building, assistive technology or automation solutions are currently available. This screening supports the practical implementability of the framework but should not be interpreted as procurement guidance.

Overall, D8.1 provides a comprehensive methodology for shifting accessibility evaluation from isolated compliance checks to structured performance assessment. It supports a more transparent, comparable, and evidence-based approach to accessibility in the built environment and contributes to the broader objective of promoting inclusive, safe, usable, comfortable, and participatory spaces for all users.

Table of Contents

1	Introduction and Scope of the Framework.....	10
1.1	Scope and objectives of the deliverable	10
1.2	Scope of the assessment.....	11
1.3	Intended Users.....	12
2	Conceptual and Methodological Basis	16
2.1	Accessibility as a Multidimensional Assessment Concept.....	16
2.2	Core Assessment Logic	17
2.3	Assessment Principles	19
2.4	Boundaries of the Methodology	22
3	Structure of the Accessibility Assessment Framework.....	24
3.1	Disability Types	24
3.2	Assessment Dimensions	26
3.3	Evaluation Criteria.....	28
3.4	Performance Indicators	29
4	Scoring and Weighting Methodology	31
4.1	Scoring Scale	31
4.2	Scoring Rules.....	31
4.3	Weighting Levels	33
4.4	Normalization of Weights.....	34
4.5	Treatment of Non-Applicable Criteria	35
5	Mathematical Model and Classification.....	38
5.1	Variables and Indices.....	38
5.2	Adjusted Criterion Score.....	40
5.3	Assessment Dimension Impact Score	41
5.4	Disability Type Total Impact Score	42
5.5	Overall Building Score	43
5.6	Accessibility Classification	44
5.7	Interpretation of Results	45
5.8	Nomenclature	47
6	Assessment Procedure and Use of Results	49
6.1	Assessment Workflow	49
6.2	Evidence Collection	51
6.3	Quality Assurance of the Assessment.....	52
6.4	Reporting of Results	53
6.5	Policy Implications	55
	Annex 1 – Evaluation Criteria.....	58

List of Figures

Figure 1 Intended users of the Comprehensive Accessibility Assessment Framework across the building life cycle.....	14
Figure 2 Core assessment logic linking disability types, assessment dimensions, evaluation criteria, indicators, scoring, and weighted results.	18
Figure 3 Assessment principles underpinning the Comprehensive Accessibility Assessment Framework	21
Figure 4 Disability Types used in the Accessibility Assessment Framework.....	25
Figure 5 Assessment Dimensions used in the Accessibility Assessment Framework.	27
Figure 6 Scoring and weighting methodology of the Comprehensive Accessibility Assessment Framework.	37
Figure 7 Assessment workflow and outcomes of the Comprehensive Accessibility Assessment Framework.	50

List of Tables

Table 1 Boundaries and exclusions of the AccesS accessibility assessment methodology.	23
Table 2 Disability Types used in the Accessibility Assessment Framework.	24
Table 3 Assessment Dimensions used in the Accessibility Assessment Framework.	28
Table 4 Evaluation Criterion definition template.....	29
Table 5 Indicative types of Performance Indicators.	30
Table 6 Indicative types of Performance Indicators.	30
Table 7 Scoring scale for Evaluation Criteria.....	31
Table 8 Scoring scale for Evaluation Criteria. – Indicative Example for EC 1.1.1.....	33
Table 9 Weighting levels of the Accessibility Assessment Framework.....	33
Table 10 Normalization requirements for weighting levels.....	35
Table 11 Variables and indices used in the mathematical model.	38
Table 12 Accessibility classification based on the Overall Building Score.	44

Table 13 Levels of interpretation of assessment results.	46
Table 14 Nomenclature for the mathematical model.	47
Table 15 Assessment workflow.....	49
Table 16 Expected contents of the assessment report.....	54
Table 17 Evaluation Criterion-level reporting template.	55
Table 19 Evaluation Criteria and Justification DT1 – Physical Disability.....	58
Table 20 Evaluation Criteria and Justification DT2 – Sensory Disability.	60
Table 21 Evaluation Criteria and Justification DT3 – Cognitive & Neurodiversity.....	61
Table 22 Evaluation Criteria and Justification DT4 – Communication & Mental Health.....	62
Table 23 Evaluation Criteria and Justification DT5 – Multiple / Situational.	63

List of Acronyms and Abbreviations

Please see section 5.8

1 Introduction and Scope of the Framework

1.1 Scope and objectives of the deliverable

Deliverable D8.1 – Comprehensive Accessibility Assessment Framework presents the methodology developed under Task 8.1, Development of Comprehensive Accessibility Assessment Scheme, within WP8, Development and Harmonization of Accessibility Assessment Scheme. The deliverable defines the methodological basis through which accessibility performance in buildings can be assessed, scored, weighted, interpreted, and reported in a structured and evidence-based manner.

The main objective of D8.1 is to transform the conceptual, analytical, and stakeholder-informed foundations established in WP3 into an operational accessibility assessment framework. WP3 provided the backbone for the development of the AccesS assessment scheme by reviewing existing accessibility-related standards, certification approaches, and legislative frameworks; identifying gaps and transferable principles; integrating stakeholder insights; and introducing the initial quantitative assessment logic based on Disability Types, Assessment Dimensions, Evaluation Criteria, weights, and scores.

Building on this work, D8.1 further develops and consolidates the assessment methodology into a comprehensive framework that can be applied across different building contexts. The framework moves beyond fragmented checklist-based or compliance-only approaches and establishes a coherent structure for evaluating accessibility as a multidimensional building performance attribute. It addresses physical accessibility, usability, safety, environmental comfort, cognitive and navigational accessibility, digital interaction, smart usability, and social inclusion.

A core objective of the deliverable is to define clear and measurable Evaluation Criteria that can be observed, verified, and scored. Each criterion is linked to relevant Performance Indicators and evidence requirements, enabling assessors to determine the level of accessibility performance achieved by a building, space, system, or service. The deliverable also defines the scoring and weighting methodology, including the aggregation of criterion-level results into Assessment Dimension scores, Disability Type scores, and an Overall Building Score.

D8.1 also provides the methodological basis for the practical implementation of the assessment scheme through the AccesS Accessibility Assessment Tool. The tool operationalises the framework by supporting the structured collection of evidence, the assignment of scores, the application of weights, the calculation of results, and the presentation of accessibility performance outputs. In this way, the deliverable acts as the bridge between the analytical foundations developed in WP3 and the digital, harmonised assessment process pursued under WP8.

The deliverable is structured as follows.

Section 1 introduces the scope and objectives of the deliverable, explains its relation to other AccesS tasks and deliverables, and defines the intended scope and users of the Accessibility Assessment Framework.

Section 2 presents the conceptual and methodological basis of the framework. It explains accessibility as a multidimensional assessment concept, introduces the core assessment logic, and describes the main principles and boundaries of the methodology.

Section 3 defines the structure of the Accessibility Assessment Framework. It presents the Disability Types, Assessment Dimensions, Evaluation Criteria, and Performance Indicators that form the operational layers of the assessment scheme.

Section 4 presents the scoring and weighting methodology. It explains the scoring scale, scoring rules, weighting levels, normalisation of weights, and treatment of non-applicable criteria.

Section 5 presents the mathematical model and classification approach. It defines the variables, indices, aggregation formulas, Overall Building Score, accessibility classification, and interpretation of results.

Section 6 describes the assessment procedure and use of results. It covers the assessment workflow, evidence collection, quality assurance, reporting of results, stakeholder use, and policy implications. Annex 1 provides the Evaluation Criteria that support the practical application of the framework.

D8.1 is directly connected to the work carried out in WP3, which established the analytical and methodological foundations for the AccesS accessibility assessment scheme. D3.1 reviewed existing certification schemes, accessibility standards, legislative frameworks, and stakeholder insights, and introduced the first structure of the AccesS assessment model. This included the use of Disability Types, Assessment Dimensions, Evaluation Criteria, scoring logic, and weighted aggregation as the basis for a quantitative and adaptable accessibility assessment model.

The work of WP3 therefore provides the backbone for WP8. While WP3 focused on identifying the knowledge base, gaps, principles, and stakeholder needs that should inform the AccesS certification and assessment approach, WP8 translates this foundation into a harmonised and operational assessment scheme. D8.1 builds on the WP3 outputs by refining the assessment structure, expanding the Evaluation Criteria, defining Performance Indicators, formalising the scoring and weighting methodology, and specifying how results are calculated and interpreted.

The deliverable also supports subsequent technical and implementation activities of the AccesS project. In particular, the framework defined in D8.1 provides the methodological basis for the AccesS Accessibility Assessment Tool, through which the assessment scheme is realised in practice. The tool is expected to support assessors and stakeholders in applying the methodology consistently, collecting evidence, assigning scores, calculating weighted results, and generating structured outputs on accessibility performance.

1.2 Scope of the assessment

The Comprehensive Accessibility Assessment Framework is designed to assess the accessibility performance of buildings and built environment settings in a structured, measurable, and comparable manner. Its scope covers the conditions that influence whether users with diverse needs can access, use, understand, navigate, and participate in the built environment safely, independently, and with dignity.

The framework applies to a wide range of building types and built environment contexts, including residential, commercial, educational, healthcare, cultural, public administration, transport-related, and mixed-use facilities. It can be used for entire buildings, specific building zones, public or semi-public spaces, circulation routes, entrances, shared facilities, service areas, and user interaction points. The methodology is therefore flexible enough to support both whole-building assessments and targeted assessments of specific spaces or systems.

A central feature of the framework is that accessibility performance is assessed across different disability types. The methodology recognises that accessibility barriers are experienced differently by users with physical, sensory, cognitive, neurodiverse, communication-related, age-related, temporary, situational, chronic health, or multiple accessibility needs. For this reason, the assessment does not rely on a single generic user profile. Instead, it evaluates how the built environment performs in relation to different user needs and functional limitations.

The scope of the assessment includes both conventional accessibility features and digitally enabled accessibility solutions. The framework therefore considers spatial, physical, environmental, cognitive, digital, operational and social aspects of accessibility. Particular attention is given to smart-building systems, IoT sensors, adaptive controls, digital interfaces, wayfinding applications, monitoring systems and digital twin integration, where these can enhance independent, safe and comfortable use of buildings.

The scope of the assessment is multidimensional. It includes physical accessibility, such as entrances, circulation routes, doors, ramps, lifts, sanitary facilities, reachability, manoeuvring space, and the usability of building elements. It also includes environmental accessibility and comfort, such as lighting,

air quality, thermal comfort, acoustics, safety, and emergency conditions. These aspects are essential because an accessible building should not only be physically reachable, but also safe, comfortable, and usable for people with diverse needs.

The framework also assesses digital and smart usability aspects of accessibility. This includes the accessibility of controls, interfaces, information systems, digital services, smart building systems, feedback mechanisms, response times, and automation features where these are relevant to user interaction. Digital elements are considered part of the assessment when they influence a user's ability to operate, understand, control, or benefit from building systems and services.

Navigational and cognitive accessibility are also within the scope of the framework. The assessment considers how easily users can understand the layout of a building, identify routes, locate key destinations, interpret signage, receive information, and move safely through the built environment. This includes wayfinding systems, visual cues, tactile or auditory information, spatial legibility, route predictability, and the clarity of communication.

The social dimension of accessibility is also addressed. The framework considers whether buildings support participation, independence, dignity, and inclusion in shared spaces and activities. This includes the usability of public furniture, rest and interaction points, shared equipment, participation spaces, and facilities that allow users with diverse needs to engage equally in social, educational, professional, cultural, or civic activities.

The framework can be applied at both design stage and operational stage. At design stage, it supports the review of drawings, specifications, BIM models, design assumptions, and planned accessibility provisions before construction or renovation is completed. At operational stage, it supports the assessment of existing buildings through site observations, measurements, documentation, facility management information, monitoring data, and user feedback where appropriate.

The assessment therefore covers both planned accessibility and actual accessibility in use. This distinction is important because a building may appear compliant in design but still present barriers during operation due to poor maintenance, blocked routes, inaccessible controls, inadequate signage, malfunctioning systems, or unsuitable environmental conditions. By addressing both stages, the framework supports not only accessibility-by-design, but also accessibility-in-operation.

1.3 Intended Users

The Comprehensive Accessibility Assessment Framework is intended to support a range of users involved in the planning, design, assessment, operation, monitoring, and improvement of accessibility in the built environment. Since accessibility is affected by decisions made across the full building life cycle, the methodology is designed to be understandable and applicable by both technical and non-technical stakeholders.

Accessibility assessors are the primary users of the framework. They may use the methodology to conduct structured assessments of buildings, spaces, systems, and services. For assessors, the framework provides a common assessment logic, a set of evaluation criteria, performance indicators, scoring rules, and weighting procedures. This supports consistency, transparency, and comparability in the assessment process.

Designers and engineers can use the framework during the design, renovation, or technical upgrading of buildings. For architects, civil engineers, mechanical engineers, electrical engineers, and building services specialists, the methodology can support the early identification of accessibility requirements and the integration of accessibility considerations into design decisions. It can also be used to check whether proposed solutions address the needs of different disability types and assessment dimensions before implementation.

Building owners can use the framework to understand the accessibility performance of their buildings and to identify priority areas for improvement. The methodology can support decision-making on renovation planning, investment priorities, compliance strategies, and long-term accessibility upgrading. By providing structured results, the framework helps building owners move from general awareness of accessibility issues to evidence-based action.

Facility managers are also important users of the methodology, particularly at the operational stage of a building. Accessibility performance is not determined only by design features, but also by how the building is maintained, managed, and used. Facility managers can use the framework to monitor operational accessibility conditions, identify shortcomings, ensure that accessible routes and systems remain functional, and support continuous improvement over time.

Public authorities may use the framework as a reference for policy development, monitoring, benchmarking, and future accessibility-related certification or incentive schemes. The methodology provides a structured basis for comparing accessibility performance across different buildings or building types. It can also support public authorities in identifying common accessibility gaps and informing renovation, inclusion, and built environment policies.

Project partners involved in harmonization and implementation can use the framework as the methodological basis for subsequent WP8 activities. In particular, the framework provides the foundation for aligning assessment practices, developing implementation guidance, supporting knowledge sharing, and contributing to harmonized approaches for accessibility evaluation. It can therefore serve as a common reference point for partners working on standards alignment, stakeholder engagement, pilot application, and future uptake of the scheme.

Technology providers, smart-building integrators, assistive technology providers and digital twin developers may also use the framework indirectly, as it identifies the types of digital and automated functions that can support higher levels of accessibility performance.

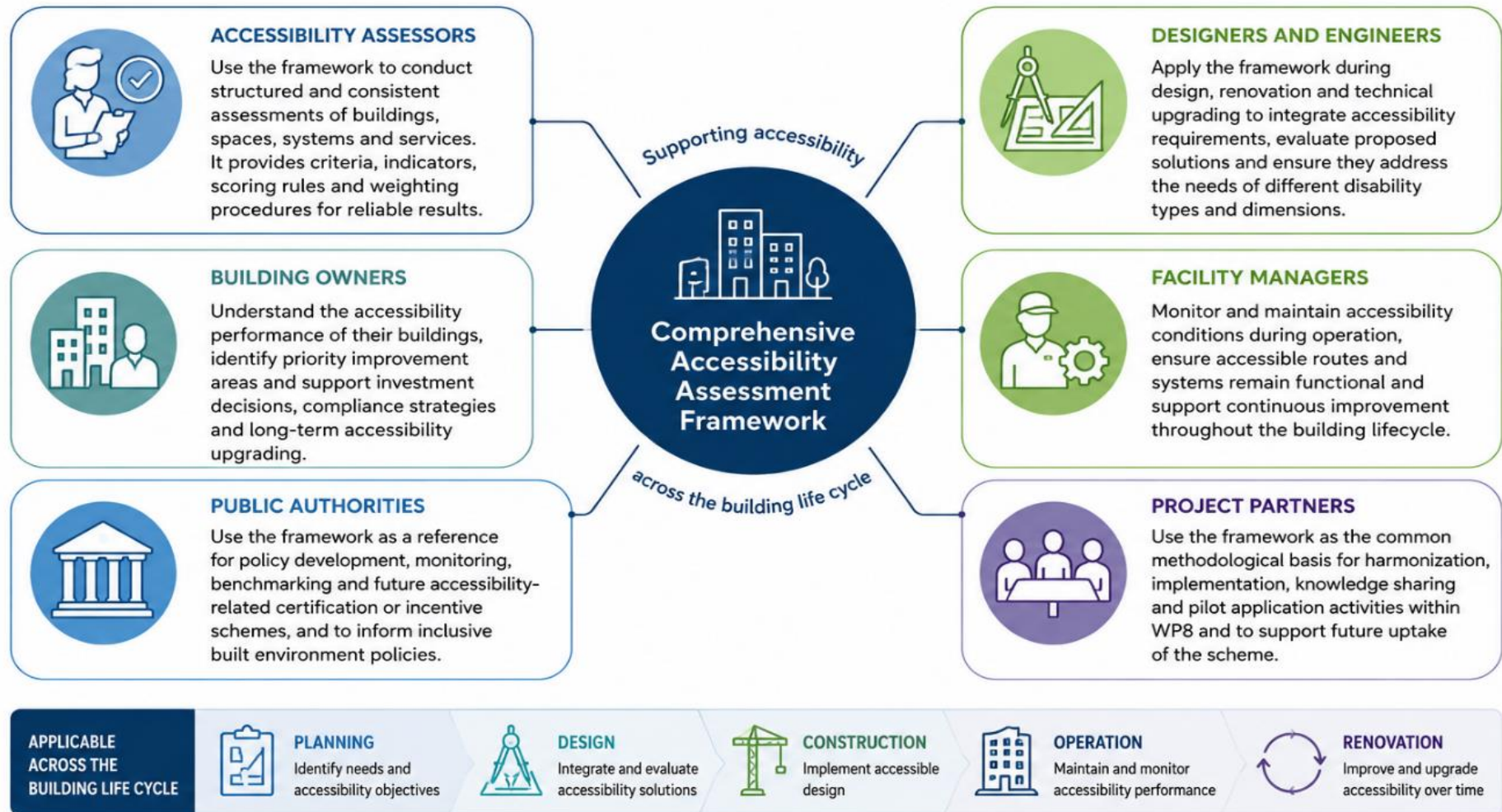


Figure 1 Intended users of the Comprehensive Accessibility Assessment Framework across the building life cycle.

Deliverable **D8.1 – Comprehensive Accessibility Assessment Framework** forms the methodological foundation of **WP8 – Development and Harmonization of Accessibility Assessment Scheme**. While WP8 as a whole addresses both the development and harmonization of accessibility assessment approaches, D8.1 focuses specifically on defining the assessment methodology that underpins these activities.

Within WP8, D8.1 provides the structured basis for assessing accessibility performance in the built environment. It defines the key components of the framework, including disability types, assessment dimensions, evaluation criteria, performance indicators, scoring rules, weighting principles, and the calculation of accessibility performance results. In this way, the deliverable establishes the common methodological language needed for the consistent evaluation of accessibility across different building contexts.

The role of D8.1 is therefore not limited to describing accessibility requirements. It provides a systematic assessment logic that enables accessibility to be evaluated, scored, weighted, and interpreted in a transparent way. This makes it possible to identify accessibility shortcomings, compare performance across different assessment dimensions, and support evidence-based decision-making for future improvements.

D8.1 also creates the basis upon which later WP8 activities can build. In particular, the methodology developed in this deliverable can support subsequent work on harmonization, implementation guidance, knowledge sharing, and potential certification approaches. By defining how accessibility is assessed, D8.1 provides the reference framework that can be further aligned with standards, adapted to different national or building contexts, and used to support practical implementation.

The deliverable therefore acts as the bridge between the conceptual objectives of WP8 and their practical application. It translates the ambition of developing a comprehensive accessibility assessment scheme into a structured methodology that can be used by assessors, designers, building owners, facility managers, public authorities, and project partners. Later activities within WP8 can use this methodology as the basis for harmonized procedures, implementation roadmaps, stakeholder engagement, and broader uptake of the accessibility assessment scheme.

In this sense, D8.1 is the core methodological output of WP8. It defines the framework through which accessibility performance can be assessed, while subsequent WP8 outputs can focus on how this framework is implemented, harmonized, validated, communicated, and embedded into future accessibility practices.

2 Conceptual and Methodological Basis

2.1 Accessibility as a Multidimensional Assessment Concept

Accessibility in the built environment cannot be understood only as the physical possibility of entering or moving through a building. While physical access remains a fundamental requirement, a comprehensive accessibility assessment must also consider whether users can understand, operate, navigate, feel safe in, and participate meaningfully within the spaces they use. For this reason, the Comprehensive Accessibility Assessment Framework treats accessibility as a multidimensional performance concept.

The first dimension of accessibility concerns **physical access and usability**. This includes the ability of users to approach, enter, circulate within, and use a building without unnecessary barriers. It covers elements such as entrances, corridors, ramps, lifts, doors, sanitary facilities, furniture, controls, and shared equipment. However, physical presence alone is not sufficient. A space may be technically reachable but still difficult to use if controls are poorly positioned, doors require excessive force, counters are too high, or facilities do not support independent use.

Accessibility also includes **safety**. Users with different functional needs must be able to move through and use buildings without increased exposure to hazards. This requires safe circulation routes, clearly identifiable hazards, accessible emergency information, inclusive alarm systems, evacuation routes, and procedures that consider users with mobility, sensory, cognitive, or communication-related needs. Safety is therefore assessed not only as a regulatory requirement, but as a core condition for equal and confident use of the built environment.

Environmental comfort is another essential component of accessibility. Indoor conditions such as lighting, glare, temperature, air quality, acoustics, and sensory load can strongly influence whether a space is usable for different groups of users. For example, poor lighting may affect people with low vision, high noise levels may affect people with hearing impairments or neurodiverse conditions, and inadequate air quality or temperature control may create barriers for people with chronic health conditions. An accessible environment should therefore be physically reachable, but also comfortable, healthy, and supportive of diverse needs.

The framework also recognises the importance of **orientation and wayfinding**. Users must be able to understand where they are, identify destinations, choose appropriate routes, and move through the building with confidence. This requires clear spatial organisation, legible signage, visual cues, tactile or auditory guidance where needed, predictable circulation patterns, and accessible information at decision points. Navigational accessibility is particularly important in complex buildings such as hospitals, universities, public offices, transport facilities, and large commercial buildings.

In addition, accessibility increasingly depends on the ability to interact with **digital and smart systems**. Buildings now include digital interfaces, touchscreens, smart controls, automated doors, mobile applications, information displays, sensors, access control systems, and building management technologies. These systems can improve accessibility when they are designed inclusively, but they can also create new barriers if they are difficult to reach, understand, operate, or interpret. For this reason, the framework assesses digital interaction and smart usability as part of accessibility performance.

In the AccesS framework, accessibility is understood not only as the removal of physical barriers, but also as the capacity of a building to sense, communicate, adapt and respond to diverse user needs. Smart-building technologies can support this transition by enabling real-time monitoring, adaptive environmental control, personalised interaction, dynamic wayfinding and proactive safety notifications.

Finally, accessibility includes **social inclusion and independent participation**. A building should not only allow users to enter and move around; it should also enable them to take part in everyday

activities with dignity, autonomy, and equality. This includes access to shared spaces, participation areas, rest points, public furniture, service points, educational or professional environments, cultural spaces, and social interaction zones. The assessment therefore considers whether the built environment supports independent participation rather than creating dependence on assistance or limiting users to partial access.

2.2 Core Assessment Logic

The Comprehensive Accessibility Assessment Framework is structured around a sequential assessment logic that connects user needs, accessibility domains, measurable criteria, scoring, and final performance results. This logic ensures that accessibility is not assessed as a general or abstract concept, but through a clear methodological sequence that can be applied consistently across different buildings and assessment contexts.

The core assessment logic follows the sequence:

**Disability Type Group → Accessibility Domain → Evaluation Criterion → Performance Indicator →
Progressive Implementation Level → Score → Weighted Result**

This sequence defines how the framework moves from the identification of user needs to the calculation of accessibility performance. Each step has a specific role in the methodology and contributes to the transparency and traceability of the final assessment result.

- The first level is the **Disability Type**. This level defines the user perspective from which accessibility is assessed. Different disability types may experience barriers in different ways. For example, a person with a physical disability may be primarily affected by door width, manoeuvring space, gradients, or opening force, while a person with a sensory disability may be more affected by signage, contrast, alarms, tactile information, or auditory guidance. By starting from disability types, the framework ensures that accessibility assessment is grounded in diverse user needs.
- The second level is the **Assessment Dimension**. Assessment dimensions organise accessibility into broader domains of building performance. These dimensions include spatial and physical accessibility, safety and environmental comfort, cognitive and navigational accessibility, digital interaction and smart usability, and social inclusion and human experience. The assessment dimensions allow the methodology to capture the multidimensional nature of accessibility and to avoid reducing accessibility to only one aspect of building design.
- The third level is the **Evaluation Criterion**. Evaluation criteria translate each disability type and assessment dimension into specific items that can be assessed. Each criterion describes a particular accessibility condition, requirement, or feature of the built environment. Examples may include door accessibility, lighting and glare control, tactile warning surfaces, control response time, signage clarity, accessible rest points, or adaptable participation equipment. The evaluation criteria form the operational layer of the framework.
- The fourth level is the **Performance Indicator**. Performance indicators define how each evaluation criterion is measured or verified. They may be quantitative, such as clear width, maximum force, lighting level, response time, acoustic level, or distance between rest points. They may also be qualitative, such as clarity of information, ease of use, predictability of routes, or inclusiveness of shared spaces. The purpose of the performance indicator is to ensure that each criterion is assessed on the basis of observable, measurable, or verifiable evidence.

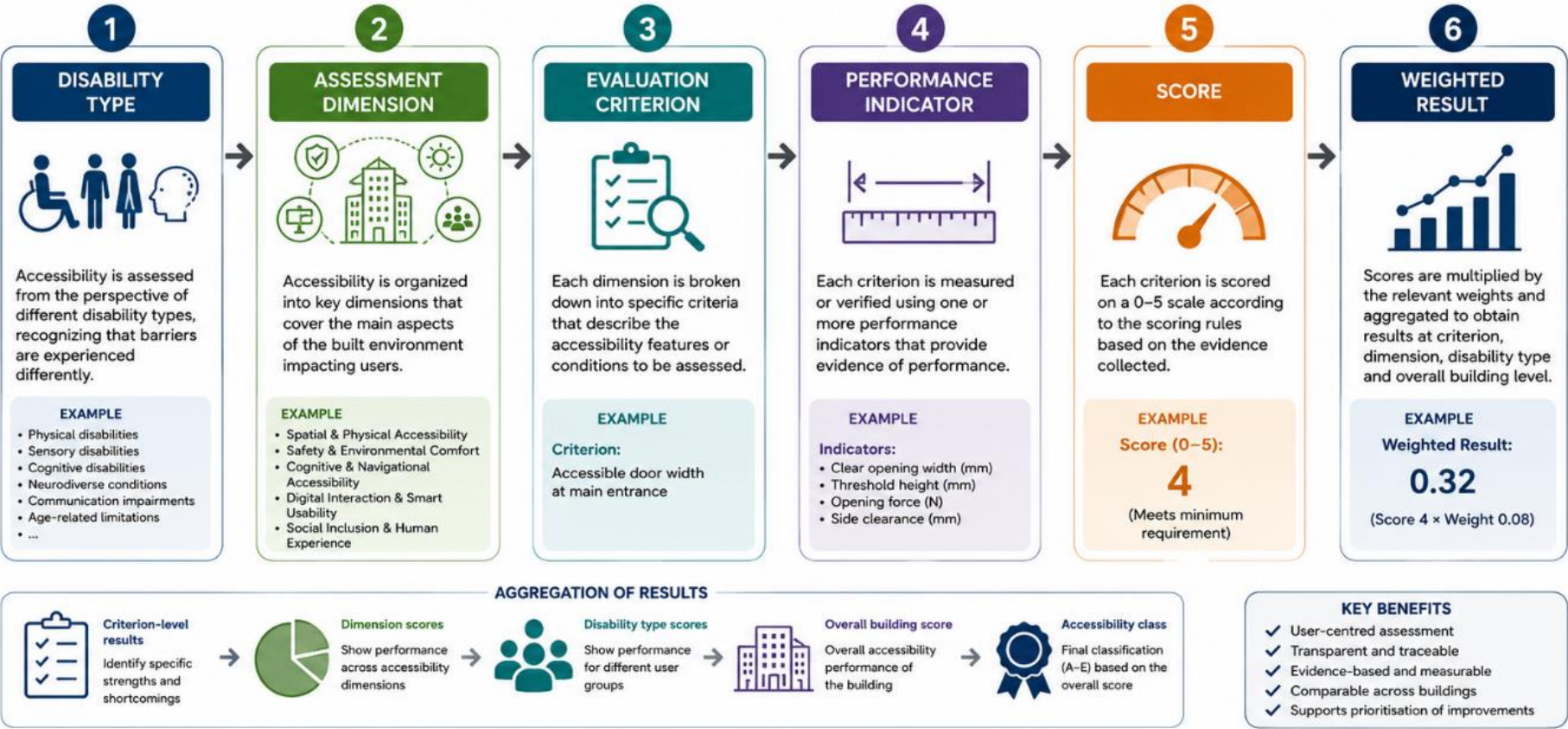


Figure 2 Core assessment logic linking disability types, assessment dimensions, evaluation criteria, indicators, scoring, and weighted results.

- The fifth level is the **Score**. Each evaluation criterion receives a score according to the scoring methodology of the framework. The score expresses the level of accessibility performance achieved for that criterion. It allows individual criteria to be compared and aggregated, while also making it possible to identify specific shortcomings. The scoring process therefore converts the evidence collected during the assessment into a structured performance value.
- The final level is the **Weighted Result**. Since not all disability types, assessment dimensions, or evaluation criteria have the same relevance in every building context, the methodology applies weights to the scores. Weighting allows the framework to reflect contextual priorities, building function, user groups, and the relative importance of different accessibility aspects. The weighted results are then aggregated to calculate performance at different levels, including criterion-level results, assessment dimension scores, disability type scores, and the Overall Building Score.

2.3 Assessment Principles

This core logic provides a transparent chain from user need to final assessment outcome. Each result can be traced back to the relevant disability type, assessment dimension, criterion, indicator, score, and weight. This traceability is essential for ensuring that the framework is not only a scoring tool, but also a diagnostic method for identifying where accessibility performance is strong and where shortcomings need to be addressed. The Comprehensive Accessibility Assessment Framework is based on a set of principles that ensure the methodology is consistent, reliable, and suitable for application across different building contexts. These principles guide the definition of disability types, assessment dimensions, evaluation criteria, performance indicators, scoring rules, weighting procedures, and interpretation of results.

The purpose of these principles is to ensure that accessibility assessment is not treated as a subjective judgement, but as a structured and evidence-based process. They also support the wider objective of developing a framework that can be used by different stakeholders while producing results that are understandable, comparable, and useful for decision-making.

Measurability

The framework is based on the principle that accessibility criteria should be expressed through observable or verifiable indicators. Each evaluation criterion should be linked to one or more performance indicators that allow the assessor to determine whether the required accessibility condition is achieved.

Measurability can be achieved through quantitative indicators, such as dimensions, distances, forces, heights, slopes, lighting levels, environmental thresholds, response times, or availability of accessible facilities. It can also be achieved through qualitative indicators, provided that these are clearly defined and supported by assessment guidance.

This principle is essential because accessibility performance must be assessed in a way that can be checked, recorded, and justified. Measurable criteria reduce ambiguity and support consistency between different assessments.

Transparency

The framework requires that scores and weights are clearly justified. The assessor should be able to explain why a specific score has been assigned to each criterion and how the weighting structure affects the final result.

Transparency applies to all stages of the methodology, including the selection of applicable criteria, the collection of evidence, the assignment of scores, the treatment of non-applicable criteria, and the

calculation of weighted results. This ensures that the assessment outcome can be understood by building owners, facility managers, designers, public authorities, and other stakeholders.

A transparent methodology also makes it possible to identify which criteria influence the overall result most strongly and where the main accessibility shortcomings are located. This supports accountability and helps stakeholders understand how improvement priorities are derived.

Comparability

The framework is designed to produce results that allow comparison across buildings, building types, assessment dimensions, and disability types. Comparability is important because accessibility assessment should not only describe the condition of one building in isolation, but also support benchmarking and prioritisation.

To support comparability, the framework uses a common scoring scale, a defined assessment structure, standardised criteria, and normalised weights. These features allow results to be interpreted in a consistent manner, even when the framework is applied to different building categories or contexts. Comparability does not mean that all buildings are assessed with identical assumptions. The methodology allows for contextual adaptation, but this adaptation must be documented and applied consistently so that results remain meaningful.

Implementability

Each Evaluation Criterion should correspond to accessibility interventions that can realistically be implemented in buildings, either through design measures, operational procedures, digital tools, smart-building systems or assistive technologies.

Digital verifiability

Where possible, Evaluation Criteria should be verifiable through BIM data, digital twins, sensors, monitoring systems, digital interfaces, operational records or other machine-readable evidence.

Market readiness

The framework considers whether relevant technologies, systems or solution categories are available in the market. Market readiness is used to support feasibility, but it does not imply endorsement of any supplier or product.

Inclusiveness

The framework is grounded in the principle that accessibility assessment must represent different disability types and user needs. Accessibility barriers are not experienced in the same way by all users. A building that is accessible for one group may still present significant barriers for another.

For this reason, the methodology considers a range of disability types and functional needs, including physical, sensory, cognitive, neurodiverse, communication-related, age-related, chronic health, temporary, situational, and multiple accessibility needs. This helps ensure that the assessment does not focus only on the most visible or commonly addressed barriers.

Inclusiveness also means that accessibility is assessed beyond minimum physical access. The framework includes usability, safety, environmental comfort, navigation, digital interaction, social participation, independence, and dignity as relevant aspects of accessibility performance.

PRINCIPLE	MEANING
 MEASURABILITY	Criteria should be expressed through observable or verifiable indicators. - Indicators can be quantitative (e.g., dimensions, forces, lighting levels) - or qualitative (e.g., clarity of information, ease of use), but must be defined. - Ensures that assessment is based on facts that can be checked and recorded. 
 TRANSPARENCY	Scores and weights should be clearly justified. - The reasoning behind scores, weights and calculations must be documented. - All steps of the assessment process must be clear and understandable. - Supports accountability and helps users understand the results. 
 COMPARABILITY	Results should allow comparison across buildings or building types. - A common structure, scoring scale and weighting approach are used. - Enables benchmarking and identification of performance gaps. - Supports prioritisation of improvements at different levels. 
 INCLUSIVENESS	Different disability types and user needs should be represented. - Considers physical, sensory, cognitive, age-related, communication, neurodiverse and other user needs. - Ensures that barriers experienced by diverse users are identified. 
 ADAPTABILITY	The framework should be adjustable to different building categories. - Weights, applicability rules and assessment scope can be adapted. - Reflects differences in building function, user groups and risk profiles. - Maintains a common logic while allowing context-sensitive application. 
 EVIDENCE-BASED ASSESSMENT	Scoring should rely on measurements, observations, documentation, or verified data. - Evidence may include measurements, photos, drawings, BIM data, records, monitoring data or user feedback. - Improves reliability, traceability and the ability to verify and update results. 

Figure 3 Assessment principles underpinning the Comprehensive Accessibility Assessment Framework

Adaptability

The framework is designed to be adjustable to different building categories, user groups, and assessment contexts. Buildings differ in their function, occupancy, risk profile, public accessibility, operational conditions, and user needs. Therefore, the methodology must be flexible enough to reflect these differences while preserving a common assessment logic.

Adaptability is achieved through the use of weights, applicability rules, and context-specific assessment scopes. For example, the relative importance of certain disability types, assessment dimensions, or evaluation criteria may differ between a hospital, school, office building, residential building, cultural facility, or transport-related building.

This principle allows the framework to remain relevant across diverse built environment settings without losing methodological consistency.

Evidence-Based Assessment

The framework requires that scoring is based on evidence rather than assumptions. Evidence may include measurements, observations, drawings, photographs, BIM or model data, technical documentation, operational records, monitoring data, or user feedback where relevant.

Evidence-based assessment improves the reliability of the results and enables the assessment outcome to be reviewed, verified, and updated over time. It also supports the identification of specific shortcomings, because low scores can be linked to documented conditions rather than general impressions.

This principle is particularly important for future harmonisation and implementation activities, as it ensures that accessibility performance is assessed using traceable information and that improvement recommendations are grounded in verified findings.

Together, these principles provide the methodological foundation of the Comprehensive Accessibility Assessment Framework. They ensure that the assessment is measurable, transparent, comparable, inclusive, adaptable, and evidence-based, while remaining practical for use across different building types and stages of the building life cycle.

2.4 Boundaries of the Methodology

The proposed methodology defines the final methodology of the Comprehensive Accessibility Assessment Framework. Its purpose is to establish how accessibility performance in the built environment should be assessed, structured, scored, weighted, and interpreted. For this reason, the deliverable focuses on the methodological components of the assessment scheme rather than on implementation case studies, procurement options, or market-based solutions.

The methodology does not include worked examples. While the methodology defines the calculation logic, scoring process, weighting structure, and interpretation of results, it does not present a complete building assessment case or a step-by-step numerical application of the model. Worked examples may be developed in later implementation, testing, or training activities, but they are outside the scope of D8.1.

The framework includes a market-readiness screening of solution categories relevant to each Evaluation Criterion. This screening is used to demonstrate that the proposed criteria are implementable and technologically grounded. It does not constitute a procurement process, supplier ranking, certification of products, or recommendation to purchase specific equipment. Supplier names, where used in supporting material, are indicative examples only.

Similarly, the deliverable does not provide product recommendations. It does not evaluate, rank, endorse, or prescribe specific products, devices, software platforms, digital systems, or assistive

technologies. Any reference to technical solutions within the framework should be understood as a way of clarifying assessment criteria or performance indicators, not as a recommendation for procurement or installation.

Detailed procurement guidance is also outside the scope of the methodology. The deliverable does not define technical specifications for purchasing equipment, tendering procedures, supplier selection criteria, cost estimates, or contractual requirements. Such guidance may be relevant at a later implementation stage, but the objective of the methodology is to define the assessment method itself.

The deliverable also does not present pilot-building results. Although the methodology is intended to support future application in real buildings, the methodology does not report the outcomes of pilot assessments, building audits, validation exercises, or field demonstrations. Pilot testing and practical application can be used later to refine, validate, or demonstrate the framework, but they are not part of the present deliverable.

Table 1 Boundaries and exclusions of the AccessS accessibility assessment methodology.

Boundary	Explanation
Methodological focus	D8.1 defines the final methodology of the Comprehensive Accessibility Assessment Framework. It establishes how accessibility performance in the built environment should be assessed, structured, scored, weighted, and interpreted.
No worked examples	The deliverable defines the calculation logic, scoring process, weighting structure, and interpretation of results, but it does not present a complete building assessment case or step-by-step numerical application of the model.
No supplier catalogues	D8.1 does not provide supplier catalogues or lists of commercial providers. It remains methodologically neutral and applicable across different countries, markets, procurement systems, and technology contexts.
No product recommendations	The deliverable does not evaluate, rank, endorse, or prescribe specific products, devices, software platforms, digital systems, or assistive technologies.
No procurement guidance	D8.1 does not define technical specifications for purchasing equipment, tendering procedures, supplier selection criteria, cost estimates, or contractual requirements.
No pilot-building results	The deliverable does not report outcomes of pilot assessments, building audits, validation exercises, or field demonstrations. Pilot testing may be used later to refine, validate, or demonstrate the framework.
Link to later activities	Worked examples, procurement guidance, supplier mapping, and pilot applications may be developed in later implementation, testing, training, or harmonization activities, but they are outside the scope of D8.1.

3 Structure of the Accessibility Assessment Framework

3.1 Disability Types

The first layer of the Comprehensive Accessibility Assessment Framework is the definition of Disability Types (DTs). This layer establishes the user-oriented basis of the methodology and ensures that accessibility is assessed from the perspective of diverse functional needs. The framework recognises that accessibility is not experienced in the same way by all users. Barriers that significantly affect one group may be less relevant to another, while some users may experience multiple or overlapping barriers at the same time.

For this reason, the assessment does not rely on a single generic user profile. Instead, it organises accessibility needs into five consolidated Disability Type groups. Each group represents a broad category of functional needs that may influence how users access, navigate, understand, interact with, and participate in the built environment. These five groups provide the operational structure of the assessment, while still allowing the detailed disability profiles within each group to be considered during evidence collection, scoring and interpretation.

The Disability Types form the entry point of the assessment model. They are connected to the Accessibility Domains and Evaluation Criteria, allowing the framework to examine how different aspects of the built environment perform for different user groups. This structure supports a more inclusive and differentiated assessment, because accessibility performance can be analysed not only at building level, but also in relation to specific user needs.

Table 2 Disability Types used in the Accessibility Assessment Framework.

Code	Consolidated Disability Type	Assessment Relevance	Detailed disability types included
DT1	Physical Disability	Movement, reach, strength, manoeuvring, lifting, balancing, endurance and physical access	Mobility disabilities; chronic health conditions; temporary disabilities; age-related physical limitations
DT2	Sensory Disability	Perception of information, signals, environmental cues and warnings	Visual disabilities; hearing disabilities
DT3	Cognitive & Neurodiverse Disability	Understanding, memory, information processing, orientation, predictability and sensory processing	Cognitive disabilities; neurodiverse conditions
DT4	Communication & Mental Health	Communication access, emotional comfort, perceived safety, stress reduction and inclusion	Speech and communication impairments; mental health conditions
DT5	Multiple / Situational Disability	Complex, overlapping, temporary or context-dependent accessibility needs	Multiple disabilities; situational limitations

DT Group	Consolidated Disability Type (DT)	Assessment Relevance	Detailed Disability Types Included in the Group		
DT1	 Physical Disability Mobility, physical strength, fatigue, reach and endurance limitations.	Movement, reach, manoeuvring, lifting, balancing, endurance and physical access.	DT1.1	Mobility disabilities	Limited or no ability to walk, balance or move without assistance.
			DT1.2	Chronic health conditions	Fatigue, pain, respiratory or cardiovascular disorders.
			DT1.3	Temporary disabilities	Injuries, pregnancy, short-term physical limitations.
			DT1.4	Age-related limitations	Decline in mobility, strength and physical endurance in older adults.
DT2	 Sensory Disability Vision and hearing impairments requiring alternative sensory access and communication.	Perception of information, signals, environment and warnings.	DT2.1	Visual disabilities	Blind or low-vision users requiring visual and tactile cues.
			DT2.2	Hearing disabilities	Deaf or hard-of-hearing individuals needing visual, tactile and vibration cues.
DT3	 Cognitive & Neurodiverse Cognitive processing, memory, attention, comprehension and sensory processing differences.	Understanding, information processing, orientation, predictability and mental workload.	DT3.1	Cognitive disabilities	Intellectual or memory-related limitations (e.g., dementia).
			DT3.2	Neurodiverse conditions	ADHD, dyslexia, autism; need predictable, low-stimulus design.
DT4	 Communication & Mental Health Communication, expression, stress, anxiety and emotional well-being.	Communication access, emotional comfort, safety and inclusion.	DT4.1	Speech & communication impairments	Difficulty speaking or understanding spoken language.
			DT4.2	Mental health conditions	Anxiety, PTSD, depression; need calm, safe and supportive environments.
DT5	 Multiple / Situational Disability Combined, temporary or context-dependent accessibility barriers.	Complex or temporary needs that vary with situation and context.	DT5.1	Multiple disabilities	Overlapping or combined accessibility needs (e.g., deafblind).
			DT5.2	Situational disabilities	Context-dependent barriers (e.g., carrying loads, poor light, time pressure).

Figure 4 Disability Types used in the Accessibility Assessment Framework.

- DT1 – Physical Disability refers to users who may experience limitations related to movement, reach, strength, balance, endurance, fatigue, pain, respiratory or cardiovascular conditions, temporary injuries, pregnancy, ageing-related physical decline, or the use of mobility aids. In the assessment framework, this disability type is particularly relevant to criteria such as step-free access, door accessibility, corridor width, ramp design, lift usability, manoeuvring space, reach ranges, low-force operation, resting areas, travel distances, indoor air quality, thermal comfort, seating availability, and the physical usability of building elements.
- DT2 – Sensory Disability includes users with visual, hearing, tactile or auditory accessibility needs. The assessment relevance of this category includes visual contrast, tactile guidance, auditory information, visual alerts, acoustic clarity, lighting quality, signage legibility, hazard warnings, vibration cues and multisensory communication. This disability type ensures that the framework considers accessibility beyond physical movement and addresses how information, warnings and environmental cues are perceived.
- DT3 – Cognitive & Neurodiverse Disability refers to users who may experience difficulties with comprehension, memory, decision-making, spatial understanding, orientation, attention, predictability, routine, sensory load or overstimulation. Within the framework, this category is linked to criteria related to clear information, predictable layouts, simple wayfinding, reduced complexity, consistent signage, understandable instructions, calm environments, route predictability and accessible digital interaction. The objective is to assess whether the built environment supports users who may require greater clarity, structure, cognitive support and reduced sensory burden.
- DT4 – Communication & Mental Health includes users who may experience difficulties in receiving, understanding, expressing or exchanging information, as well as users whose accessibility needs are affected by stress, anxiety, perceived safety, overstimulation or the need for calm and secure environments. This disability type is relevant to the accessibility of spoken, written, visual, digital and interactive communication, as well as to environmental qualities that support confidence, emotional comfort, safety, calmness and inclusion.
- DT5 – Multiple / Situational Disability refers to users who experience overlapping, combined, temporary or context-dependent accessibility needs. This may include users with multiple disabilities, users affected by short-term or situational barriers, users carrying heavy objects, users accompanied by children, or users experiencing accessibility barriers due to poor lighting, noise, crowding, time pressure or other changing environmental conditions. This category supports a more holistic interpretation of accessibility performance by recognising that accessibility needs may vary depending on context, task, environment and user condition.

3.2 Assessment Dimensions

The second layer of the Comprehensive Accessibility Assessment Framework is formed by the Assessment Dimensions (ADs). While the Disability Types define the user perspective of the assessment, the Assessment Dimensions define the main areas of accessibility performance that are examined within the built environment.

The purpose of the Assessment Dimensions is to organise accessibility into a limited number of clear and comprehensive categories. This helps the methodology remain practical, understandable, and applicable across different building types, while still covering the full range of accessibility issues addressed by the framework.

	Code	Assessment Dimension	Focus				
	AD1	Spatial & Physical Accessibility Covers the physical conditions that allow users to approach, enter, move through, and use a building or built environment.	 Access	 Movement	 Reachability	 Manoeuvring space	 Physical use
	AD2	Safety & Environmental Comfort Addresses the conditions that allow users to occupy and move through spaces safely and comfortably.	 Safety & emergency	 Thermal comfort	 Air quality	 Lighting	 Acoustics
	AD3	Cognitive & Navigational Accessibility Focuses on how users understand, interpret, and navigate the built environment.	 Orientation	 Wayfinding	 Legibility	 Information clarity	 Predictability
	AD4	Digital Interaction & Smart Usability Covers the accessibility of digital, automated, and smart building systems used for access, information, control, and services.	 Controls	 Interfaces	 Response time	 Feedback	 Smart systems
	AD5	Social Inclusion & Human Experience Addresses the broader human and participatory aspects of accessibility in everyday life.	 Participation	 Dignity	 Independence	 Inclusive shared use	 Social interaction

Figure 5 Assessment Dimensions used in the Accessibility Assessment Framework.

The framework uses five consolidated Assessment Dimensions. These dimensions reflect the multidimensional nature of accessibility and correspond directly to the scope of T8.1, which requires the assessment scheme to address physical accessibility, usability, safety, comfort, and social inclusion.

Table 3 Assessment Dimensions used in the Accessibility Assessment Framework.

Code	Assessment Dimension	Focus
AD1	Spatial & Physical Accessibility	Access, movement, reachability, physical use
AD2	Safety & Environmental Comfort	Safety, emergency, thermal comfort, air quality, lighting, acoustics
AD3	Cognitive & Navigational Accessibility	Orientation, wayfinding, legibility, information clarity
AD4	Digital Interaction & Smart Usability	Controls, interfaces, response time, feedback, smart systems
AD5	Social Inclusion & Human Experience	Participation, dignity, independence, inclusive shared use

- AD1 – Spatial & Physical Accessibility covers the physical conditions that allow users to approach, enter, move through, and use a building or built environment setting. It includes access routes, entrances, doors, corridors, ramps, lifts, manoeuvring spaces, reach ranges, sanitary facilities, seating, counters, and other physical features that influence independent use.
- AD2 – Safety & Environmental Comfort addresses the conditions that allow users to occupy and move through spaces safely and comfortably. It includes emergency preparedness, evacuation, alarms, hazard prevention, lighting, glare, thermal comfort, air quality, ventilation, acoustics, and sensory comfort.
- AD3 – Cognitive & Navigational Accessibility focuses on how users understand, interpret, and navigate the built environment. It includes spatial legibility, wayfinding, signage, visual cues, tactile and auditory guidance, route predictability, information clarity, and orientation support.
- AD4 – Digital Interaction & Smart Usability covers the accessibility of digital, automated, and smart building systems. It includes controls, interfaces, touchscreens, mobile applications, digital service points, feedback mechanisms, response times, sensors, smart systems, and automated functions.
- AD5 – Social Inclusion & Human Experience addresses the broader human and participatory aspects of accessibility. It considers whether the built environment supports dignity, independence, equal participation, rest, interaction, and inclusive shared use.

Together, the five Assessment Dimensions provide the main structure through which accessibility performance is organised and evaluated. Each dimension is connected to relevant Disability Types and is further broken down into specific Evaluation Criteria.

3.3 Evaluation Criteria

The third layer of the Comprehensive Accessibility Assessment Framework is formed by the Evaluation Criteria (ECs). Evaluation Criteria represent the operational level of the methodology. They translate the broader Disability Types and Assessment Dimensions into specific assessment items that can be observed, verified, scored, and aggregated.

While Disability Types define for whom accessibility is assessed, and Assessment Dimensions define which area of accessibility performance is considered, Evaluation Criteria define what exactly is assessed. They therefore provide the practical basis for applying the framework in real building contexts.

Each Evaluation Criterion is linked to one Disability Type, one Assessment Dimension, a clear criterion definition, one or more performance indicators, evidence requirements, and a scoring rule. This structure ensures that every criterion is traceable within the overall methodology.

Table 4 Evaluation Criterion definition template.

Field	Description
Criterion code	Unique identifier
Disability type	Relevant DT
Assessment dimension	Relevant AD
Criterion title	Short name of the accessibility issue
Criterion definition	What is being assessed
Performance indicators	How performance is measured
Evidence required	What data supports the score
Scoring guidance	How the score is assigned

The criterion code provides a unique identifier for each Evaluation Criterion. This enables criteria to be referenced consistently throughout the assessment process, scoring tables, weighting model, and reporting outputs.

The Disability Type field identifies the user group or functional need to which the criterion is primarily related. Many accessibility measures support several user groups. However, assigning a primary Disability Type ensures that the assessment remains structured and that user-specific accessibility needs are clearly represented.

The Assessment Dimension field identifies the broader domain of accessibility performance to which the criterion belongs. The criterion title provides a concise description of the accessibility issue being assessed. The criterion definition explains what is being assessed and should be specific enough to guide assessment while remaining applicable across different building types and contexts.

Performance indicators define how the criterion is measured or verified. The evidence required field specifies the information needed to support the score, while the scoring guidance explains how the assessor should assign a score to the criterion. Evaluation Criteria are therefore the main link between the conceptual framework and the practical assessment process.

The final EC list was derived through a consolidation process. Earlier versions of the framework generated a much larger number of detailed criteria. These were streamlined into a core set of high-impact, digitally verifiable and operationally manageable Evaluation Criteria. This consolidation was necessary to avoid excessive complexity and to support real-world audits, automated scoring and benchmarking.

3.4 Performance Indicators

Performance Indicators are the measurable or verifiable elements used to assess each Evaluation Criterion. They translate the criterion definition into practical assessment items that can be checked through measurement, observation, documentation, digital data, or user-related evidence. In this way, Performance Indicators provide the evidence base for scoring and help ensure that the assessment is consistent, transparent, and repeatable.

Each Evaluation Criterion should be supported by one or more Performance Indicators. Performance Indicators may be quantitative, qualitative, or mixed. Quantitative indicators are based on measurable values, such as width, distance, force, response time, lighting level, temperature, air quality, or noise level. Qualitative indicators are based on verifiable conditions, such as the presence of clear signage,

availability of tactile cues, ease of interaction, clarity of information, or inclusiveness of participation spaces.

Table 5 Indicative types of Performance Indicators.

Indicator Type	Examples
Dimensional indicators	Door width, corridor width, turning radius, control height
Effort indicators	Opening force, actuation force
Environmental indicators	Lux level, CO2 concentration, temperature range, noise level
Interaction indicators	Response time, feedback availability, interface reachability
Navigational indicators	Signage visibility, tactile cues, route continuity
Social indicators	Availability of rest points, inclusive participation facilities

Dimensional indicators assess the physical characteristics of spaces, routes, building elements, and equipment. They are used where accessibility depends on measurable spatial conditions, such as minimum clear widths, manoeuvring areas, turning radii, reach ranges, mounting heights, slope gradients, or transfer spaces.

Effort indicators assess the physical effort required to operate or use building elements. Examples include the force needed to open a door, activate a control, press a button, operate a handle, or move a component.

Environmental indicators assess indoor and outdoor environmental conditions that affect safety, comfort, health, and usability. These may include lighting levels, glare, temperature, humidity, air quality, CO2 concentration, particulate matter, ventilation performance, acoustic conditions, and noise levels.

Interaction indicators assess how users interact with building systems, controls, digital interfaces, and smart technologies. Navigational indicators assess whether users can understand and move through the building with confidence. Social indicators assess whether the built environment supports participation, independence, dignity, and inclusive shared use.

For each EC, the performance indicator template includes:

Table 6 Indicative types of Performance Indicators.

Field	Addition
Performance indicator	What is measured
Evidence source	Site audit, BIM, photos, monitoring data, user feedback
Digital verification	Whether the indicator can be checked through BIM, sensors, digital twin, interface logs
Progressive implementation level	Level 1 to Level 5
Market-readiness evidence	Whether solution types exist in the market
Example solution category	Sensors, mobile app, smart signage, adaptive HVAC, automatic door, digital twin, etc.

4 Scoring and Weighting Methodology

4.1 Scoring Scale

The Comprehensive Accessibility Assessment Framework uses a 0-5 scoring scale to assess the performance of each Evaluation Criterion. The purpose of the scoring scale is to translate the evidence collected during the assessment into a clear and comparable performance value. This allows individual accessibility criteria to be evaluated consistently and later aggregated through the weighting methodology.

The scoring scale reflects a progressive interpretation of accessibility performance. It ranges from criteria that are not applicable to the specific assessment context, to situations where an accessibility requirement is absent or not compliant, and finally to conditions where the building demonstrates best practice or exemplary accessibility performance.

Table 7 Scoring scale for Evaluation Criteria.

Score	Revised interpretation
0	Not applicable
1	Non-compliant / absent
2	Partial implementation / needs improvement
3	Meets basic accessibility requirement
4	Exceeds requirement through user-centred or smart functionality
5	Best practice: adaptive, monitored, integrated or digital-twin-enabled accessibility

- A score of 0 – Not applicable is assigned when a criterion does not apply to the building, space, system, or assessment context under consideration. This score should be used only when the criterion is genuinely irrelevant to the case being assessed.
- A score of 1 – Non-compliant or absent is assigned when the criterion is not addressed, the relevant accessibility feature is missing, or the assessed condition clearly fails to meet the minimum requirement. This score indicates a significant accessibility shortcoming and normally requires corrective action.
- A score of 2 – Partially addressed is assigned when the criterion is addressed only to a limited extent. This may occur when an accessibility feature is present but incomplete, inconsistently implemented, poorly maintained, difficult to use, or available only in part of the assessed area.
- A score of 3 – Meets minimum accessibility requirement is assigned when the criterion satisfies the defined minimum requirement. It represents the baseline level of acceptable accessibility performance.
- A score of 4 – Exceeds minimum requirement is assigned when the assessed condition goes beyond the minimum requirement and provides enhanced accessibility performance.
- A score of 5 – Best practice / exemplary accessibility performance is assigned when the criterion is addressed at a high level of quality, consistency, and inclusiveness. The scoring scale enables the framework to move beyond a simple compliant/non-compliant assessment and to capture different degrees of accessibility performance.

4.2 Scoring Rules

The scoring rules define how assessors assign scores to each Evaluation Criterion. Their purpose is to ensure that the scoring process is consistent, transparent, and evidence-based. Since the framework

is intended to support comparable assessments across different buildings and contexts, scores should not be assigned on the basis of general impressions or subjective judgement alone.

Each score must be supported by verified evidence. The assessor should document the information used to justify the score, including measurements, observations, photographs, drawings, BIM or model data, technical documentation, monitoring records, operational procedures, or user feedback where relevant. The type of evidence required depends on the nature of the criterion and its Performance Indicators.

For quantitative criteria, scores should be assigned using measured or verified thresholds. These criteria involve values that can be directly measured or checked, such as door width, corridor width, turning radius, ramp gradient, control height, opening force, lighting level, temperature range, CO2 concentration, noise level, or response time. Where a criterion includes a numerical requirement, the score should reflect the extent to which the measured value satisfies, falls short of, or exceeds the required threshold.

For qualitative criteria, scores should be assigned using predefined descriptors. These criteria may relate to clarity of information, ease of use, spatial legibility, route predictability, perceived safety, usability of interfaces, availability of feedback, or inclusiveness of shared spaces. Although these indicators are not always expressed numerically, they must still be assessed systematically.

A score of 0 should be used only where the criterion is genuinely not applicable to the assessment context. It should not be used to indicate poor performance, lack of evidence, or uncertainty. If a criterion applies but the required accessibility provision is missing or cannot be verified, the appropriate score should normally be 1 – Non-compliant or absent, not 0.

Low scores should be used to identify priority shortcomings. Criteria receiving a score of 1 indicate that the accessibility feature is absent or non-compliant. This is a shortcoming. Criteria receiving a score of 2 indicate that the issue is only partially addressed and that accessibility performance remains insufficient. This is also a shortcoming. These low-scoring criteria should be highlighted in the assessment results and used to guide improvement priorities.

Where an Evaluation Criterion has been atomised into progressive implementation levels, the assessor should use these levels as guidance for assigning scores. Lower scores correspond to absence, partial implementation or static compliance. Higher scores correspond to digitally supported, adaptive, personalised, monitored or predictive accessibility performance. The following table presents the Evaluation Criteria weight values and their supporting justifications, showing how each criterion contributes to accessibility performance within its corresponding Disability Type and Accessibility Domain.

Table 8 Scoring scale for Evaluation Criteria. – Indicative Example for EC 1.1.1

Progressive level	Example for Door Accessibility
Level 1	Smart door sensors and assisted opening alerts
Level 2	Mobile-based door control through app or NFC
Level 3	AI-powered automatic doors with adaptive force
Level 4	Voice and gesture-controlled entry
Level 5	Integrated smart accessibility ecosystem with digital twin and predictive access

4.3 Weighting Levels

The weighting methodology allows the Comprehensive Accessibility Assessment Framework to reflect the relative importance of different accessibility aspects within a specific building context. Since buildings differ in function, user profile, occupancy, risk level, and public accessibility, not all disability types, assessment dimensions, or evaluation criteria necessarily have the same relevance in every assessment.

For this reason, the framework applies weights at three levels.

Table 9 Weighting levels of the Accessibility Assessment Framework.

Weighting level	Meaning
Disability Type weight	Relative importance of each disability type in the building context
Assessment Dimension weight	Relative importance of each dimension for a given disability type
Evaluation Criterion weight	Relative importance of each criterion within a DT-AD combination

The first weighting level is the Disability Type weight. This weight expresses the relative importance of each disability type within the specific building context being assessed. Disability Type weights allow the framework to adapt to the functional and social context of the building while still maintaining a common assessment structure.

The second weighting level is the Assessment Dimension weight. This weight expresses the relative importance of each Assessment Dimension for a specific Disability Type. This level of weighting allows the methodology to reflect the fact that different dimensions of accessibility do not affect all user groups in the same way.

The third weighting level is the Evaluation Criterion weight. This weight expresses the relative importance of each individual criterion within a specific combination of Disability Type and Assessment Dimension. This level ensures that the most critical criteria have an appropriate influence on the calculated result.

Together, the three weighting levels allow the framework to combine flexibility with methodological consistency. The same assessment structure can be applied across different buildings, while the weighting values can be adapted to reflect the specific use, occupancy, and accessibility priorities of each case.

In the final version of the framework, the weighting structure is applied to the five consolidated Disability Type groups, the five Accessibility Domains, and the Evaluation Criteria included within each Disability Type–Accessibility Domain branch. Disability Type weights express the relative relevance of each user group in the specific assessment context, while Accessibility Domain weights express the relative importance of each domain for a given Disability Type. Evaluation Criterion weights express the relative contribution of each criterion within its corresponding branch. This means that EC weights are not interpreted as absolute values across the whole framework, but as relative values within the specific Disability Type and Accessibility Domain to which they belong.

The weighting structure also allows the framework to be adapted to different building types, user profiles and policy priorities. For example, a healthcare building may assign higher relevance to physical accessibility, safety, emergency communication and environmental comfort, while an educational building may place stronger emphasis on cognitive accessibility, wayfinding, communication, participation and low-stimulus environments. Similarly, weights may be adjusted to reflect demographic trends, national accessibility priorities, or the specific needs of the users expected to occupy or visit the building.

For transparency, each Evaluation Criterion weight is accompanied by a short justification explaining why the criterion has been assigned its relative importance within the corresponding Disability Type–Accessibility Domain branch. These justifications support consistency in scoring, facilitate review by assessors and stakeholders, and provide a clear rationale for the aggregation of criterion-level results into domain-level, disability-type-level and overall building scores.

4.4 Normalization of Weights

Normalization of weights is required to ensure consistency in the aggregation of scores. Since the framework applies weights at different levels, the weights must be expressed in a common and mathematically coherent way before scores are combined. This ensures that the final results are not distorted by differences in scale, incomplete weighting tables, or the exclusion of non-applicable criteria.

In the Comprehensive Accessibility Assessment Framework, weights may be expressed either as decimals or as percentages. When expressed as decimals, the total weight at each aggregation level should sum to 1. When expressed as percentages, the total should sum to 100%. Both approaches are equivalent, provided that the same convention is applied consistently throughout the assessment.

Normalization applies at three levels. First, the Disability Type weights must be normalized so that the sum of all applicable Disability Type weights equals 1 or 100%. Second, the Assessment Dimension

weights must be normalized within each Disability Type. Third, the Evaluation Criterion weights must be normalized within each Assessment Dimension.

Table 10 Normalization requirements for weighting levels.

Weighting level	Normalization requirement
Disability Type weights	Sum of applicable Disability Type weights = 1 or 100%
Assessment Dimension weights	Sum of applicable Assessment Dimension weights within each Disability Type = 1 or 100%
Evaluation Criterion weights	Sum of applicable Evaluation Criterion weights within each DT-AD combination = 1 or 100%

When criteria are not applicable, or when a digital function is not relevant to the building type, the remaining EC weights within the same DT–AD branch are re-normalised. However, lack of evidence should not automatically be treated as non-applicability; where a criterion applies but evidence is missing, the assessor should record this as an evidence gap.

Normalization is also important when some criteria are not applicable. If an Evaluation Criterion is genuinely not applicable, it should be excluded from the relevant calculation. The remaining applicable criteria should then be re-normalized so that their weights again sum to 1 or 100%. The same principle applies if an Assessment Dimension or Disability Type is excluded from a specific assessment scope.

The normalization process should be documented in the assessment report. Any exclusions, re-normalization steps, or context-specific adjustments to weights should be clearly stated. This supports transparency and allows the final scores to be reviewed and interpreted correctly.

4.5 Treatment of Non-Applicable Criteria

Non-applicable criteria are criteria that do not apply to the specific building, space, system, or assessment context being evaluated. Their correct treatment is important because they should not penalise the accessibility performance of a building, but they should also not create artificial advantages in the calculation of results.

In the Comprehensive Accessibility Assessment Framework, a criterion should be considered non-applicable only when it is genuinely irrelevant to the assessment scope. For example, a criterion related to lift accessibility would be non-applicable in a single-storey building without level changes, provided that all relevant areas are accessible without the need for vertical circulation.

Non-applicability should only be used where the criterion is genuinely irrelevant to the building type, use case or user group. The absence of a smart or digital solution should not be marked as non-applicable. Instead, it should be reflected in the score, usually as partial implementation, basic compliance or absence of advanced functionality.

When a criterion is non-applicable, it should be assigned a score of 0 – Not applicable. This score does not represent poor performance. It is an exclusion marker used to indicate that the criterion should not be included in the relevant aggregation. Therefore, non-applicable criteria are excluded from the calculation of Assessment Dimension scores, Disability Type scores, and the Overall Building Score.

After excluding a non-applicable criterion, the weights of the remaining applicable criteria within the same Disability Type and Assessment Dimension combination must be re-normalized. This ensures that the applicable criteria still sum to 1 or 100% and that the aggregation remains mathematically consistent.

Non-applicability should not be used to avoid scoring a criterion that is difficult to assess, poorly documented, or not implemented. If a criterion applies to the building but the relevant accessibility feature is absent, incomplete, or cannot be verified, the criterion should normally receive a low score rather than being excluded.

The assessment report should clearly identify all criteria marked as non-applicable and provide a short justification for each exclusion. It should also state whether re-normalization was applied and at which level of the framework.

4. Scoring and Weighting Methodology

This section defines how scores are assigned to evaluation criteria and how weights are applied at different levels to calculate the overall accessibility performance of a building.

4.1 Scoring Scale

Each evaluation criterion is scored on a 0–5 scale.

Score	Interpretation
0	Not applicable Criterion does not apply to the building, space, system, or assessment context.
1	Non-compliant or absent The requirement is not met or the feature is missing.
2	Partially addressed The requirement is addressed only to a limited extent.
3	Meets minimum accessibility requirement The requirement is met at the minimum acceptable level.
4	Exceeds minimum requirement The requirement is met and the performance goes beyond the minimum level.
5	Best practice / exemplary performance The requirement is implemented at a high level of quality and inclusiveness.

4.2 Scoring Rules

Scores must be assigned consistently, transparently, and based on verified evidence.



Evidence based

Scores must be based on verified evidence (measurements, observations, documentation, records, photos, digital data, user feedback).



Quantitative criteria

Use measured or verified thresholds to determine the score.



Qualitative criteria

Use predefined descriptors to determine the score.



Use score 0 only when truly not applicable

Do not use 0 to indicate poor performance or lack of evidence.



Low scores identify priority shortcomings

Scores of 1 and 2 indicate barriers that require attention and improvement.

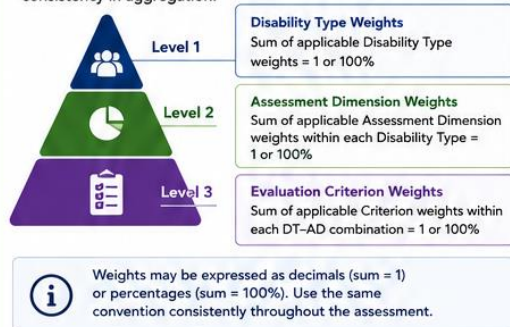
4.3 Weighting Levels

The methodology uses three levels of weighting to reflect the relative importance of accessibility aspects.

Weighting Level	Meaning	Example
Disability Type Weight (Level 1)	Relative importance of each disability type in the building context.	
Assessment Dimension Weight (Level 2)	Relative importance of each assessment dimension for a given disability type.	
Evaluation Criterion Weight (Level 3)	Relative importance of each criterion within a specific Disability Type–Assessment Dimension combination.	

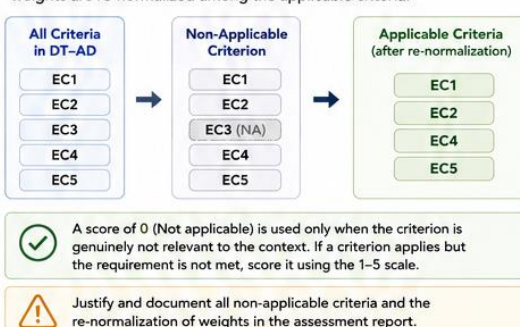
4.4 Normalization of Weights

Weights must be normalized at each level to ensure consistency in aggregation.



4.5 Treatment of Non-Applicable Criteria

Non-applicable criteria are excluded from aggregation and weights are re-normalized among the applicable criteria.



How Scores and Weights Are Combined

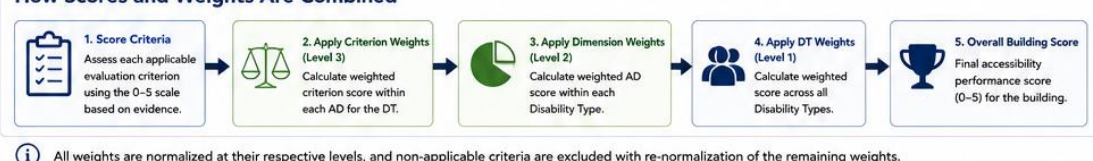


Figure 6 Scoring and weighting methodology of the Comprehensive Accessibility Assessment Framework.

5 Mathematical Model and Classification

This section presents the calculation methodology of the Comprehensive Accessibility Assessment Framework. The mathematical model translates criterion-level accessibility scores into aggregated results at Assessment Dimension, Disability Type, and overall building level. The purpose of the model is to ensure that the assessment results are calculated in a transparent, consistent, and traceable manner.

The model follows the core assessment logic of the framework: Disability Type -> Assessment Dimension -> Evaluation Criterion -> Score -> Weighted Result -> Overall Building Score.

Each building is assessed through a set of Evaluation Criteria, which are organised under Assessment Dimensions and Disability Types. Each criterion receives a score according to the scoring scale defined in Section 4. The score is then multiplied by the relevant weights and aggregated progressively to calculate the accessibility performance of the building.

The model is structured in four main calculation levels: criterion level, Assessment Dimension level, Disability Type level, and building level. The mathematical model is designed to accommodate different building types and assessment contexts through weights at Disability Type, Assessment Dimension, and Evaluation Criterion levels.

5.1 Variables and Indices

The mathematical model uses indices to represent the different layers of the assessment framework. The index i refers to the Disability Type, the index j refers to the Assessment Dimension, and the index k refers to the Evaluation Criterion within a specific Disability Type and Assessment Dimension combination.

Table 11 Variables and indices used in the mathematical model.

Symbol	Meaning
$DT(i)$	Disability Type i
$AD(j)$	Assessment Dimension j
$EC(i,j,k)$	Evaluation Criterion k under Disability Type i and Assessment Dimension j
MR	Market-readiness flag or category, e.g. low / medium / high
PL	Progressive implementation level of the EC, from 1 to 5
$W(i)$	Weight of Disability Type i
$W(i,j)$	Weight of Assessment Dimension j for Disability Type i
$W(i,j,k)$	Weight of Evaluation Criterion k under Disability Type i and Assessment Dimension j
$S(i,j,k)$	Score assigned to Evaluation Criterion k under Disability Type i and Assessment Dimension j

For each Disability Type $DT(i)$, the framework considers a set of Assessment Dimensions $AD(j)$. For each pair $DT(i)$ and $AD(j)$, a set of Evaluation Criteria $EC(i, j, k)$ is defined. Each criterion is scored using the 0–5 scale described in Section 4.

The criterion score is expressed as:

$$S(i, j, k) \in \{0, 1, 2, 3, 4, 5\}$$

where:

0 indicates that the criterion is not applicable;

1 indicates non-compliant or absent performance;

2 indicates partially addressed performance;

3 indicates that the minimum accessibility requirement is met;

4 indicates that the minimum requirement is exceeded;

5 indicates best practice or exemplary accessibility performance.

The weights used in the model are normalized at each level of aggregation. Therefore, the sum of the applicable Disability Type weights is equal to 1:

$$\sum_{i=1}^n W(i) = 1$$

where n is the number of applicable Disability Types.

For each Disability Type $DT(i)$, the Assessment Dimension weights are also normalized:

$$\sum_{j=1}^{m_i} W(i, j) = 1$$

where m_i is the number of applicable Assessment Dimensions for Disability Type i .

For each combination of Disability Type $DT(i)$ and Assessment Dimension $AD(j)$, the Evaluation Criterion weights are normalized as follows:

$$\sum_{k=1}^{p_{ij}} W(i, j, k) = 1$$

where p_{ij} is the number of applicable Evaluation Criteria under Disability Type i and Assessment Dimension j .

If a criterion is marked as not applicable, it is excluded from the relevant aggregation and the remaining criterion weights are re-normalized. Therefore, only applicable criteria contribute to the calculation of the Assessment Dimension score.

The complete calculation process builds on these definitions and proceeds from criterion-level scores to the Overall Building Score.

5.2 Adjusted Criterion Score

The first calculation step in the mathematical model is the estimation of the Adjusted Criterion Score. This score represents the weighted contribution of each Evaluation Criterion within a specific combination of Disability Type and Assessment Dimension.

Each Evaluation Criterion $EC(i, j, k)$ receives a score $S(i, j, k)$, according to the 0–5 scoring scale defined in Section 4. This score expresses the accessibility performance of the criterion before weighting. To reflect the relative importance of the criterion within its Assessment Dimension, the score is multiplied by the corresponding Evaluation Criterion weight $W(i, j, k)$.

The Adjusted Criterion Score is defined as:

$$ACS(i, j, k) = S(i, j, k) \times W(i, j, k)$$

where:

$ACS(i, j, k)$ is the Adjusted Criterion Score for criterion k under Disability Type i and Assessment Dimension j ;

$S(i, j, k)$ is the score assigned to criterion k ;

$W(i, j, k)$ is the normalized weight of criterion k within the relevant $DT(i)$ – $AD(j)$ combination.

The Adjusted Criterion Score expresses how much each criterion contributes to the score of its Assessment Dimension. A criterion with a higher weight will have a stronger influence on the aggregated result than a criterion with a lower weight. In this way, the model reflects not only the performance level of each criterion, but also its relative importance within the assessment structure. For each $DT(i)$ – $AD(j)$ combination, the weights of all applicable Evaluation Criteria are normalized so that:

$$\sum_{k=1}^{p_{ij}} W(i, j, k) = 1$$

where p_{ij} is the number of applicable Evaluation Criteria for Disability Type i and Assessment Dimension j .

If an Evaluation Criterion is marked as not applicable, it is excluded from the calculation and the remaining criterion weights are re-normalized. Therefore, the Adjusted Criterion Score is calculated only for applicable criteria.

The Adjusted Criterion Score is the basic weighted unit of the framework. These values are subsequently aggregated to calculate the Assessment Dimension Impact Score for each Disability Type. The criterion score reflects both the accessibility performance achieved and the maturity of the implementation. For digitally enabled ECs, higher scores should be supported by evidence of monitoring, automation, personalisation, interoperability or adaptive control.

5.3 Assessment Dimension Impact Score

The second calculation step is the estimation of the Assessment Dimension Impact Score. This score represents the accessibility performance of a specific Assessment Dimension $AD(j)$ for a specific Disability Type $DT(i)$.

For each Disability Type and Assessment Dimension combination, the relevant Evaluation Criteria are first scored and weighted. The Assessment Dimension Impact Score is then calculated as the sum of the Adjusted Criterion Scores of all applicable criteria within that dimension.

The Assessment Dimension Impact Score is defined as:

$$ADIS(i, j) = \sum_{k=1}^{p_{ij}} ACS(i, j, k)$$

Since the Adjusted Criterion Score is defined as:

$$ACS(i, j, k) = S(i, j, k) \times W(i, j, k)$$

the Assessment Dimension Impact Score can also be expressed as:

$$ADIS(i, j) = \sum_{k=1}^{p_{ij}} [S(i, j, k) \times W(i, j, k)]$$

where:

$ADIS(i, j)$ is the Assessment Dimension Impact Score for Assessment Dimension j under Disability Type i ;

$ACS(i, j, k)$ is the Adjusted Criterion Score of criterion k ;

$S(i, j, k)$ is the score assigned to criterion k ;

$W(i, j, k)$ is the normalized weight of criterion k ;

p_{ij} is the number of applicable Evaluation Criteria under Disability Type i and Assessment Dimension j .

The Assessment Dimension Impact Score therefore represents the weighted average performance of all applicable criteria within a given Assessment Dimension. Since the criterion weights within each $DT(i)$ – $AD(j)$ combination are normalized to sum to 1, the resulting $ADIS(i, j)$ remains on the same 0–5 scale as the individual criterion scores.

This score allows the framework to identify how well the building performs in each accessibility dimension for each disability type. For example, the model can separately indicate whether the building performs strongly or poorly in Spatial & Physical Accessibility, Safety & Environmental Comfort, Cognitive & Navigational Accessibility, Digital Interaction & Smart Usability, or Social Inclusion & Human Experience for a specific user group.

If one or more criteria within the Assessment Dimension are marked as non-applicable, they are excluded from the aggregation. The weights of the remaining applicable criteria are re-normalized

before calculating the Assessment Dimension Impact Score. This ensures that the score reflects only the relevant and assessed criteria.

The Assessment Dimension Impact Score is used in the next calculation step to determine the total accessibility performance for each Disability Type.

5.4 Disability Type Total Impact Score

The third calculation step is the estimation of the Disability Type Total Impact Score. This score represents the overall accessibility performance of the building for a specific Disability Type $DT(i)$, after considering all applicable Assessment Dimensions.

For each Disability Type, the framework first calculates the Assessment Dimension Impact Scores $ADIS(i, j)$. These scores express how the building performs in each Assessment Dimension for the specific Disability Type. The Disability Type Total Impact Score is then calculated by aggregating the Assessment Dimension Impact Scores using the corresponding Assessment Dimension weights.

The Disability Type Total Impact Score is defined as:

$$DTTIS(i) = \sum_{j=1}^{m_i} [ADIS(i, j) \times W(i, j)]$$

where:

$DTTIS(i)$ is the Disability Type Total Impact Score for Disability Type i ;

$ADIS(i, j)$ is the Assessment Dimension Impact Score for Assessment Dimension j under Disability Type i ;

$W(i, j)$ is the normalized weight of Assessment Dimension j for Disability Type i ;

m_i is the number of applicable Assessment Dimensions for Disability Type i .

Since the Assessment Dimension weights for each Disability Type are normalized, the following condition applies:

$$\sum_{j=1}^{m_i} W(i, j) = 1$$

As a result, the Disability Type Total Impact Score remains on the same 0–5 scale as the criterion scores and Assessment Dimension Impact Scores.

The $DTTIS(i)$ value provides a disability-type-specific interpretation of accessibility performance. It shows how accessible the building is for a particular group of users, considering the combined effect of all relevant Assessment Dimensions. This is important because a building may have a good overall score while still presenting significant shortcomings for a specific Disability Type.

If an Assessment Dimension is not applicable for a specific Disability Type or building context, it is excluded from the aggregation. The weights of the remaining applicable Assessment Dimensions are then re-normalized before calculating the Disability Type Total Impact Score.

The Disability Type Total Impact Score supports the identification of user-group-specific accessibility shortcomings. Low values of $DTTIS(i)$ indicate that the building may not adequately support the needs of the corresponding Disability Type. These results are subsequently used in the final calculation of the Overall Building Score.

5.5 Overall Building Score

The final aggregation step in the mathematical model is the calculation of the Overall Building Score (OBS). The Overall Building Score represents the overall accessibility performance of the building, taking into account all applicable Disability Types and their relative importance within the assessment context.

The Overall Building Score is calculated by aggregating the Disability Type Total Impact Scores $DTTIS(i)$ using the corresponding Disability Type weights $W(i)$. Each Disability Type contributes to the final score according to its normalized weight.

The Overall Building Score is defined as:

$$OBS = \sum_{i=1}^n [DTTIS(i) \times W(i)]$$

where:

OBS is the Overall Building Score;

$DTTIS(i)$ is the Disability Type Total Impact Score for Disability Type i ;

$W(i)$ is the normalized weight of Disability Type i ;

n is the number of applicable Disability Types included in the assessment.

Since the Disability Type weights are normalized, the following condition applies:

$$\sum_{i=1}^n W(i) = 1$$

As a result, the Overall Building Score remains on the same 0–5 scale used throughout the framework. This ensures consistency between criterion-level scoring, Assessment Dimension results, Disability Type results, and the final building-level result.

The Overall Building Score provides a single aggregated value that summarizes the accessibility performance of the building. However, it should not be interpreted in isolation. The OBS is intended to provide an overall indication of performance, while the Disability Type scores, Assessment

Dimension scores, and criterion-level scores provide the detailed diagnostic information needed to understand where the building performs well and where shortcomings exist.

The calculation of the Overall Building Score follows the same logic presented in the WP8 methodology, where individual criterion scores are first adjusted through weighting, then aggregated into impact scores, total impact scores, and finally into the overall building-level result. In this way, the OBS provides a transparent and traceable link between the individual assessment criteria and the final accessibility classification.

If one or more Disability Types are not applicable to the assessment scope, they are excluded from the calculation. The weights of the remaining applicable Disability Types are then re-normalized before calculating the Overall Building Score. This ensures that the final result reflects only the relevant user groups considered in the assessment.

The Overall Building Score is used as the basis for the accessibility classification of the building. It can also support comparison across buildings, monitoring of accessibility improvements over time, and identification of priority areas for intervention when interpreted together with the more detailed assessment results.

For compatibility with the NEB Self-Assessment logic, the Overall Building Score may also be normalised to a 0–100 scale. This does not replace the AccesS 0–5 scoring scale but enables comparison with wider NEB reporting categories.

5.6 Accessibility Classification

The Accessibility Classification translates the Overall Building Score into a clear performance class. While the Overall Building Score provides a numerical value on the 0-5 scale, the classification system provides an easier interpretation of the building's accessibility performance.

The classification is based on five classes, ranging from Class E, which indicates very limited accessibility performance, to Class A, which indicates high accessibility performance.

Table 12 Accessibility classification based on the Overall Building Score.

Overall Building Score	Class	Interpretation	NEB-compatible interpretation
0.00-1.00	E	Very limited accessibility performance	Non-compliant/ needs improvement
1.01-2.00	D	Low accessibility performance	
2.01-3.00	C	Basic accessibility performance	Acceptable
3.01-4.00	B	Good accessibility performance	Good
4.01-5.00	A	High accessibility performance	Excellent/Best Practice

Class E – Very limited accessibility performance indicates that the building presents significant accessibility shortcomings. Many essential accessibility criteria are either absent, non-compliant, or

insufficiently addressed. Buildings in this class require substantial improvement before they can be considered accessible for diverse users.

Class D – Low accessibility performance indicates that some accessibility provisions may exist, but they are limited, fragmented, or inconsistently implemented. The building may address certain accessibility needs, but important shortcomings remain across one or more Disability Types or Assessment Dimensions.

Class C – Basic accessibility performance indicates that the building achieves a minimum functional level of accessibility. Essential requirements are generally addressed, but the building may still present limitations in usability, comfort, navigation, digital interaction, or social inclusion. This class represents a basic acceptable level, but further improvements are recommended.

Class B – Good accessibility performance indicates that the building performs well across most relevant accessibility criteria. Minimum requirements are generally exceeded, and the building provides a more inclusive, usable, and comfortable environment for diverse users. Some targeted improvements may still be needed in specific criteria or user groups.

Class A – High accessibility performance indicates that the building demonstrates strong and consistent accessibility performance. It addresses the needs of diverse users across the main Assessment Dimensions and provides high levels of usability, safety, comfort, navigation, digital interaction, and social inclusion. This class represents advanced accessibility performance within the framework.

The classification should be interpreted together with the detailed assessment results. A high Overall Building Score may still conceal shortcomings for a specific Disability Type, Assessment Dimension, or Evaluation Criterion. Therefore, the classification provides a summary result, while the detailed scores provide the diagnostic information required to identify priority improvement areas.

The Accessibility Classification can support communication, benchmarking, monitoring, and future certification activities. It provides a simple and transparent way to express the outcome of the assessment, while remaining directly linked to the underlying mathematical model and scoring methodology.

5.7 Interpretation of Results

The Comprehensive Accessibility Assessment Framework produces results at four levels of analysis. This multi-level structure is important because accessibility performance should not be interpreted only through a single final score. A building may achieve an acceptable Overall Building Score while still presenting important shortcomings for a specific disability type, assessment dimension, or evaluation criterion. For this reason, the results must be reviewed at both aggregated and detailed levels.

The four levels of results are:

1. **Overall Building Score**
2. **Disability Type score**
3. **Assessment Dimension score**
4. **Evaluation Criterion score**

The **Overall Building Score** provides the highest-level summary of accessibility performance. It expresses the weighted accessibility performance of the building across all applicable Disability Types, Assessment Dimensions, and Evaluation Criteria. This score is used to determine the accessibility class of the building and to support communication of the overall assessment outcome.

The **Disability Type score** provides a user-group-specific interpretation of accessibility performance. It shows how well the building responds to the needs of each Disability Type included in the assessment. This level is important because a building may perform well overall but still be insufficiently accessible for a specific group of users. Disability Type scores therefore help identify whether the building provides balanced accessibility across diverse user needs.

The **Assessment Dimension score** shows the performance of the building within each accessibility dimension, such as Spatial & Physical Accessibility, Safety & Environmental Comfort, Cognitive & Navigational Accessibility, Digital Interaction & Smart Usability, and Social Inclusion & Human Experience. These scores help identify whether shortcomings are concentrated in a specific area of accessibility performance. For example, a building may perform well in physical accessibility but poorly in wayfinding, environmental comfort, or digital usability.

The **Evaluation Criterion score** provides the most detailed level of assessment. It shows the score assigned to each individual criterion, based on the relevant performance indicators and supporting evidence. This level is essential for identifying the specific accessibility shortcomings that require improvement. Low scores at criterion level indicate where targeted corrective actions are needed.

Table 13 Levels of interpretation of assessment results.

Result level	Purpose of interpretation
Overall Building Score	Provides the final aggregated accessibility performance and classification
Disability Type score	Identifies how the building performs for each user group
Assessment Dimension score	Identifies strengths and shortcomings across accessibility domains
Evaluation Criterion score	Identifies specific issues requiring corrective action

For each low-scoring EC, the assessor may refer to the corresponding progressive implementation levels and market-readiness screening to identify feasible improvement pathways. These pathways may include design correction, operational changes, installation of assistive technologies, integration of smart controls, monitoring systems or digital twin-enabled services.

The interpretation of results should therefore begin with the Overall Building Score, but it should not end there. The assessor should examine the Disability Type scores to determine whether any user group is underserved. The Assessment Dimension scores should then be reviewed to identify which areas of accessibility performance require attention. Finally, the Evaluation Criterion scores should be analysed to identify the precise shortcomings that need to be addressed.

Criteria receiving low scores should be highlighted as priority improvement areas. A score of **1** indicates that the criterion is non-compliant or absent. This is a shortcoming. A score of **2** indicates that the criterion is only partially addressed. This is a shortcoming. These criteria should be clearly reported and linked to recommended improvement actions.

The multi-level interpretation of results makes the framework both an assessment tool and a diagnostic tool. The Overall Building Score supports classification and comparison, while the detailed scores support targeted improvement. This allows stakeholders to understand not only how accessible a building is overall, but also why it received that result and where action is required.

5.8 Nomenclature

Table 14 Nomenclature for the mathematical model.

Symbol	Meaning	Notes
(i)	Index for Disability Type	(i = 1, 2, ..., n)
(j)	Index for Assessment Dimension	(j = 1, 2, ..., m _i)
(k)	Index for Evaluation Criterion	(k = 1, 2, ..., p _{ij})
(n)	Number of applicable Disability Types	Depends on the assessment scope
(m _i)	Number of applicable Assessment Dimensions for Disability Type (i)	May differ between Disability Types
(p _{ij})	Number of applicable Evaluation Criteria for Disability Type (i) and Assessment Dimension (j)	Excludes non-applicable criteria
(DT(i))	Disability Type (i)	User group or functional need considered in the assessment
(AD(j))	Assessment Dimension (j)	Accessibility domain assessed within the framework
(EC(i,j,k))	Evaluation Criterion (k) under Disability Type (i) and Assessment Dimension (j)	Operational assessment item
(PI(i,j,k))	Performance Indicator linked to (EC(i,j,k))	Measurable or verifiable indicator used to support scoring
(S(i,j,k))	Score assigned to Evaluation Criterion (k)	(S(i,j,k) ∈ {0,1,2,3,4,5})
(W(i))	Weight of Disability Type (i)	Normalized so that (∑ _{i=1} ⁿ W(i)=1)
(W(i,j))	Weight of Assessment Dimension (j) for Disability Type (i)	Normalized so that (∑ _{j=1} ^{m_i} W(i,j)=1)

($W(i,j,k)$)	Weight of Evaluation Criterion (k) under Disability Type (i) and Assessment Dimension (j)	Normalized so that ($\sum_{k=1}^{p_{ij}} W(i,j,k)=1$)
($ACS(i,j,k)$)	Adjusted Criterion Score	($ACS(i,j,k)=S(i,j,k)\times W(i,j,k)$)
($ADIS(i,j)$)	Assessment Dimension Impact Score	($ADIS(i,j)=\sum_{k=1}^{p_{ij}} ACS(i,j,k)$)
($DTTIS(i)$)	Disability Type Total Impact Score	($DTTIS(i)=\sum_{j=1}^{m_i} [ADIS(i,j)\times W(i,j)]$)
(OBS)	Overall Building Score	($OBS=\sum_{i=1}^n [DTTIS(i)\times W(i)]$)
($Class$)	Accessibility performance class	Derived from the Overall Building Score
(A)	High accessibility performance	($4.01 \leq OBS \leq 5.00$)
(B)	Good accessibility performance	($3.01 \leq OBS \leq 4.00$)
(C)	Basic accessibility performance	($2.01 \leq OBS \leq 3.00$)
(D)	Low accessibility performance	($1.01 \leq OBS \leq 2.00$)
(E)	Very limited accessibility performance	($0.00 \leq OBS \leq 1.00$)
(NA)	Not applicable	Criterion excluded from aggregation and weights re-normalized
($DT1$)	Physical disabilities	Mobility, reach, strength, manoeuvring, fatigue
($DT2$)	Sensory disabilities	Visual, hearing, tactile and auditory accessibility
($DT3$)	Cognitive disabilities	Comprehension, memory, orientation, predictability
($DT4$)	Communication & Mental Health	Sensory load, clarity, routine, overstimulation
($DT5$)	Multiple / Situational Disability	Access to information and interaction
($AD1$)	Spatial & Physical Accessibility	Access, movement, reachability, physical use
($AD2$)	Safety & Environmental Comfort	Safety, emergency, thermal comfort, air quality, lighting, acoustics
($AD3$)	Cognitive & Navigational Accessibility	Orientation, wayfinding, legibility, information clarity
($AD4$)	Digital Interaction & Smart Usability	Controls, interfaces, response time, feedback, smart systems
($AD5$)	Social Inclusion & Human Experience	Participation, dignity, independence, inclusive shared use
EC	Evaluation Criterion	Specific accessibility condition to be assessed
PI	Performance Indicator	Observable, measurable, or verifiable basis for assessment
ACS	Adjusted Criterion Score	Weighted contribution of an Evaluation Criterion
ADIS	Assessment Dimension Impact Score	Aggregated score for one Assessment Dimension under one Disability Type
DTTIS	Disability Type Total Impact Score	Aggregated accessibility score for one Disability Type
OBS	Overall Building Score	Final weighted building accessibility score
($\sum$)	Summation operator	Indicates aggregation of weighted scores
($\in$)	Belongs to	Used to define the possible values of a variable
($\leq$)	Less than or equal to	Used in score ranges and threshold definitions
($\geq$)	Greater than or equal to	Used in score ranges and threshold definitions

6 Assessment Procedure and Use of Results

6.1 Assessment Workflow

The assessment workflow defines the practical sequence for applying the Comprehensive Accessibility Assessment Framework. It ensures that the assessment is conducted in a structured, transparent, and repeatable way, from the definition of the building context to the interpretation of results and identification of improvement priorities.

The workflow follows ten main steps. These steps guide the assessor through the process of defining the scope, selecting the applicable components of the framework, collecting evidence, assigning scores, calculating weighted results, and interpreting the final accessibility performance.

Table 15 Assessment workflow.

Step	Description
1	Define building type and assessment scope
2	Confirm applicable disability types
3	Confirm assessment dimensions
4	Select applicable evaluation criteria
5	Assign or confirm weights
6	Collect assessment evidence
7	Score each criterion
8	Calculate weighted results
9	Determine accessibility class
10	Identify shortcomings and improvement priorities

- Step 1 – Define building type and assessment scope. The first step is to define the building type and the scope of the assessment. This includes identifying whether the assessment applies to the whole building, a specific building zone, a group of spaces, a service area, a circulation route, or a particular system.
- Step 2 – Confirm applicable disability types. The assessor then confirms which Disability Types are applicable to the assessment. The selected Disability Types define the user-oriented basis of the assessment.
- Step 3 – Confirm assessment dimensions. The applicable Assessment Dimensions are then confirmed. These dimensions structure the assessment across the main domains of accessibility performance.
- Step 4 – Select applicable evaluation criteria. For each relevant Disability Type and Assessment Dimension, the assessor selects the applicable Evaluation Criteria. Criteria that are not relevant may be marked as non-applicable, provided that this decision is justified

Assessment Workflow

Comprehensive Accessibility Assessment Framework

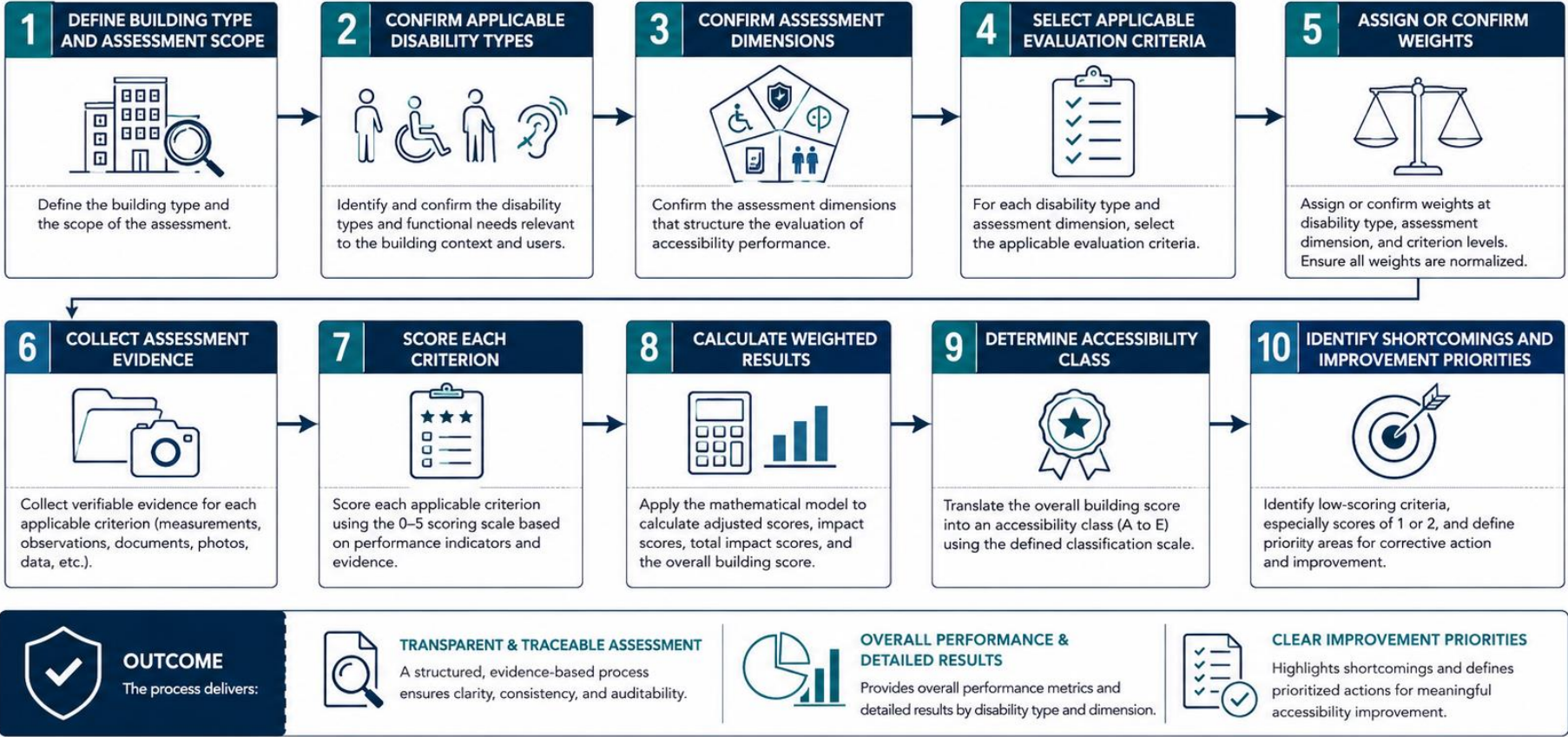


Figure 7 Assessment workflow and outcomes of the Comprehensive Accessibility Assessment Framework.

- Step 5 – Assign or confirm weights. The assessor assigns or confirms the weighting values to be used in the assessment. Weights are applied at Disability Type, Assessment Dimension, and Evaluation Criterion levels.
- Step 6 – Collect assessment evidence. Evidence is collected for each applicable Evaluation Criterion. Evidence may include site measurements, observations, photographs, drawings, BIM or model data, technical documentation, operational records, monitoring data, or user feedback where relevant.
- Step 7 – Score each criterion. Each applicable Evaluation Criterion is scored using the 0-5 scoring scale. The score should be based on the relevant Performance Indicators and supporting evidence.
- Step 8 – Calculate weighted results. After scoring, the mathematical model is applied. Criterion scores are multiplied by the relevant criterion weights to calculate Adjusted Criterion Scores. These are then aggregated into Assessment Dimension Impact Scores, Disability Type Total Impact Scores, and finally the Overall Building Score.
- Step 9 – Determine accessibility class. The Overall Building Score is translated into an accessibility class. The classification provides a clear summary of the building's accessibility performance.
- Step 10 – Identify shortcomings, improvement priorities and feasible intervention pathways. Low-scoring criteria should be highlighted, especially those receiving scores of 1 or 2. For each such criterion, the assessor should identify whether improvement can be achieved through design correction, operational change, digital enhancement, smart automation or assistive technology. Where relevant, the market-readiness screening may be used to indicate whether relevant solution categories are already available.

6.2 Evidence Collection

Evidence collection is a central part of the assessment procedure. The score assigned to each Evaluation Criterion must be supported by information that can be verified, reviewed, and documented. This ensures that the assessment is not based on assumptions or general impressions, but on evidence that reflects the actual accessibility condition of the building, space, system, or service being assessed.

The type of evidence required depends on the nature of the criterion and its Performance Indicators. Some criteria require direct measurement, while others require documentation review, visual inspection, operational records, monitoring data, or user input. In all cases, the assessor should collect sufficient evidence to justify the assigned score and to allow the result to be traced back to the observed or documented condition.

Acceptable evidence may include site measurements, design drawings, BIM or model data, photographs, operational records, sensor or monitoring data where available, and user feedback where relevant as well as digital twin data, sensor logs, interface logs, access-control data, mobile application data, smart-building dashboards, supplier technical datasheets, and evidence of interoperability with building management systems. Supplier datasheets may support evidence of technical feasibility, but they cannot replace site verification of installed performance.

Site measurements are used to verify quantitative accessibility requirements. They may include measurements of door widths, corridor widths, ramp gradients, turning spaces, control heights, reach distances, threshold heights, seating dimensions, lighting levels, opening forces, or other measurable characteristics.

Design drawings provide evidence of planned or existing building conditions. They may include architectural drawings, technical drawings, accessibility layouts, circulation plans, fire safety plans, mechanical and electrical drawings, and renovation drawings.

BIM or model data may be used where available to support digital or model-based assessment. BIM models can provide information on spatial dimensions, routes, clearances, levels, building elements, equipment location, and system integration.

Photographs provide visual documentation of the assessed conditions. Operational records provide evidence of how the building is managed and maintained. Sensor or monitoring data may provide evidence for criteria related to environmental comfort, safety, digital interaction, and smart building performance. User feedback may be used to complement technical evidence, especially for criteria related to usability, comfort, perceived safety, wayfinding, digital interaction, and participation.

The assessor should document the evidence used for each criterion and indicate whether the score is based on measurement, observation, documentation, model data, monitoring data, or user feedback. Where evidence is incomplete, outdated, inconsistent, or unavailable, this should be clearly stated in the assessment report.

6.3 Quality Assurance of the Assessment

Quality assurance is required to ensure that the Comprehensive Accessibility Assessment Framework is applied consistently, transparently, and reliably. Since the methodology may be used by different assessors, in different building types and assessment contexts, the assessment process must include mechanisms that reduce subjectivity and support comparable results.

The first quality assurance mechanism is the use of standard criterion sheets. Each Evaluation Criterion should be documented using the same structure, including the criterion code, disability type, assessment dimension, criterion definition, performance indicators, evidence required, and scoring guidance. This ensures that all criteria are assessed in a consistent format.

The second mechanism is the use of clear scoring descriptors. Each score on the 0-5 scale should be supported by a clear description of the condition it represents. This is particularly important for distinguishing between partial performance, minimum compliance, enhanced performance, and exemplary performance.

The third mechanism is the definition of evidence requirements. Each criterion should specify the type of evidence needed to support the score. By linking scores to evidence, the assessment becomes traceable and reviewable.

Assessor guidance is also required to support consistent application of the methodology. Guidance should explain how criteria are interpreted, how evidence is collected, how non-applicable criteria are treated, how weights are normalized, and how uncertain cases should be handled.

Low or uncertain scores should be subject to review. Criteria receiving a score of 1 or 2 should be checked carefully, because they indicate accessibility shortcomings. This is a shortcoming. Scores based on incomplete, unclear, or conflicting evidence should also be reviewed before finalizing the assessment.

The assessment should also include documentation of assumptions. Assumptions may be required when information is incomplete, when a criterion is interpreted in relation to a specific building use, or when weights are adapted to a particular context. These assumptions should be clearly recorded so that the assessment can be understood, repeated, or reviewed in the future.

Quality assurance should verify that each EC is correctly assigned to one Disability Type group and one Accessibility Domain, that the scoring evidence is sufficient, and that any reference to market-available solutions is treated as indicative rather than prescriptive.

6.4 Reporting of Results

The assessment report should present the results of the Comprehensive Accessibility Assessment Framework in a clear, structured, and traceable manner. The purpose of the report is not only to provide a final accessibility score, but also to explain how this score was produced, which parts of the building were assessed, which criteria were applied, and which shortcomings require improvement.

The report should begin with building identification and assessment scope. This should include the name or reference of the building, building type, location, assessed areas, assessment date, assessor information, and whether the assessment covers the whole building or selected spaces, systems, or routes. Defining the scope is necessary to ensure that the results are interpreted correctly.

The report should then present the applied Disability Types and Assessment Dimensions. This section should state which Disability Types were included in the assessment and which Assessment Dimensions were considered. Any exclusions or non-applicable elements should be clearly justified.

The report should include scoring tables showing the score assigned to each applicable Evaluation Criterion. It should also include weight tables presenting the Disability Type weights, Assessment Dimension weights, and Evaluation Criterion weights used in the calculation. The Overall Building Score should be clearly presented as the final aggregated numerical result of the assessment, and the corresponding accessibility class should also be presented.

A key part of the report should be the identification of criterion-level shortcomings. Criteria receiving low scores should be clearly highlighted. A score of 1 indicates that the criterion is non-compliant or absent. This is a shortcoming. A score of 2 indicates that the criterion is only partially addressed. This is a shortcoming. These findings should be linked to the evidence collected during the assessment.

Finally, the report should define priority improvement areas. These should be derived from the low-scoring criteria, their weights, and their relevance to the building context. Priority areas may relate to physical access, safety, environmental comfort, wayfinding, digital usability, or social participation.

Table 16 Expected contents of the assessment report.

Report output	Description
Building identification and scope	Building type, assessed areas, date, assessor, and assessment boundaries
Applied Disability Types and Assessment Dimensions	User groups and accessibility domains included in the assessment
Scoring tables	Criterion-level scores supported by evidence
Weight tables	Disability Type, Assessment Dimension, and Evaluation Criterion weights
Overall Building Score	Final aggregated accessibility score on the 0-5 scale
Accessibility class	Performance class derived from the Overall Building Score
Criterion-level shortcomings	Low-scoring criteria requiring attention
Priority improvement areas	Main areas where corrective action or upgrading is needed

In addition to aggregated scores, the assessment report should include an Evaluation Criterion-level reporting table. This table should make the assessment transparent by showing the score assigned to each criterion, the evidence used to support the score, the progressive implementation level achieved, and any identified shortcoming or improvement pathway. The purpose of this table is to ensure that the assessment output is not limited to a final score, but also functions as a diagnostic tool for identifying practical accessibility upgrades.

Table 17 Evaluation Criterion-level reporting template.

EC code	ECx.x.x
Disability Type group	DTx – [name]
Accessibility Domain	ADx – [name]
Score	0–5
Evidence used	Site audit / BIM / photos / sensor data / user feedback / documentation
Progressive implementation level achieved	Level 1–5, where applicable
Shortcoming identified	Yes / No; short description
Suggested improvement pathway	Design correction / operational change / digital enhancement / smart automation / assistive technology
Market-readiness note	Low / medium / high; indicative solution category

6.5 Policy Implications

The Comprehensive Accessibility Assessment Framework has important policy relevance because it provides a structured basis for assessing accessibility performance in the built environment. By defining common Disability Types, Assessment Dimensions, Evaluation Criteria, Performance Indicators, scoring rules, and weighting procedures, the framework supports a more harmonised approach to accessibility assessment.

One of the main policy contributions of the framework is that it supports the transition from fragmented compliance checking towards evidence-based performance assessment. Accessibility is often assessed through isolated requirements, national checklists, or context-specific interpretations. The framework addresses this by providing a common methodological structure that can be applied across different building types and assessment contexts.

The framework also enables transparent comparison of building accessibility performance. Since the methodology produces results at criterion, assessment dimension, disability type, and overall building level, it allows stakeholders to compare accessibility performance in a structured way. This can support benchmarking between buildings, monitoring of public building portfolios, and identification of recurring accessibility shortcomings across the built environment.

The results of the framework can also support evidence-based renovation and upgrade priorities. By identifying low-scoring criteria and weighted shortcomings, the assessment can help building owners, facility managers, and public authorities decide where improvement actions are most urgently needed. This supports a more strategic allocation of resources and helps ensure that accessibility investments address real performance gaps.

In addition, the framework can contribute to future accessibility monitoring and certification schemes. The Overall Building Score and accessibility classification provide a basis for communicating

performance in a simple and transparent way, while the detailed criterion-level results provide the technical evidence behind the classification.

This policy relevance is directly linked to the work of D8.2, Harmonized Accessibility Standards Guidelines and Implementation Roadmap. While D8.1 defines the methodological basis of the AccessS Accessibility Assessment Framework, D8.2 examines how this assessment logic can inform harmonisation, implementation, standardisation, certification, and knowledge-sharing activities. In this respect, D8.1 provides the assessment structure, whereas D8.2 translates this structure into recommendations for broader uptake and alignment with European and international standardisation processes.

The work of D8.2 highlights the need for more auditable and harmonised approaches to accessibility assessment. It identifies gaps in existing standards and certification practices, including the lack of harmonised certification criteria between countries, the limited treatment of cognitive accessibility, sensory accessibility and digital interfaces, and the need for measurable indicators and audit methodologies. The D8.1 framework directly responds to these needs by providing Evaluation Criteria, Performance Indicators, scoring rules and aggregation methods that can support a more measurable and comparable accessibility assessment approach.

The framework may therefore support the future development of accessibility audit requirements, certification-oriented procedures and common reporting formats. In line with the recommendations of D8.2, future standardisation or policy work could use the AccessS assessment methodology as a basis for defining technical requirements, user experience criteria, performance indicators, audit procedures, certification levels, and monitoring or renewal rules.

The Comprehensive Accessibility Assessment Framework also has important implications for the digitalisation of accessibility assessment. The Evaluation Criteria can be linked to BIM data, digital twins, sensor measurements, smart-building dashboards, interface logs and operational records. This creates opportunities for moving accessibility assessment from a purely static audit process towards a more dynamic and evidence-based model, where selected accessibility conditions can be monitored, updated and reassessed over time.

In policy terms, the framework can support accessibility upgrades that are not limited to minimum compliance, but also address usability, comfort, safety, digital interaction, participation and human experience. This is particularly relevant for smart buildings and smart city environments, where accessibility can be strengthened through adaptive controls, inclusive digital interfaces, real-time information, assistive technologies and responsive building systems.

The framework may also contribute to NEB-compatible reporting by linking accessibility performance to inclusion, usability, participation, quality of experience and user-centred design. In this way, the assessment results can support broader policy discussions on inclusive, sustainable and high-quality

built environments, while providing practical evidence for prioritising interventions and monitoring progress.

Annex 1 – Evaluation Criteria

The following table presents the Evaluation Criteria of the Comprehensive Accessibility Assessment Framework. For each criterion, the table provides a justification of its relevance within the corresponding Accessibility Domain. The justification considers functional relevance, safety, independence, usability, comfort, digital interaction, and inclusive participation.

Table 18 Evaluation Criteria and Justification DT1 – Physical Disability.

Accessibility Domain	EC Code	Evaluation Criterion	Justification
AD1 – Spatial & Physical Accessibility	EC1.1.1	Door Accessibility	Door accessibility is a fundamental condition for independent entry and movement within the building. It directly affects mobility, safety, evacuation and daily usability.
AD1 – Spatial & Physical Accessibility	EC1.1.2	Signage & Wayfinding for Mobility Users	Signage supports orientation and independent navigation, but it becomes meaningful only after basic physical access has been ensured.
AD2 – Safety & Environmental Comfort	EC1.2.1	Thermal Comfort Adaptability	Thermal comfort affects physical wellbeing, fatigue and circulation, especially for users who may remain indoors for extended periods.
AD2 – Safety & Environmental Comfort	EC1.2.2	Air Quality and Ventilation	Indoor air quality is critical in office buildings due to long occupancy periods and its direct effect on health, respiratory comfort and concentration.
AD2 – Safety & Environmental Comfort	EC1.2.3	Lighting and Glare Control	Proper lighting supports safe movement, spatial awareness and reduced visual strain, especially in circulation and screen-based work areas.
AD2 – Safety & Environmental Comfort	EC1.2.4	Smart Monitoring of Safety & Comfort	Smart monitoring improves operational control and preventive management, but acts mainly as a supporting mechanism rather than a direct accessibility condition.
AD3 – Cognitive & Navigational Accessibility	EC1.3.1	Visual Connection to Key Points	Direct visibility and clear signposting of exits, lifts and restrooms are essential for independent movement and efficient navigation.
AD3 – Cognitive & Navigational Accessibility	EC1.3.2	Multisensory Navigation Support	Multisensory navigation provides alternative ways of orientation and reduces dependence on assistance.
AD3 – Cognitive & Navigational Accessibility	EC1.3.3	Visibility and Lighting of Pathways	Adequate lighting helps users recognise routes, floor textures and signage, supporting the effectiveness of navigation elements.

AD4 – Digital Interaction & Smart Usability	EC1.4.1	Low-Force Operation	Low-force operation is critical for users with limited strength, dexterity or mobility. Excessive force can fundamentally compromise accessibility.
AD4 – Digital Interaction & Smart Usability	EC1.4.2	Haptic and Auditory Feedback	Multisensory feedback improves confirmation of actions, usability and user confidence during interaction with smart systems.
AD4 – Digital Interaction & Smart Usability	EC1.4.3	Control Response Time	Fast and reliable response reduces repeated actions, frustration and operational errors for users with slower motor responses.
AD5 – Social Inclusion & Human Experience	EC1.5.1	Ergonomic Public Furniture	Ergonomic furniture supports comfort, daily usability and equal participation in office and shared environments.
AD5 – Social Inclusion & Human Experience	EC1.5.2	Rest and Interaction Points	Accessible resting areas reduce fatigue, support mobility endurance and encourage social interaction.
AD5 – Social Inclusion & Human Experience	EC1.5.3	Adaptable Participation Equipment	Height-adjustable and one-hand operable equipment enables participation in meetings, collaborative spaces and shared services.

Table 19 Evaluation Criteria and Justification DT2 – Sensory Disability.

Accessibility Domain	EC Code	Evaluation Criterion	Justification
AD1 – Spatial & Physical Accessibility	EC2.1.1	Hazard Warning Surfaces	Tactile warning surfaces are essential for safe movement and hazard detection near stairs, ramps and intersections.
AD1 – Spatial & Physical Accessibility	EC2.1.2	Auditory Guidance Systems	Audio guidance improves independent navigation and orientation, especially in complex layouts and vertical circulation areas.
AD1 – Spatial & Physical Accessibility	EC2.1.3	Visual Alerts for Alarms	Visual alarms are critical life-safety elements for users with hearing impairments and ensure equal access to emergency warnings.
AD2 – Safety & Environmental Comfort	EC2.2.1	Multisensory Alarm Systems	Multisensory alarms are essential for inclusive emergency communication and directly affect life safety and evacuation.
AD2 – Safety & Environmental Comfort	EC2.2.2	Acoustic Signal Clarity	Clear audible communication is essential for emergency response and orientation in noisy or complex office environments.
AD2 – Safety & Environmental Comfort	EC2.2.3	Emergency Lighting for Low Vision	Emergency lighting supports safe evacuation, route visibility and reduced disorientation for users with low vision.
AD3 – Cognitive & Navigational Accessibility	EC2.3.1	Multisensory Wayfinding System	Continuous multisensory wayfinding is fundamental for independent movement and equal access during everyday building use.
AD3 – Cognitive & Navigational Accessibility	EC2.3.2	Emergency Wayfinding Accessibility	Accessible emergency navigation is critical for evacuation, although it is mainly activated during emergency situations.
AD4 – Digital Interaction & Smart Usability	EC2.4.1	Voice Command Functionality	Voice-enabled operation improves hands-free access and usability, particularly in smart office environments.
AD4 – Digital Interaction & Smart Usability	EC2.4.2	Captioning and Visual Alarms	Captions and visual indicators are essential for equal access to information, notifications and emergency communication.
AD4 – Digital Interaction & Smart Usability	EC2.4.3	Personal Assistive Synchronization	Integration with hearing aids, screen readers and accessibility apps supports personalised and independent interaction.
AD5 – Social Inclusion & Human Experience	EC2.5.1	Hearing Loop and Assistive Systems	Assistive hearing systems are essential for equal participation in meetings, presentations and collaborative activities.
AD5 – Social Inclusion & Human Experience	EC2.5.2	High-Contrast Environmental Design	High visual contrast improves spatial recognition, orientation and safety for users with low vision.
AD5 – Social Inclusion & Human Experience	EC2.5.3	Smart Sensory Adaptation	Adaptive smart systems improve comfort and usability, but mainly function as supportive optimisation technologies.

Table 20 Evaluation Criteria and Justification DT3 – Cognitive & Neurodiversity.

Accessibility Domain	EC Code	Evaluation Criterion	Justification
AD1 – Spatial & Physical Accessibility	EC3.1.1	Soothing Lighting & Color Temperature	Lighting quality has a continuous impact on sensory comfort, stress reduction, concentration and wellbeing for neurodiverse users.
AD1 – Spatial & Physical Accessibility	EC3.1.2	Navigational Cues Reinforced Digitally	Simplified digital navigation reduces cognitive overload and supports orientation in complex environments.
AD2 – Safety & Environmental Comfort	EC3.2.1	Predictable Environmental Transitions	Gradual transitions in light, sound and temperature reduce confusion, anxiety and sensory overload between zones.
AD2 – Safety & Environmental Comfort	EC3.2.2	Acoustic and Visual Balance	Stable acoustic and visual conditions directly support concentration, emotional regulation and daily comfort.
AD2 – Safety & Environmental Comfort	EC3.2.3	Calm Emergency Waiting Areas	Calm refuge areas are important during emergencies, although their use is situational rather than continuous.
AD3 – Cognitive & Navigational Accessibility	EC3.3.1	Simplified Wayfinding Maps	Simplified maps reduce cognitive overload and support independent navigation in complex office environments.
AD3 – Cognitive & Navigational Accessibility	EC3.3.2	Spatial Familiarity Across Floors	Consistent layout logic and repeated wayfinding codes improve predictability, memory retention and intuitive navigation.
AD4 – Digital Interaction & Smart Usability	EC3.4.1	Visual Focus Stability	Stable digital interfaces prevent overstimulation, distraction, fatigue and discomfort during interaction with smart systems.
AD4 – Digital Interaction & Smart Usability	EC3.4.2	Personalized User Profiles	Personalised settings improve comfort and usability by adapting systems to individual cognitive and sensory preferences.
AD5 – Social Inclusion & Human Experience	EC3.5.1	Low-Stimulus Participation Zones	Quiet or low-sensory spaces support stress reduction, emotional regulation, concentration and social participation.
AD5 – Social Inclusion & Human Experience	EC3.5.2	Inclusive Color and Lighting Strategy	Calming lighting and neutral colour schemes reduce cognitive fatigue and sensory overload while supporting comfort and focus.

Table 21 Evaluation Criteria and Justification DT4 – Communication & Mental Health.

Accessibility Domain	EC Code	Evaluation Criterion	Justification
AD1 – Spatial & Physical Accessibility	EC4.1.1	Color Temperature Regulation	Warm and calming lighting reduces stress, anxiety and emotional discomfort in circulation and waiting areas.
AD1 – Spatial & Physical Accessibility	EC4.1.2	Non-Verbal Wayfinding Aids	Symbols, lighting cues and visual beacons support independent orientation and reduce reliance on text or verbal communication.
AD2 – Safety & Environmental Comfort	EC4.2.1	Stress-Reducing Lighting Design	Lighting conditions continuously affect mood, stress, emotional comfort and concentration in the workplace.
AD2 – Safety & Environmental Comfort	EC4.2.2	Smart Support Interfaces	Calm and supportive digital interfaces reduce frustration and cognitive stress during user interactions.
AD3 – Cognitive & Navigational Accessibility	EC4.3.1	Visual Continuity and Transparency	Open sightlines and visible exits reduce anxiety, confusion and feelings of entrapment, supporting stress-free navigation.
AD3 – Cognitive & Navigational Accessibility	EC4.3.2	Smart Emotional Navigation Aids	Personalised navigation feedback improves comfort and usability, but functions mainly as a supportive smart feature.
AD4 – Digital Interaction & Smart Usability	EC4.4.1	Calm Visual Design	Visually stable interfaces reduce anxiety, sensory stress and cognitive fatigue during repeated use of smart systems.
AD4 – Digital Interaction & Smart Usability	EC4.4.2	Inclusive Communication Tools	Speech-to-text, text-to-speech and chat-based tools directly support communication accessibility and independent service use.
AD5 – Social Inclusion & Human Experience	EC4.5.1	Calm Acoustic Environment	Controlled acoustics reduce stress, support concentration and improve communication clarity in office environments.
AD5 – Social Inclusion & Human Experience	EC4.5.2	Positive Sensory Stimulation	Curated sensory elements improve mood and emotional comfort, but mainly act as supportive enhancements.

Table 22 Evaluation Criteria and Justification DT5 – Multiple / Situational.

Accessibility Domain	EC Code	Evaluation Criterion	Justification
AD1 – Spatial & Physical Accessibility	EC5.1.1	Real-Time Accessibility Notifications	Immediate alerts about blocked or inaccessible routes support safe and uninterrupted movement in dynamic environments.
AD1 – Spatial & Physical Accessibility	EC5.1.2	Dynamic Wayfinding Update	Automatic wayfinding updates provide strong support for adaptive navigation during temporary spatial changes.
AD1 – Spatial & Physical Accessibility	EC5.1.3	Inclusive Information Delivery	Multiformat information improves accessibility for diverse users, but mainly supports communication rather than direct spatial adaptation.
AD2 – Safety & Environmental Comfort	EC5.2.1	Dynamic Obstacle Monitoring	Continuous monitoring of circulation routes is critical where temporary obstructions may affect safe accessibility.
AD2 – Safety & Environmental Comfort	EC5.2.2	Assistive Technology Integration	Interoperability with assistive devices improves usability and independence when interacting with smart building systems.
AD3 – Cognitive & Navigational Accessibility	EC5.3.1	Accessible Temporary Layouts	Accessible circulation and signage during temporary layouts preserve baseline accessibility and reduce confusion.
AD3 – Cognitive & Navigational Accessibility	EC5.3.2	Smart Dynamic Wayfinding	Real-time adaptive navigation supports safe and efficient movement when routes change due to closures, hazards or operations.
AD3 – Cognitive & Navigational Accessibility	EC5.3.3	Crowd Flow Visualization	Crowd-density information improves comfort, safety and route selection, especially for users affected by stress or situational barriers.
AD4 – Digital Interaction & Smart Usability	EC5.4.1	Offline Function Continuity	Core smart functions must remain operational during connectivity failures to ensure continuous accessibility and safety.
AD4 – Digital Interaction & Smart Usability	EC5.4.2	Adaptive Font and Display Size	Adjustable interface elements improve usability for diverse temporary or situational needs, mainly through personalisation.
AD4 – Digital Interaction & Smart Usability	EC5.4.3	Emergency Digital Redundancy	Backup operation of communication and alert systems is critical for life safety and uninterrupted access to essential information.
AD5 – Social Inclusion & Human Experience	EC5.5.1	Environmental Adaptability	User-adjustable environmental conditions directly support comfort, stress reduction, usability and inclusive participation.
AD5 – Social Inclusion & Human Experience	EC5.5.2	Dynamic Crowd Management	Real-time crowd information helps users avoid congestion and select more comfortable participation conditions.

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