



Vulnerable Building Users



Firefighting



2001 WTC, New York



2017 Grenfell Tower, London



Accessibility for All



Fire Safety for All

# 2020 Unified Terminology

## Concepts, Terms & Definitions

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## Introduction

So many diverse design disciplines and interested groups are involved in the realization, operation and maintenance of a Safe, Inclusive, Resilient and Sustainable Human Environment (built, social, economic, virtual, and institutional) ... that the use of simple, easily assimilated language and precise, harmonized technical terminology must be widely exercised. For the effective application of Building Information Modelling (BIM), this is particularly important.

And concerning Fire Engineering, it is not clear when the practice began, but defining a concept simply in terms of performance in a 'standard test fire' is entirely inadequate, and fails to explain the actual meaning of the concept.

**This Terminology** ... a body of particular terms, each explaining and defining a single concept, covering inter-related building requirements, e.g. human health, accessibility and fire safety for all, firefighting, social rights, design, performance monitoring, and facility management ... takes account of:

1. **Sustainability Impact Assessment (SIA):** A continual evaluation and optimization process - informing initial decision-making, design, shaping activity/product/service realization, useful life, and termination or final disposal - of the interrelated positive and negative social, environmental, economic, institutional, political and legal impacts on balanced and equitable implementation of Sustainable Human & Social Development.
2. **WHO International Classification of Functioning, Disability and Health (ICF):** Adopted by the World Health Organization on 22 May 2001. Early drafts of ICF were denoted as 'ICIDH-2'. The ICF is a framework for describing and organizing information on functioning and disability. It provides a standard language and a conceptual basis for the definition and measurement of health and disability.
3. **Universal Declaration of Human Rights (UDHR):** Proclaimed by the United Nations General Assembly, following the devastation of World War II, in Paris on 10 December 1946.
4. **U.N. Convention on the Rights of Persons with Disabilities (CRPD):** Adopted by the United Nations on 13 December 2006, and entered into international legal force on 3 May 2008.
5. **Environmental Impact:** Any effect caused by a given activity on the environment, including human health, safety and welfare, flora, fauna, soil, air, water, and especially representative samples of natural ecosystems, climate, landscape and historical monuments or other physical structures, or the interactions among these factors ; it also includes effects on accessibility, cultural heritage or socio-economic conditions resulting from alterations to those factors.

**Fire Engineering Terms** ... take account of the 'realistic' end condition, i.e. a real fire in a real building which is occupied or used by real people with varying behaviour and abilities in relation to self-protection, independent evacuation to an external place of safety remote from a fire building, and active participation in a building's Fire Emergency Management Plan.

**General Terms** ... are also included in order to facilitate a better understanding of:

- the complexity of human behaviour and perception (visual, auditory, olfactory, gustatory, tactile and proprioceptive) ;
- the wide range of health conditions ; and, more specifically
- mental, cognitive and psychological impairments.

## 1 Building Design and Construction

### 1.1 Accessibility, of a Building

Ease of **independent** approach, entry, use of a building's facilities, services and information/communication systems, **egress** during normal conditions and removal from the building's vicinity, or **evacuation** during a fire emergency to a place of safety remote from the building ... by all of the building's potential users, with an assurance of their health, safety, welfare and security during the course of those activities.

### 1.2 Adaptability, of a Building

The extent to which a building is designed when new, or is capable of being easily modified at any later stage, to meet the changing life and living needs of the broad range of potential users/occupants, who may or may not have activity limitations or develop a health condition during the life cycle of that building.

### 1.3 Area of Rescue Assistance

A sufficiently large, constantly monitored (visually) building space directly adjoining, and visible from, a main vertical evacuation route - robustly and reliably protected from heat, smoke, flame and structural collapse during and after a fire - where people may temporarily wait in safety and with confidence for further information, instructions, and evacuation assistance or rescue, without obstructing or interfering with the evacuation of others.

*Commentary:* 'Robust', in the above context, means structurally hardened and resistant to mechanical damage during the fire and for a period of time afterwards, i.e. the 'cooling phase'.

### 1.4 Buffer Zone

The fire protected compartments and/or spaces immediately adjoining, to the sides on the same floor and above/below on different floors, the compartment of fire origin in a building.

*Commentary:* In the event of an outbreak of fire, the buffer zone is immediately evacuated and every effort is made to mitigate/reduce fire hazard and risk within the zone.

### 1.5 Building

A permanent construction - comprising structure, essential electronic, information and communication technologies (EICT's), and fabric (non-structure) - having a sustainable life cycle (100 years minimum), and providing habitable, functional and usable interior spaces for people, which comply with basic performance requirements.

*Commentary:* An example of a comprehensive body of basic performance requirements is contained in Annex I of the European Union's Construction Products Regulation No. 305/2011, dated 9 March 2011.

### 1.6 Building Vicinity

The external space or ground surrounding a building, the extent of which is 5m from the building line, or the distance required to easily, safely and accessibly overcome the height barrier of the main/principal building entrance above external ground level, whichever is the greater.

### 1.7 Built Environment

Anywhere there is, or has been, a human-made or wrought (worked) intervention in the natural environment, e.g. cities, towns, villages, rural settlements, service utilities, transport systems, roads, bridges, tunnels, and cultivated lands, lakes, rivers, coasts, and seas, etc., including the Virtual Environment.

### 1.8 City

A geographical region, with open and flexible boundaries, encompassing:

- a) an interwoven, densely constructed core (built environment) ;
- b) a very large and widely diverse resident population of more than 500,000 people (social environment) ;
- c) a supporting hinterland of lands, waters and other natural resources (cultivated landscape) ;

together functioning, under the freedoms and protection of law, as ...

- a complex living system (analogous to, yet different from, other living systems such as ecosystems and organisms) ; and
- a synergetic community capable of providing a high level of individual welfare and social wellbeing for all of its inhabitants.

### 1.9 Contraflow Circulation, in a Fire Building

Emergency access by firefighters or rescue teams into a building and towards a real fire, while building users are still moving away from the fire and evacuating the building.

### 1.10 Cool Smoke

Smoke, remote from the scene of a fire, which has cooled and is drifting at low levels.

### 1.11 Cost Effectiveness

To achieve a defined objective at the lowest cost, or to achieve the greatest benefit at a given cost.

### 1.12 Design Fire

A fire with specified exposure data intended for use in connection with structural fire engineering calculations.

*Commentary:* A design fire may either be representative of the thermal exposure described by the standard 'time-temperature-pressure' relationship in an International / European / National Standard, or some non-standard exposure intended to simulate particular fire exposure conditions.

### 1.13 Disproportionate Damage

The failure of a building's structural system: (i) remote from the scene of an isolated overloading action; and (ii) to an extent which is not in reasonable proportion to that action.

### 1.14 Doorset

A building assembly consisting of a fixed part (door frame), one or more movable parts (door leaves), and their ironmongery, the function of which is to allow or to prevent access and egress.

*Commentary:* A doorset may also include, at finished floor level, a door saddle (also known as a sill or threshold).

### 1.15 Egress, from a Building

Independent emergence of a user/users from a building, under normal ambient conditions, and his/her/their removal from its immediate vicinity.

### 1.16 Element of Construction

A functional part of a building, constructed from building materials and/or building components.

*Commentary:* Examples of an element of construction are: foundation, floor, roof, wall, etc.

### 1.17 Energy Cycle

The entire energy chain, including activities related to prospecting for, exploration, production, conversion, storage, transport, distribution and consumption of the various forms of energy, and the treatment and disposal of wastes, as well as the decommissioning, cessation or closure of these activities, minimizing harmful environmental impacts.

### 1.18 Environmental Impact

Any effect caused by a given activity on the environment, including human health, safety and welfare, flora, fauna, soil, air, water, and especially representative samples of natural ecosystems, climate, landscape and historical monuments or other physical structures, or the interactions among these factors ; it also includes effects on accessibility, cultural heritage or socio-economic conditions resulting from alterations to those factors.

### 1.19 Experimental Test Fire

A full or reduced scale fire in a test laboratory, with specified and controlled characteristics.

### 1.20 Facilitator

Any environmental factor which, through its presence or absence, improves activity and functioning, or reduces disability. [WHO ICF]

### 1.21 Fire Compartmentation

The division of a building into fire-tight compartments by fire, smoke and heat resisting elements of construction, in order to ...

- a) contain an outbreak of fire, including any smoke and heat generated by the fire ;
- b) prevent damage, within the building, to other adjoining compartments and spaces ;
- c) protect the building's interior from external fire attack, e.g. fire spread across the building's façade or from an adjacent building ;
- d) minimize adverse, or harmful, environmental impacts outside the building.

*Commentary:* Sustainable Buildings may only be partially compartmented, with their major extent comprising horizontally and/or vertically linked open spaces, in order to take advantage of natural patterns of building air movement for heating, cooling and/or ventilation purposes.

### 1.22 Fire Defence Plan

A pre-determined and co-ordinated use of available human and material means in order to maintain an adequate level of fire safety and protection within a building and, in the event of an outbreak of fire, to ensure that it is brought speedily under control and extinguished ... with the aim of minimizing any adverse or harmful environmental impacts caused by the fire.

*Commentary:* A Fire Defence Plan is developed for a specific building at design stage. It later becomes the basis for an occupied building's Fire Emergency Management Plan.

### 1.23 Fire Draught

A current of air within a fire building, moving towards the fire, supplying oxygen for combustion.

### 1.24 Fire Emergency Management Plan

An elaboration of the fire emergency response procedures for an occupied building, including information about the building's fire safety preparedness and prevention measures, the pre-emergency, emergency and post-emergency roles, duties and responsibilities assigned to building management personnel ... with the aim, in the event of a fire emergency, of ensuring the health, safety and welfare of all building users/occupants, including visitors to the building, contractors, and product/service suppliers.

### 1.25 Fire Engineering Design Objectives

An expression of the fire engineering design intent for a building, in the form of specific subordinate purposes, towards which the production of a fire defence plan is directed.

### 1.26 Fire Evacuation / Evacuation from a Fire Building

To withdraw, or cause to withdraw, all users/occupants from a building which is on fire, in pre-planned and orderly phased movements, via accessible routes, to an accessible place(s) of safety remote from the building.

*Commentary:* In exceptional circumstances, all building users/occupants may have to be evacuated in a single movement and in the shortest possible time.

### 1.27 Fire Extinguishment

All measures necessary to suppress and effectively quench a fire within a building and/or its immediate vicinity.

*Commentary:* Extinction of a fire is confirmed only after a thorough visual inspection by a competent person.

### 1.28 Fire-Induced Progressive Damage

The sequential growth and intensification of structural deformation and displacement, beyond fire engineering design parameters, and the eventual failure of elements of construction in a building – during a fire and the 'cooling phase' afterwards – which, if unchecked, will result in disproportionate damage, and may lead to total building collapse.

*Commentary:* Fire-induced progressive damage may commence a significant period of time before there is any breach in the integrity of a fire compartment's boundary.

### 1.29 Fire Resistance

The inherent capability of a building assembly, e.g. a doorset, or an element of construction, e.g. a wall or a floor, to resist the passage of heat, smoke and flame for a specified time during a fire.

*Commentary:* This term should no longer be used in connection with any aspect of structural performance in fire. See the preferred term below: 'Structural Reliability'.

### 1.30 Fire Resisting Doorset

A doorset / doorset assembly with side or over-panels, properly installed and fixed in a surrounding fire resisting element of construction, e.g. a wall, the function of which is to resist the passage of heat, smoke and flame for a specified time during a fire ... in order to:

- a) maintain the fire resistance performance of the fire resisting wall in which it is fixed ;
- b) protect a fire evacuation route from the ingress of heat, smoke and flames ;
- c) protect people waiting, during a fire emergency, in its near vicinity, e.g. in an area of rescue assistance ;
- d) protect a firefighter attack route from the ingress of heat, smoke and flames.

### 1.31 Flexibility, of a Building

The extent to which a building interior is designed, when new, to be capable of being easily modified at any later stage during the life cycle of that building - with minimal cost and user inconvenience - because of a person's changing life, living or work needs.

### 1.32 Floor of Temporary Refuge

An open, structurally robust floor/storey in a high-rise building - having an exceptionally low level of fire hazard and risk, 'intelligently' fitted with a suitable user-friendly and climate-friendly fire suppression system, e.g. water mist, and serviced by sufficient accessible, fire protected lifts/elevators capable of being used during a fire emergency ; it is designed to halt the spread of heat, smoke and flame beyond the floor/storey, and is intended as a place of temporary respite, rest and relative safety for building users/occupants before continuing with evacuation, and as a forward command and control base for firefighters.

*Commentary:* In a high-rise, tall, super-tall or mega-tall building, every 20th floor should be a 'floor of temporary refuge', even if the building is co-joined with another building, or there are sky bridges linking the building with one or more other buildings. Special provision should be made, on these floors, for accommodating large numbers of building users with activity limitations.

### 1.33 Habitable Space

A building space which is designed and constructed, or adapted, to be inhabited by people, i.e. a person passes the night there or otherwise uses the space for living.

### 1.34 Health Facility

An establishment, or any unit of an establishment, which provides competent health care for people.

### 1.35 Life Cycle

Consecutive and interlinked stages of a product (and/or service) system from raw material acquisition or generation of natural resources to the final disposal.

### 1.36 Life Cycle Cost

The social, environmental, economic and institutional costs, both qualitative / quantitative and direct / indirect, of the inputs, outputs and usefulness of a product (and/or service) system throughout its life cycle.

*Commentary:* The minimum life cycle for a Sustainable Building is 100 years.

### 1.37 Lift/Elevator Fire Evacuation Assembly

An essential aggregation of building components arranged together - comprising a lift/elevator, its operating machinery, a hard-construction vertical shaft enclosure, and on every floor served by the lift/elevator a sufficiently large, constantly monitored lobby for people to wait in safety and with confidence, all robustly and reliably protected from heat, smoke, flame and structural collapse during and after a fire - for the purpose of facilitating the safe evacuation of building users/occupants throughout the duration of a fire emergency.

*Commentary:* A lift/elevator fire evacuation assembly cannot be used during an earthquake emergency, unless it is clearly shown to be 'fit for that intended use'.

### 1.38 Maximum Credible Fire Scenario

A representation, and/or depiction, of fire and operating conditions in a building which are severe, but reasonable to anticipate, including those conditions related to building construction, occupancy, ventilation, fire loads, ignition sources, building space geometry, and fire control measures. [NIST-USA]

### 1.39 Penetrating Service

Any building service, e.g. cable, conduit, trunking, pipe, flue, duct or shaft, etc., which penetrates a fire resisting building assembly or element of construction.

### 1.40 Person-Centred Design

That design process which places real people at the centre of creative endeavours and gives due consideration to their responsible needs, and their health, safety, welfare and security in the Human Environment.

*Commentary:* This term includes such specific performance criteria as a sensory rich, social-oriented and accessible built environment, including independent travel mobility and usability of buildings and Electronic, Information and Communication Technologies (EICT's) ; fire safety and protection ; air, light and visual quality ; thermal comfort (ISO 7730) ; protection from unwanted or nuisance noise and ionizing / electromagnetic radiation, etc.

### 1.41 Place of Relative Safety

Any location beyond the buffer zone surrounding a fire compartment in a building.

*Commentary:* The difference between a 'place of relative safety' and an 'area of rescue assistance' is that people can move, should fire conditions deteriorate, from a 'place of relative safety' to the next pre-planned stage, or location, for their evacuation. Without evacuation assistance from other building users/occupants or being rescued by firefighters, people are unable to leave an 'area of rescue assistance'.



### 1.42 Place of Safety

- a) Any accessible location beyond a perimeter which is [100] metres from the fire building or a distance of [10] times the height of such building, whichever is the greater ; and
- b) Where necessary triage can safely be rendered, and from where effective medical care and supervision can be organized and provided within one hour of injury (the 'golden hour') ; and
- c) Where people can be identified.

*Commentary 1:* If there is a risk of an explosion associated with the fire, the numbers in square brackets above should be multiplied by a factor of 4.

*Commentary 2:* Following care, medical attention and the identification of building users/occupants at a place of safety, consideration should be given to what happens afterwards.

### 1.43 Real Fire

A fire which develops in a real building, and is influenced by such factors as the type of building and its occupancy; the combustible content (fire load); the ventilation, geometry and thermal properties of the fire compartment, or building space (should no fire compartmentation exist); the fire control measures in the building, and the actions of the emergency fire services.

*Commentary:* A real fire is a complex phenomenon. Consequently, in structural fire engineering, an idealized version of a real fire - a design fire - is used as the basis for design calculations.

### 1.44 Realistic End Condition, Building Fire

A real fire in a real building, which is used by real people with varying abilities in relation to self-protection, independent evacuation to a place of safety remote from a building, and active participation a building's fire defence plan.

*Commentary 1:* The realistic end condition is not a standard test fire, an experimental fire in a laboratory, or a design fire in a computer model, even if it is properly verified and validated.

*Commentary 2:* A standard test fire in a laboratory, involving exposure of a test specimen or prototype to standard test fire conditions, gives only a limited indication of: a) the likely performance of a particular product, material or component when exposed to real fire conditions; and b) the suitability of a product, material or component for a particular end use.

### 1.45 Resilience

The ability to function reliably during normal conditions, to withstand, adapt to or absorb unusual disturbance, disruption or damage, and thereafter to quickly return to an enhanced state of function.

### 1.46 Smoke

The visible suspension of solid and/or liquid particles in gases resulting from fire or pyrolysis.

### 1.47 Smoke Resistance

The inherent capability of a building assembly to resist the passage of smoke for a specified time during a fire.

#### **1.48 Sterile Space (Fire)**

An open building space of sufficient and appropriate extent - retaining an exceptionally low level of fire hazard and risk, and 'intelligently' fitted with a suitable user-friendly and climate-friendly fire suppression system, e.g. water mist – designed to resist and control, for a specified time during a fire, the advance of heat, smoke and flame.

#### **1.49 Structural Fire Engineering**

Those aspects of fire engineering concerned with structural design for fire, and the complex architectural interaction between a building's structure and fabric, i.e. non-structure, under conditions of fire and its immediate aftermath, including but not confined to the 'cooling phase'.

#### **1.50 Structural Reliability**

The ability of a structural system to fulfil its design purpose, for a specified time, under the actual environmental conditions encountered in a building.

#### **1.51 Sustainability Impact Assessment (SIA)**

A continual evaluation and optimization process - informing initial decision-making, design, shaping activity / product / service realization, useful life, and termination or final disposal - of the interrelated positive and negative social, environmental, economic, institutional, political and legal impacts on balanced and equitable implementation of Sustainable Human & Social Development.

#### **1.52 Sustainable Design**

The creative, person-centred and ethical design response - in resilient built or wrought form, and using smart systems - to the intricate, open, dynamic and continually evolving concept of Sustainable Human & Social Development, the many aspects of which must receive synchronous and balanced consideration.

#### **1.53 Usability**

Degree of familiarity, usefulness for a specific or many purposes, physical effort, and assimilation necessary to use an object, product or device, e.g. a tool, control switch, or machine.

#### **1.54 Virtual Environment**

A designed environment, electronically generated from within the built environment, which has the appearance, form, functionality and impact - to the person perceiving and actually experiencing it - of a real, imagined and/or utopian world.

**Commentary:** The virtual environment also includes all of the many types and formats of Electronic, Information and Communication Technologies (EICT's).

#### **1.55 Workplace / Place of Work**

A place intended to house workstations on the premises of an undertaking and/or establishment, and any other place within the area of the undertaking and/or establishment to which a worker has access in the course of his/her employment.

## 2 The Human Condition

### 2.1 Activity Limitation

A difficulty in the performance, accomplishment or completion of an activity at the level of an individual person. [WHO ICF]

**Commentary 1:** Difficulty encompasses all of the ways in which the performance of the activity may be affected: doing something with pain or discomfort ; doing it too slowly or quickly, or not at the right time and place ; or doing it awkwardly or otherwise not in a manner expected ; or not being able to do it at all. An activity limitation may range from a slight to a severe deviation, in terms of quality or quantity, in performing the activity to the extent or in a manner which is expected.

**Commentary 2:** This term replaces 'disability' in the obsolete World Health Organization's 1980 International Classification of Impairment, Disability and Handicap (ICIDH).

### 2.2 Agoraphobia

A fear of open spaces.

**Commentary:** Agoraphobia is one of the most commonly cited phobic disorders of people seeking psychiatric or psychological treatment. It has a variety of manifestations, e.g. a deep fear of leaving a building, or of being caught alone in some public place. When placed in threatening situations, agoraphobics may experience a panic attack.

### 2.3 Anosognosia

A neurological disorder marked by the inability of a person to recognize that he/she has an activity limitation or a health condition.

### 2.4 Building Related Ill-Health

Any adverse impact on the health of building users - while living, working, generally occupying or visiting a specific building - caused by the design, construction, management, operation or maintenance of that building.

**Commentary:** Symptoms and signs of Building Related Ill-Health (BRI), also known as 'sick building syndrome', may include the following ...

- irritation of the eyes, nose and throat ;
- respiratory infections and coughing ;
- voice hoarseness and wheezing ;
- asthma ;
- dry mucous membrane and skin ;
- erythema (reddening or inflammation of the skin) ;
- lethargy, mental fatigue and poor concentration ;
- headaches, nausea and dizziness ;
- stress ;
- muscular strain and backache ;
- hypersensitivity reactions ;
- cancers.

These symptoms and signs are present in the population at large, but are distinguished by being more prevalent in some building occupants, as a group, when compared with others. The symptoms and signs may disappear, or may be reduced in intensity, when an affected person leaves the building. It is not necessary that everyone in a building should be affected before BRI is suspected.

## 2.5 Climate Disruption Adaptation

Reliably implementing policies, practices, projects and institutional reforms with the aim of reducing the adverse environmental impacts and/or realizing the benefits directly/indirectly associated with climate disruption, including variability and extremes – in a manner which is compatible with Sustainable Human and Social Development.

## 2.6 Contextual Factors

The factors which, together, constitute the complete physical context of a person's life and living, i.e. environmental and personal. [WHO ICF]

## 2.7 Dementia

Any degenerative loss of intellectual capacity, to the extent that normal and occupational activities can no longer be carried out.

*Commentary:* This term is reserved for multifunctional disorders where memory, reasoning, judgement and other 'higher mental processes' are lost.

## 2.8 Disorientation

Inability of a person to orient himself/herself with regard to space, time and context in either the built or virtual environments.

*Commentary 1:* Acute disorientation brought on by the use of alcohol, 'social' drugs and some medicines, or dramatic alterations in a person's circumstances, e.g. involvement in a fire incident, is not uncommon or abnormal. Long term progressive disorientation is a symptom of a variety of psychological and/or neurological disorders.

*Commentary 2:* In conditions of dense smoke during a building fire, there is a high risk of firefighters becoming disoriented.

## 2.9 Economic Environment

The intricate web of real and virtual human commercial activity – operating at micro and macro-economic levels – which facilitates, supports, but sometimes hampers or disrupts, human interaction in the social environment.

## 2.10 Environmental Factors

Those factors which are external, or extrinsic, to the context of a person's life and living situation, i.e. the built environment and its features (real and/or virtual) and the social environment, with other people in different roles, social attitudes and values, services, systems and policies.

## 2.11 Ethics (singular)

The philosophical study of the moral value of human conduct and of the principles and rules by which it is, and/or should be, governed.

## 2.12 Ethics (plural)

- a) A code of behaviour considered appropriate or correct, especially one subscribed to by an individual person or a particular group of people ; and
- b) The moral fitness of human decisions and/or courses of action.

### 2.13 Frailty

A range of progressive health conditions in older people, including discernible physical weakness, low grip strength, unintentional weight loss, perception interference, unsteady balance and cognitive impairment, which significantly reduces their capacity to deal with personal and environmental stressors, and limits their capability for independent activity and participation.

*Commentary:* The geriatric syndrome of frailty occurs, principally, in a subset of older people who are the most vulnerable, are at increased risk of dependency and/or intervention by health services, and whose life expectancy is reduced. Although partially overlapping, 'frailty' is distinct from 'disability' and 'comorbidity'.

### 2.14 Health Condition

An alteration or attribute of the health status of a person which may lead to distress, interference with daily activities, or contact with health services ; it may be a disease, disorder, injury or trauma, or reflect other health-related states such as pregnancy, ageing, stress, congenital anomaly or genetic predisposition. [WHO ICF]

### 2.15 Human Environment

Anywhere there is, or has been, an intrusion by a human being in the natural environment.

*Commentary:* The Human Environment comprises the social, built, virtual, economic and institutional environments.

### 2.16 Human Health

A state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity. [WHO]

### 2.17 Impairment

Any loss or abnormality of a body function, or body structure.

*Commentary:* The word 'abnormality' is strictly used here to refer to a significant deviation from an established population mean, within measured statistical norms.

### 2.18 Impairment, Cognitive

A deficiency of neuropsychological function which can be related to injury or degeneration in specific area(s) of the brain.

### 2.19 Impairment, Mental

A general term describing a slower than normal rate in a person's cognitive developmental maturation, or where the cognitive processes themselves appear to be slower than normal - with an associated implication of reduced, overall mental potential.

### 2.20 Informed Consent

Consent freely obtained - without threats or improper inducements - after appropriate disclosure to a person of relevant, adequate and easily assimilated information in a form (e.g. oral, written, braille) and language understood by that person. [UN OHCHR]

### **2.21 Panic**

A sudden overwhelming feeling of anxiety, which may be of momentary or prolonged duration.

*Commentary:* Anxiety is the normal response of the human body to recognised danger. Numerous reflexes are involved. The supply of blood to the muscles is greatly increased, partly because the heart beats more rapidly and strongly, and partly because the blood vessels of the muscles dilate while those of many other organs constrict, diverting the flow of blood to where it is most needed. The muscles themselves are tensed. Breathing is deeper and more rapid. The mind becomes more alert, and the pupils dilate, admitting more light to the eyes.

### **2.22 Panic Attack**

A momentary period of intense fear or discomfort, accompanied by various symptoms which may include shortness of breath, dizziness, palpitations, trembling, sweating, nausea, and often a fear by a person that he/she is going mad.

*Commentary:* Panic attacks are initially unexpected, and typically last no longer than 15 minutes.

### **2.23 Panic Disorder**

A class of anxiety disorders characterized by recurrent panic attacks.

*Commentary:* This term is not used in cases where a known organic factor is responsible. Panic disorder is typically classified as with, or without, agoraphobia.

### **2.24 Participation**

A person's involvement in life and living situations, particularly in relation to health conditions, body functions, activities, and contextual factors.

*Commentary:* This term refers to all areas of human life, including the full experience of being involved in a practice, custom or social activity. Domains of participation - personal maintenance, mobility, exchange of information, social relationships, education, employment, economic worth, civil status - are 'social' in the sense that the character of these complex experiences is shaped by society and the socio-economic environment.

### **2.25 Participation Barrier**

An obstacle to participation in a community, society or culture - expected of a person without a health condition or physical / mental / cognitive / psychological impairment - which is created or increased by environmental factors.

*Commentary:* Obstacles to participation may not always be physical. For example, the absence of child-care facilities at a place of work will prevent a single parent from taking up employment with an organization.

## 2.26 People with Activity Limitations (E) / Personnes à Performances Réduites (F)

Those people, of all ages, who are unable to perform, independently and without assistance, basic human activities or tasks - because of a health condition or physical / mental / cognitive / psychological impairment of a permanent or temporary nature.

**Commentary:** The above term, in English and French, includes ...

- people who experience difficulty in walking, with or without a facilitation aid, e.g. stick, crutch, calliper or walking frame ;
- wheelchair users ;
- very young children (people under the age of 5 years) ;
- frail older people ;
- women in the later stages of pregnancy ;
- people who are visually and/or hearing impaired ;
- people who suffer from arthritis, asthma, or a heart condition ... or any partial or complete loss of language-related abilities, i.e. aphasia ;
- people who have a cognitive impairment disorder, including dementia, amnesia, brain injury, or delirium ;
- people impaired after the use of alcohol, other 'social' drugs e.g. cocaine and heroin, and some medicines ... or following exposure to environmental pollution and/or other irresponsible human activity, e.g. war or terrorism ;
- people who experience a panic attack in a real fire incident or other emergency ;
- people, including firefighters, who suffer incapacitation as a result of exposure, during a fire, to smoke and poisonous/toxic substances and/or elevated temperatures.

## 2.27 Personal Factors

Those factors which are internal, or intrinsic, to the context of a person's life and living situation, e.g. age, gender, level of education, socio-economic status, and life experiences, etc. [WHO ICF]

## 2.28 Personal Representative

A person charged, by relevant law, with the duty of representing another person's interests in any specified respect, or of exercising specified rights on that person's behalf - and including the parent or legal guardian of a child, i.e. a person under the age of 18 years, unless otherwise provided for by relevant law.

## 2.29 Post-Traumatic Stress Disorder

An anxiety disorder which emerges following a psychologically distressing, traumatic ordeal such as a natural disaster, accident, fire, war, etc.

**Commentary:** Symptoms and signs may include re-experiencing the trauma in dreams, recurring thoughts and images, a psychological numbness with an accompanying feeling of lessened involvement with events and surroundings, hypervigilance, and an exaggerated startle response.

## 2.30 Skill

The ability of a person - resulting from competent training and sufficient regular practice - to carry out complex, well-organized patterns of behaviour efficiently and adaptively, in order to achieve some end or goal.

### **2.31 Social Environment**

The complex network of real and virtual human interaction - at a communal or larger group level - which operates for reasons of tradition, culture, business, pleasure, information exchange, institutional organization, legal procedure, governance, human betterment, social progress and spiritual enlightenment, etc.

### **2.32 Social Participation**

A person's involvement in life and living situations, particularly in relation to health conditions, body functions, activities and contextual factors. [WHO ICF]

*Commentary:* This term refers to all areas of human life, including the full experience of being involved in a practice, custom or social activity. Domains of participation - personal maintenance, mobility, exchange of information, social relationships, education, employment, economic worth, civil status - are 'social' in the sense that the character of these complex experiences is shaped by society and the socio-economic environment.

### **2.33 Social Rights**

Rights to which an individual person is legally entitled, e.g. the right to free elementary education [Art.26(1), UDHR], but which are only exercised in a social context with other people, and with the active support of a competent legal authority, e.g. a nation state.

*Commentary:* In contrast to human rights, it is not protection from the state which is desired or achieved, but freedom with the state's help.

### **2.34 Social Solidarity**

Unity of purpose, e.g. social wellbeing for all, and cohesion of interests, sympathies, tolerances, etc., among members of the same community, society or culture.

### **2.35 Social Wellbeing for All**

A general condition – for every person in a community, society or culture - of health, happiness, creativity, responsible fulfilment, and sustainable development.

### **2.36 Sustainable Human & Social Development**

Development which meets the responsible needs of this generation - without stealing the life and living resources from future generations, especially our children, their children, and the next five generations of children.

*Commentary:* Responsible needs are defined and elaborated as 'rights' in the 1948 Universal Declaration of Human Rights, subsequent International Rights Legislation, and the United Nations 2015-2030 Sustainable Development Framework Agenda.

### **2.37 Vulnerable People**

Those people - in a community, society or culture - who are most at risk of being physically, psychologically or sociologically wounded, hurt, damaged, injured, or killed.

### **2.38 Welfare, Individual**

A person's general feeling of health, happiness and fulfilment.



## 3 Human Perception

### 3.1 Figure-Ground Perception

The ability of a person to focus on relevant target material, e.g. visual, auditory, olfactory or tactile, in correct relationship to the remainder of the perceptual field.

### 3.2 Perception

Interpretation of sensory information by the brain and central nervous system, e.g. visual, auditory, olfactory, gustatory, tactile or proprioceptive, with the aim of developing understanding prior to action.

### 3.3 Proprioception

The perception by a person of stimuli relating to his/her position and movement in space, and his/her posture, equilibrium, and internal condition.

*Commentary:* Proprioception is the sixth human sense. It is also the sense which transmits information to the brain concerning the position of a person's limbs relative to his/her torso.

### 3.4 Space Perception

The experienced sense of space within which a person acts and behaves over time.

*Commentary:* This is a general term used to cover depth perception, awareness of distance and direction, real movement, apparent and relative movement, personal space, etc.

### 3.5 Impairment, Visual

Permanent or temporary functional limitation of the eye or eyes, or the vision system ... which leads to:

- Loss of visual acuity, and inability of a person to see objects as clearly as a healthy individual ;
- Loss of visual field, i.e. inability of a person to see as wide an area as the average individual without moving the eyes or turning the head ;
- Photophobia, i.e. pain or discomfort to the eyes when looking at light ;
- Diplopia, i.e. double vision ;
- Visual distortion ;
- Visual perceptual difficulties ; or
- Any combination of the above features.

## **4 Firefighting in Buildings**

### **4.1 Alarm / Emergency Communication**

A signal, phone call or text/fax message from a person or a smart device indicating the existence of an emergency or other situation that requires action by an emergency services organization.

### **4.2 Authority Having Jurisdiction (AHJ)**

An organization, office, or individual responsible for enforcing the requirements of a code/regulation or standard, or for approving equipment, materials, an installation, or a procedure.

### **4.3 Emergency Incident**

Any situation to which an emergency services organization responds to deliver emergency services, including rescue, fire suppression, emergency medical care, special operations, law enforcement, and other forms of hazard control and mitigation.

### **4.4 Full Response Time**

The time interval from the receipt of an emergency communication at the primary public safety answering point (PSAP) to when emergency response units are initiating action or intervening to control a fire incident.

### **4.5 Hazard**

A condition that presents the potential for harm to people, property, or the environment.

### **4.6 Hazardous Material**

A substance that is capable of creating harm to people, the environment, or property due to its toxicity, chemical reactivity, decomposition, or corrosivity; is capable of explosion or detonation; or presents biological hazards, whether used for its intended purpose or as a weapon of mass destruction (WMD) or for illicit laboratory purposes, environmental crimes, or industrial sabotage.

### **4.7 Incident Commander**

The individual responsible for all fire incident activities, including the development of strategies and tactics, and the ordering and release of support resources.

### **4.8 Initiating Action / Intervention Time**

The time interval from when the first emergency response unit arrives at the scene of a fire to the initiation of emergency mitigation, i.e. when there are sufficient numbers of firefighters, equipment and support units present to commence, following a reconnaissance of the scene, controlled and disciplined fire attack and rescue operations.

### **4.9 Public Safety Answering Point (PSAP)**

A facility in which emergency communications from the public are answered, in a suitably accessible format for the sender.

### **4.10 Rescue Operations**

Those firefighting activities directed at locating endangered and vulnerable people at an emergency incident, safely removing those people from danger, treating the injured, and providing for transport to an appropriate health care facility.

[ To Be Continued ]