

PCAT

**PERSON-CENTERED
ASSESSMENT TOOL**

Edition 1.1

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PCAT

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Person-Centered Assessment Tool (PCAT) 1.1

The Person-Centered Assessment Tool (PCAT) 1.1 has been designed as a teaching and learning tool for the student of design, practicing professional seeking further knowledge, and the lay person or professional in an allied field. The success of the Tool's use will depend on the interest brought by the user or participant. To ensure you have all PCAT components, please take a moment to review the following list. In addition to this cover sheet, your PCAT package should include the following information:

- Introduction to the PCAT (2 pages);
- An explanation of the Performance Functioning Categories (12 pages);
- **Overview of phenomenology and impact of Rudolf Steiner's work (TBD)**
- The Person-Centered Assessment Tool (PCAT) 1.1 (April 2006)

The assessment tool is intended to fulfill three primary objectives:

- To aid reviewers – whether design professionals or laypeople – in evaluating the degree to which a building or space meets the performance needs of users across the spectrum of ability and age.
- To broaden the public understanding of Person-Centered Design beyond the needs of persons with disabilities and the Universal Design movement to approach design that supports and nourishes all persons and all users as part of the Global community.
- To increase awareness of Person-Centered Design, Sustainability, and human and building performance in the built environment.

We understand that the fundamentals of an evolving design ideology require assessment, testing, observation, and innovation that are contextual- we hope that this tool is successful in challenging the user. We recognize that field use of the assessment tool and understanding design through analyzing our built contexts is as vital as the process of assessment itself. Therefore, we would appreciate your questions, suggestions, and any other feedback that you might have regarding the framework and/or use of this tool. LIEBSTUDIOS: architecture can be contacted at (978) 745-9541, email info@liebstudios.com with PCAT in the subject line.

Introduction to the PERSON-CENTERED ASSESSMENT TOOL (PCAT)

Today's global population encompasses a diversity of age and ability greater than at any point in history. Never before has the human life cycle extended so long, nor harbored expectations of functionality and self-sufficiency at such advanced ages. Improvements in medical technology and the continuing emergence of holistic practices have allowed individuals with a wide range of disabilities or environmental limitations to lead productive and satisfying lives. "In 2000, there were 600 million people aged 60 and over and estimates show that number will climb to 1.2 billion by 2025 and 2 billion by 2050."¹

In 2002, the World Health Organization transformed the International Classification of Functioning, Disability and Health of 1980, into a more cohesive document setting the framework for a classification of health and health-related domains that does not draw distinct lines between function and disability. The WHO's holistic approach defines the ICF as a vehicle that joins together "what a person with a health condition can do in a standard environment (their level of capacity), as well as what they actually do in their usual environment (their level of performance)."² The WHO also defined *functioning* as "all body functions, activities and participation, while *disability* similarly remains an umbrella term for impairments, activity limitations and participation restrictions."³

The ICF 2002 breaks down the previous barrier of 'limitations' and presents a model for examining the diverse global population and the performance of environmental factors as a means to not only remove barriers but enhance the performance of people, places, buildings, activities, and social justice. As a vehicle to measure performance in the global environment the Person-centered Assessment Tool (PCAT) draws from the ICF 2002 as a model in the development and identification of Performance and Functional Categories that can be used to measure the context of Universality and Environmental Factors performance.

As the needs of the diverse global community change due to population changes and needs, natural disasters, for example The Tsunami Disaster in Asia 2004 that resulted in over 150,000 deaths, South Asia Earthquake, October 2005 that resulted in over 73,000 deaths, and terrorist events, buildings and spaces must be designed to perform well for a wide range of users, cultures, climates, and security needs. The basic assumption is that design that meets the needs and performance of users with a broad range of function and aware and sensitive to a specific environment will benefit all

¹ The world is ageing – have we noticed?, © World Health Organization 2005, www.who.int/ageing/en/

² World Health Organization, International Classification of Functioning, Disability and Health 2002, WHO Geneva 2002

³ IBID

users. Throughout recent years, there has been a growing international movement to promote person-centered design. The name for this design concept and movement varies between countries. Most commonly, it is referred to as “Universal Design.” Other less-common labels include “design-for-all,” “lifespan design”, “human-centered design” and “inclusive design.” In 1997, a group of American designers and advocates developed a set of seven principles of universal design. These principles are now in use worldwide, and are included within this document for historical reference.

While the understanding and acceptance of Person-centered principles continue to grow, and the charge of the WHO advocating for person-centered assessment gains broader acceptance there is currently no standard tool to assess the degree to which a building or space complies with the ICF. To this need, LIEBSTUDIOS: architecture has developed the Person-Centered Assessment Tool (PCAT) Edition 1.1. This assessment tool is not intended to measure compliance with global laws or codes, US laws or codes, or setting or defining minimum standards for access and sustainability. Minimum legal standards are a valuable starting point but are limited in their scope and in the kinds of Performance Categories considered. The Person-Centered Assessment Tool (PCAT) Edition 1.1, takes a broader viewpoint, attempting to evaluate performance for individual using, visiting, and experiencing buildings or spaces across the spectrum of ability and age.

For the purposes of using this assessment tool, you will be asked – to the best of your ability – to identify with varying criteria for Performance and Functioning in the context of the WHO’s ICF 2000, then evaluate the degree to which the space being assessed meets the needs of diverse categories of performance / functioning. We recognize the challenges of the task being asked of you, and that it may not be possible to fully understand all the issues and challenges presented by the Performance Categories.

This document in its inception is seen as an educational tool for the next generation of design professionals, planners, members of municipalities, and county representatives.

PERFORMANCE FUNCTIONING CATEGORIES

PERFORMANCE FUNCTIONING CATEGORIES OF PERSON-CENTERED ASSESSMENT

The Performance Functioning Categories presented herein are based upon the World Health Organization's, redefined ICF, The International Classification of Functioning, Disability and Health 2002 document. The ICF 2002 document provides a standard language and framework for the description of health and health-related states in the context of measuring functioning in society as a factor of their level of health in a physical and metaphysical sense. We have selected the WHO's ICF document as a foundation for assessing user and building performance as the ICF 2002 breaks down conventional societal barriers on a global scale, and presents a framework for straightforward examination of the human within the built, environmental and social context.¹

1. COGNITIVE FUNCTIONS:

i. LIMITATIONS IN INTERPRETING INFORMATION

As the global community becomes smaller through technology, trade, and the removal of cultural barriers, information exchange and sharing becomes more vital. Worldwide, regardless of context, a large number of people experience difficulty in interpreting information, principally as a result of literacy levels and cognitive reasoning. The increase or terrorist events and exposure to them by global communications and reporting is also seeing an increase in Post-traumatic Stress Disorder (PTSD). Examples may include: children at various age levels, people without basic literacy skills, people who speak a language different from the one being used in a particular context, cultural differences, the aged members of a culture, persons exposed either first hand or through exposure to information concerning traumatic events, and persons with cognitive, psychiatric, or learning impairments. The results of reduced cognitive functioning can include: confusion, disorientation, and the inability to function without queues in emergency situations. Individuals who have difficulties interpreting information may also have difficulty in exchanging information with others.

¹ World Health Organization, ICF 2002(International Classification of Functioning, Disability and Health), © 2002 WHO, Geneva, Switzerland.

Potential Environmental Problems that can influence Cognitive Functioning:

- Wayfinding and user signage
- Information displays that are not usable by all
- Complicated controls – controls that are not intuitive to the user and require a high level of acuity and awareness to operate
- (PA) Public Address systems and auxiliary services not available for all users
- Emergency announcements or temporary messages that cannot be understood by all users (which can cause anxiety and fear resulting in psychological and physiological changes in perception and that can lead to alarm or panic levels)
- Unfamiliar or incongruous iconography language
- Contextual Triggers that may set off a PTSD episode causing the user to be unable to function.

2. SENSORY FUNCTIONS (functions related to the eye / ear):

i. VISION:

The World Health Organization (WHO) currently estimates that there are nearly 37 million blind people worldwide and an additional 124 million who have vision so poor that normal life is impossible. 28 million of them do not need to be. 90% of the blind and visually impaired live in developing countries where access to quality eye care is limited.”²

In the United States, 8.3 million Americans are legally blind. Blindness or low vision affects 3.3 million Americans age 40 and over, or one in 28. This figure is projected to reach 5.5 million by the year 2020. The study reports that low vision and blindness increase significantly with age, particularly in people over age 65. People 80 years of age and older currently make up eight percent of the population, but account for 69 percent of blindness. The study provides the most robust and up-to-date estimates available of the burden of visual impairment. It was sponsored by the National Eye Institute (NEI), part of the Federal government's National Institutes of Health (NIH).³

In developing countries unnecessary blindness has been connected to the following: cataract, glaucoma, corneal scarring, diabetic retinopathy, river blindness (onchocerciasis), trachoma and childhood blindness.⁴

² Orbis International, <http://www.orbis.org>, 2005

³ Vision Loss from Eye Diseases will increase as Americans Age, National Institutes of Health, October 2004, <http://www.nei.nih.gov/news/pressreleases/041204.asp>

⁴ Orbis International, <http://www.orbis.org>, 2005

Every day, our eyes process millions of stimuli, both simple and complex, providing the input our brains need to paint a picture of our environment. The complex process of vision involves gathering, directing, focusing and translating light into images. The eye is an intricate structure composed of delicate tissues and blood vessels, some solid, some liquid, some viscous gel. And each part of the eye is susceptible to disease or injury.⁵ While the reduction in light reaching the retina deteriorates with age, and a typical 80 year old person needs three times the amount of light for tasks needed by a typical person in their 30s, allergens are also a leading cause of reduced or low functioning vision.⁶

Potential Environmental Problems that can influence Visual Functioning:

- Insufficient lighting (for example, low natural and artificial lighting levels; changes in natural lighting levels during a standard day cycle and during different seasons of the year cycle;
- Sudden change from light to dark (gradual transition is necessary)
- Insufficient contrast differentiation of colors and elements (contrast necessary for proper differentiation)
- Temporary changes or disruptions to of a familiar environment (for example, changes in walkways and corridors, routes used in daily routines, etc.)
- Low olfactory and auditory functioning that results in the inability to learn or remember a space, spatial orientation or context
- Controls with complex visual directions or prompts
- Visually unclear information displays (for example, signs and Wayfinding, elevator panel buttons, visual information in small print or not in multiple or pictogram languages, etc.)
- Specific Age Related Problems: Glare; unable to differentiate colors and contrast; long transition time needed when going from light to dark, or from near to far (distant).

ii. HEARING:

Hearing impairment is the most frequent sensory deficit in human populations, affecting more than 250 million people in the world. Consequences of hearing impairment include inability to interpret speech sounds, often producing a reduced ability to communicate, delay in language acquisition, economic and educational disadvantage, social isolation and stigmatisation. It may be worsened by some medical conditions such as hypothyroidism, diabetes, and possibly hyperlipidemia, among others.⁷

⁵ John Hopkins Medicine, 2005, http://www.hopkinshospital.org/health_info/Eyes/

⁶ National Eye Institute, Facts about the Cornea and Corneal Disease, April 2005, <http://www.nei.nih.gov/health/cornealdisease/index.asp#3>

⁷ Mathers, Colin; Smith, Andrew; Concha, Marisol, Global Burden of Hearing Loss in the Year 2000, ©WHO Geneva 2003.

Most congenital and childhood onset hearing loss is included as sequelae to various disease and injury causes already included in the Global Burden of Disease Study. Examples include otitis media, meningitis, rubella, congenital anomalies and non-syndromal inherited hearing loss. Adult-onset hearing loss was not separately analyzed in the original Global Burden of Disease for 1990.⁸ The leading causes of adult-onset hearing loss are presbycusis (age related hearing loss) followed by noise-induced hearing loss. This paper reviews global data on hearing loss among children and among adults, and estimates the global burden of adult-onset hearing loss. In addition, it provides estimates of the prevalence of hearing loss among children and adults at various levels of severity.⁹ The results of reduced auditory functioning can include: confusion, disorientation, and the inability to function without queues in emergency situations. Individuals who have difficulties hearing vibratory information may also have difficulty in exchanging information with others.

Potential Environmental Problems that can influence Auditory Functioning:

- Information is presented only audibly without visual information support
- Insufficient acoustics in built spaces and subsequent sound/vibration reverberations makes it difficult to absorb intelligible information, warnings or cautions during emergencies, or maintain or participate in communication
- Low lighting levels impact ability to lip read
- Emergency intercoms, hotline aids, and other emergency devices are not equipped with visual signals and interactive controls
- Intercom door-opening devices that do not have visual controls

3. VOICE AND SPEECH FUNCTIONS:

i. DIFFICULTY INTERPRETING INFORMATION

As the global community becomes smaller through technology, trade, and the removal of cultural barriers, information exchange and sharing becomes more vital. Worldwide, regardless of context, a large number of people experience difficulty in interpreting information, principally as a result of literacy levels and cognitive reasoning. Examples may include: children at various age levels, hearing and speech impairments, people without basic literacy skills, people

⁸ Epidemiology and Burden of Disease, WHO Geneva (GPE/EBD)

⁹ Mathers, Colin; Smith, Andrew; Concha, Marisol, Global Burden of Hearing Loss in the Year 2000, ©WHO Geneva 2003.

who speak a language different from the one being used in a particular context, cultural differences, the aged members of a culture, and persons with cognitive, psychiatric, or learning impairments.

The results of reduced communications functioning can include: confusion, disorientation, and the inability to function without queues in emergency situations. Individuals who have difficulties interpreting information may also have difficulty in exchanging information with others.

Potential Environmental Problems that can influence Interpreting Information and Functioning:

- Information displays that are not usable by all
- Ordering a meal, requesting a basic service, finding a restroom or architectural landmark
- Wayfinding and user signage
- Complicated controls – controls that are not intuitive to the user and require a high level of acuity and awareness to operate or require the ability to speak, or speak the native language to use successfully
- (PA) Public Address systems and auxiliary services not available for all users
- Emergency announcements or temporary messages that cannot be understood by all users (which can cause anxiety and fear resulting in psychological and physiological changes in perception and that can lead to alarm or panic levels)
- Lack of familiar or iconographic language for street signs, landmarks, directions, etc.

4. CARDIOVASCULAR AND RESPIRATORY FUNCTIONS:

i. RESPIRATORY / CARDIOVASCULAR:

Asthma is a controllable but not curable disease. The World Health Organization (WHO) says 100 to 150 million people around the world are asthmatic and the number is growing by 50% every decade. It causes 180,000 deaths a year.¹⁰ Asthma is a chronic, inflammatory lung disease characterized by recurrent breathing problems. People with the disease suffer "attacks", or acute episodes, when the air passages in their lungs narrow and breathing becomes difficult.

¹⁰ BBC News UK Edition (web), Asthma, January 8, 2004, http://news.bbc.co.uk/1/hi/health/medical_notes/233033.stm

Potential Environmental Problems that can influence Cardiovascular and Respiratory Functioning:

- Poorly maintained HVAC systems resulting in unhealthy Indoor Air Quality conditions and SBS (Sick Building Syndrome)
- Combined off-gassing of interior finish materials, products, and equipment (for example, carpets, wall-coverings, furniture, and other building materials).
- Allergens from natural and man-made products (substances to which some people are allergic) such as pollens, foods, dust, mold, feathers, or animal dander (small scales from animal hair or feathers);
- Respiratory infections such as colds, flu, sore throats, and bronchitis;
- Weather such as very cold air, windy weather, or sudden changes in weather;
- Too much exertion such as running upstairs too fast or carrying heavy loads;
- Emotional stress such as excessive fear, anxiety or excitement;
- Irritants in the air such as dirt, cigarette smoke, gases, and odors;

ii. STAMINA / CARDIOVASCULAR:

Stamina and cardiovascular functioning can be limited for persons unable to walk long distances, climb stairs without extreme difficulties due to mobility impairments or cardiovascular disease and limitations, people with intermittent fatigue and chronic fatigue, shortness of breath; hyposthenia; chronic obesity; and people with a range of cardiovascular disease or limitations.

Potential Environmental Problems that can influence Cardiovascular and Stamina Functioning:

- Substantial walking distances without resting places; stairs; lack of handrails, grab bars, and other supports;
- Excessively high or excessively low temperature variables depending on climate and context.
- Poor respiratory functioning.
- Emotional stresses such as excessive fear, anxiety or excitement that can result in lowered physical stamina.
- Disorientation at a particular place due to excessive fear, anxiety or excitement.

5. MOBILITY

i. DIMENSIONAL EXTREMES:

Dimensional extremes can significantly impact performance and functioning in the physical environment. The extreme short to the extreme tall person will perform and function differently in any given context; chronically obese people (sometimes with accompanying shortness of breath) have dimensional needs that will allow them to greater perform and function in different contexts. *Children → adults → elders.*

Potential Environmental Problems that can influence Functioning within Dimensional Extremes:

- Substantial walking distances without resting places; stairs; lack of handrails, grab bars, and other supports at usable heights and locations;
- Excessively high or excessively low temperature variables depending on climate and context.
- Poor respiratory functioning.
- Entering and exiting spaces and places, for example, doors, opening heights, etc.
- Location, size or scale of information displays, operating mechanisms, openings, and other "standard fixtures" such as telephones, drinking fountains, urinals, bank windows, cafeterias, chairs, bus seats, etc.
- Participation in public events in theaters, stadium type seating, balconies, lines of sight, etc.

ii. LIMITED USE OF UPPER LIMBS AND EXTREMITIES:

Difficulty Lifting and Reaching, and Inability to Use Arms and Shoulders (Upper Extremity Impairment) can impact performance and functioning in the built environment. As we look towards 2010, the frequency in developed countries by persons who experience one or another type of Repetitive Stress Injuries (RSI) or who are diagnosed Repetitive Motion Syndrome (RMS) is growing due to workplace repetitive tasks related to using computers and other types of equipment. Such injuries are also known as *Cumulative Trauma Disorders (CTDs)*, *Work-Related Upper Limb Disorders (WRULDs)*, and *Occupational Overuse Injuries*.¹¹ There are additional categories of people who have limitations of upper extremity usage, they include but are not limited to: people who have limited use of their arms and

¹¹ [RSI-UK: UK-specific information on Repetitive Strain Injury, http://www.ability.org.uk/Repetitive_Strain_Injuries.html](http://www.ability.org.uk/Repetitive_Strain_Injuries.html), 2005

shoulders; persons who have paralysis or suffered a stroke; people who are ambulatory or use a wheelchair; people with loss of mobility as in paraplegia or quadriplegia; people whose use of upper extremities or reach is limited by some other factor such as using crutches, loss of balance, shortness, or being in a wheelchair; people who may have frequent spasms, the person whose arms are full of groceries, books and bags, or a small child. Census 2000 counted 49.7 million people with some type of long lasting condition or disability. They represented 19.3 percent of the 257.2 million people who were aged 5 and older in the civilian non-institutionalized population — or nearly one person in five. Within this population, Census 2000 found: 21.2 million (8.2 percent) with a condition limiting basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying.¹²

Potential Environmental Problems that can influence Functioning with Limited Use of Upper Extremities:

- Hardware, controls, and operating mechanisms that require the use of upper limbs (water fountains, telephones, doors, elevators, etc.). Location and height of these items may also limit their useability.
- Excessively high or excessively low temperature variables depending on climate and context.
- Entering and exiting spaces and places, for example, doors, door opening forces, etc.
- Communication through computer use, writing, etc.
- Cultural exchanges, for example, shaking hands with another as a gesture of respect.

Difficulty Handling or Dexterousness: People who cannot grasp, pinch, twist, or lack adequate motor skills with their upper extremities.

iii. LIMITED AGILITY, BENDING, COORDINATION, AND ABILITY FOR HEAD MOVEMENT:

Individuals with reduced reaction time and prevalence of fainting, dizziness, or poor balance may not function to their potential. Elderly people who may move slowly, deliberately and unsteadily may not function to their potential. People with stability disorders who may need supports and rest areas may not function to their potential. These problems

¹² US Census: Disability Status 2000, US Census Bureau Information Brief March 2003. The estimates are based on responses from a sample of the population conducted by the US Census Bureau 2000. As with all surveys, estimates may vary from the actual values because of sampling variation or other factors. All statements made in this report have undergone statistical testing and are significant at the 90-percent confidence level, unless otherwise noted.

also accompany other disabilities such as in coordination, mobility limitations and para-, quadri- and hemiplegia (strokes).

Potential Environmental Problems:

- Substantial walking distances without resting places; stairs; lack of handrails, grab bars, and other supports
- Heavy weight doors with door opening forces > 5lbs.
- Revolving doors, elevator doors which close rapidly, and automatic doors
- Escalators
- Crosswalk signals set for 70th percentile or 240 ft./min. or faster (While most people move 300 ft./min, many elderly individuals and small children move 150 - 180 ft./min.).
- Stairs and inclined slopes of surfaces.
- Remote parking spaces or lengthy routes of travel.
- Exterior and interior surface materials that are smooth not textures, polished not non-slip, textured but irregular or in disrepair
- Excessively high or excessively low temperature variables depending on climate and context.
- Entering and exiting spaces and places, for example, doors, door opening forces, etc.

iv. **LIMITED USE OF LOWER EXTREMITIES:**

Census 2000 counted 49.7 million people with some type of long lasting condition or disability. They represented 19.3 percent of the 257.2 million people who were aged 5 and older in the civilian non-institutionalized population — or nearly one person in five. Within this population, Census 2000 found: 21.2 million (8.2 percent) with a condition limiting basic physical activities, such as walking, climbing stairs, reaching, lifting, or carrying.¹³ Over 1.6 million Americans use wheelchairs, and an unknown but growing number use scooters, canes are the most common mobility aid. Statistics from the WHO were not available.

Difficulty In Using Lower Extremities: People who walk with difficulty due to disability, stroke, age, and who may use mobility aids (canes, walkers, crutches); people who have prosthetics; people who shuffle, limp, drag feet; people who have difficulty sitting, bending, kneeling.

¹³ US Census: Disability Status 2000, US Census Bureau Information Brief March 2003. The estimates are based on responses from a sample of the population conducted by the US Census Bureau 2000. As with all surveys, estimates may vary from the actual values because of sampling variation or other factors. All statements made in this report have undergone statistical testing and are significant at the 90-percent confidence level, unless otherwise noted.

Potential Environmental Problems that can influence Functioning with Limited Use of Lower Extremities:

- Ground surfaces and changes in surface elevation including curbs and walkways.
- Stairs and inclined slopes of surfaces.
- Remote parking spaces or lengthy routes of travel.
- Exterior and interior surface materials that are smooth not textures, polished not non-slip, textured but irregular or in disrepair
- Toilet and bathing facilities
- Seating in theaters, stadiums be they furnished or natural, for example, amphitheaters.
- Location of controls and hardware
- Lack of handrails
- Excessively high or excessively low temperature variables depending on climate and context.
- Entering and exiting spaces and places, for example, doors, door opening forces, etc.

Inability to Use Legs and Feet: People who do not walk due to disability include, but are not limited to the following: wheelchair users; people with limitations of upper extremities and trunk coordination, limitations of stamina, sensory loss, etc. Functioning and performance may also be impacted due to physiological dysfunction such as sitting for long periods of time (our bodies are designed to operate perpendicularly); excessive hydration or dehydration (keeping kidneys flushed), overactive bladder problems, sitting sores, and burns.

Potential Environmental Problems:

- Remote parking spaces or lengthy routes of travel
- Limited space for maneuvering and minimal clearances, such as aisles, doorways, etc.
- Stairs and inclined slopes of surfaces.
- Exterior and interior surface materials that are smooth not textures, polished not non-slip, textured but irregular or in disrepair
- Toilet and bathing facilities
- Seating in theaters, stadiums be they furnished or natural, for example, amphitheaters.
- Location of controls and hardware
- Lack of handrails
- Excessively high or excessively low temperature variables depending on climate and context.
- Entering and exiting spaces and places, for example, doors, door opening forces, etc.

6. INTERPERSONAL INTERACTIONS AND RELATIONSHIPS:

This Functional Category focuses on interpersonal and environmental relationships with other persons that an individual might encounter while experiencing a building, place, or space.

- i. Traveling with a Child – when traveling with children be they toddlers or children under 12 years of age, attention may be focused on the child instead of the environment. Young children may present additional functional challenges including carriages, need for changing rooms, verbal irritability that results in crying, screaming, or yelling, and child safety.
- ii. Traveling with another Person – when traveling with another person, the individual experience of a building, place or space, may be compromised due to interaction with the other person (i.e. talking while moving through a building or space, focus on the other person’s enjoyment of the experience).
- iii. Traveling with a Group of People – when traveling with a group of people the experience of a place may be more about the group interaction dynamic than whether the space is performing to the needs of all members of the group.
- iv. Traveling with a Group of People w/ children - when traveling with a group of people the experience of a place may be more about the group interaction dynamic than whether the space is performing to the needs of all members of the group. When the dynamic of children are combined in this category the additional challenges of carriages, need for changing rooms, verbal irritability that results in crying, screaming, or yelling may challenge the built environment beyond reasonable performance measures.
- v. Traveling with Elders – traveling with elders can offer many of the challenges associated with other Functional Categories. The added functional dynamic is the person’s focus on the elder as they navigate through and experience the environment and their safety in doing so.

7. LEARNING AND APPLYING KNOWLEDGE:

Learning and applying knowledge of your own experience of a building, place, or space, can be a rewarding experience within the diverse age and ability spectrum. Human nature allows humans the ability to absorb experiential information and to process that information as a means to comprehend and experience the human’s relationship to the environment and surrounding to their full potential. In many of the Functional Categories, impairments have been identified that can challenge the diverse age and ability spectrum of persons. The importance of this measure of performance is to draw attention to the complex nature of human experience and to stress the varying levels at which

Person-Centered Assessment Tool (PCAT) 1.1 – Performance Functioning Categories of Person-Centered Assessment

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people learn and process experiential information dependent on *Functioning* and *Disability*.¹⁴ The following are examples of ways in which an individual may learn and apply that learned knowledge in the experience of a building, place, or space.

- i. Acquiring your way around a building, neighborhood, or city
- ii. Acquiring a working knowledge of wayfinding systems and patterns
- iii. Acquiring an understanding of mass transit systems in relationship to landmarks and known places
- iv. Acquiring understanding of place through climate and terrain
- v. Acquiring understanding of place through social institutions, attitudes towards all persons, and laws
- vi. Acquiring understanding of phenomenological experience of place
- vii. Acquiring new ways to communicate to all persons (be they young, old, or disabled)

¹⁴ IBID

PERSON-CENTERED ASSESSMENT TOOL PCAT 1.1

BUILDING / SPACE - BIOGRAPHICAL INFORMATION

Name and address of Facility / Space :	
Year Built / year renovated (describe if assemblage of several components or additions-how the facility has evolved):	
Building Square Footage:	
Familiarity with this space (are you familiar with this space? Have you been here before?):	
Distinguishing Factors of the building / place (for example, forms you recognize, forms that have meaning, visual and sensual textures, odors, sounds, change in temperature):	
Time of Day present at the site (list time/ date):	

REVIEWER / USER – BIOGRAPHICAL INFORMATION

Name :

Occupation :

Organization:

Design Training

(For example: have you had professional design training? worked with design professions? Watched construction or design related programming? or are your interests in design self-taught?):

Functioning (Please share any physical, physiological, psychological, or spiritual characteristics about yourself that may consciously or unconsciously influence your analysis of this facility or spaces?):

The **Person-Centered Assessment Tool (PCAT) 1.1** consists of 32 statements distributed into 5 categories: Understanding of Place (7); Point of Reference (6); Communication Performance (5); Shared Spaces and Communication with Others (5); and Quality of Experience (9). These statements are intended to measure the level to which the building or space performs and functions to the expectations and diverse abilities of all users. This assessment tool has been designed as an educational tool to be used by the student of design, experienced professional, and any and all users that may benefit from exploring this area of study. Below each statement please indicate the performance level, 1 being Low with 5 being High performance. While performance levels are a good indicator, your comments in support or not in support are equally important to use the assessment tool to its potential. Under each statement there are also listed seven performance categories (refer to complete assessment tool package) that define varying levels of physical, psychological, and spiritual performance and functioning criterion. The assessment tool challenges you to become familiar with each category through personal or learned experience and use them as a guiding point as you assess each facility.

UNDERSTANDING PLACE

1 This building or place is distinct, displays presence, and is understandable to the user through familiar forms or landmarks. ^{1 2 3}

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

¹ Finkel, Gail, Searching for Universal Wayfinding Cues, Proceedings : Designing for the 21st Century, 1998, Hofstra University.

² Farbstein, Jay, People and Places, 1978, Prentice Hall. Farbstein in chapter 17 Boundaries and Connections discusses definition of space as informing the user. He states “The marking of inside and outside is one of the basic physical and symbolic aspects of the built environment.” In chapter 18 Mental Maps he presents the parallel between navigation and wayfinding and “metal maps” that each user employs in their understanding of place.

³ Greenbie, Barrie B., Spaces : Dimensions of the Human Landscape, 1981, Yale University Press. In Chapter 2 Street Space: To Go Through or to Go To, Greenbie discusses the dichotomy and transitions that have emerged within the evolving urban landscape, citing that residential scale streets “provides the transition between the local and larger worlds. “ while,”contemporary streets are ..more limited to the Cartesian and utilitarian considerations than buildings and lots.” He continues by citing that contemporary roads and means of transition in the urban fabric “are designed by engineers mostly to accommodate cars, utilities, snowplows, fire engines, and storm water.” Greenbie’s assessment of the urban fabric should inform the user of this assessment tool to take into account the diverse contextual factors that influence the initial entry into the building being examined, thereby challenging the assessor to look holistically at the base experience of access that encompasses transition, ritual, and ceremony.

2

The user can easily identify the building or place entrance(s) and function ⁴or use⁵ of this place. ⁶ ⁷

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁴ Rengel, Roberto J., *Shaping Interior Space*, 2003, p. 155. Rengel defines a “contextual fit” of program and meaning as being “concerned with establishing meaningful connections and responses between the project and its context. It can be judged by the project’s level of response to its internal and external contexts” as it relates to the harmony of creating ‘place’.

⁵ Krier, Rob, *Urban Space*, 1988, Rizzoli-New York. The importance of Krier’s examination of the urban fabric and morphology studies reinforces the archetypal and contextual experience of the built environment.

⁶ Walter, Eugene Victor, *Placeways: a theory of the Human Environment*, 1988, p.2; Walter explains that “The real “sense” of a place” is “twofold. On the one hand, people feel it;” in a physical and spiritual way, and “on the other hand, they grasp its meaning.”

⁷ Kitchin, Rob, *Architects Disable : a Challenge to Transform*, 2003, www.irish-architecture.com/aai/journal/ten/kitchin6.html . Kitchin explains that architects must “rethink the ethos of architecture making Universal design a core, underlying, commonsensical aspect of architecture .. engaging issues of social justice and thinking progressively about the social and economic consequences of architecture.”

3 The user can enter⁸ the space independently⁹ with little or no assistance.¹⁰

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁸Ching, Francis D.K., Architecture : Form, Space, & Order, Second edition, 1996, John Wiley & Sons. Ching highlights the spiritual experience of form as an identifier of entering spaces and places.

⁹ Greenbie, Barrie B., Spaces : Dimensions of the Human Landscape, 1981, Yale University Press. Greenbie states that, “Although fences of some sort remain important to neighborhoods, it is only as urban life is able to flow beyond city walls that human culture is able to expand.” His metaphor of the fence can be paralled to the experiences of each user of a space and the need for each user to have the same opportunities to experience a space or place. He continues by stating that, “For its most important functions, the real city” or we would argue town, or developing village or community, “has something which Robert Frost says “does not love a wall/That wants it down.”

¹⁰ Alexander, Christopher, The Phenomenon of Life, 2001, The Center for Environmental Structure, Berkeley, CA. Alexander discusses “human freedom” in the context of engaging the built and spiritual environment. P.374 he states, “Let us now come to the topic of human freedom. It will be accepted, I think, that the best environment would be one in which each person can become as alive as possible—that is as vibrant intellectually, physically, morally—and in which people can reach, as far as possible, their own potential as human beings. One may assume, too, that each person naturally does everything possible, to be alive. The tendency to enjoy life, seek life, live life to the fullest, is a natural human force. It is the thing a person most naturally aspires to, and seeks.”

4 The user can safely navigate¹¹ to the building or place from public transportation, vehicles and parking areas, or bicycle by way of pedestrian paths of travel¹² in daytime or nighttime conditions and at different times of the year.¹³

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

¹¹ Ziddovici, John, *disAbility*, 2003, www.irish-architecture.com/aai/journal/ten/disability2.html , Ziddovici highlights the integration of Braille as a “frieze of abstract text” that “allows reading [and therefore navigation and wayfinding] to be ‘seen’ as a “spatial activity” which had been the case in early spatial languages before visual text appeared in the form of the book, thus making Braille a language “as and integral part of architecture.”

¹² Shepley, Mardelle, *Wayfinding in Architectural Settings*, Neuroscience and Health care Facilities Workshop-The National Academy of Sciences, Woods Hole, MA 2002, p.6. In reporting for the group discussing Wayfinding, Shepley states that, “Spatial orientation is a fundamental skill” that “plays a more significant role in memory than color or symbols.” She further presents that “Many cognitive psychologists believe that general information is stored in memory in parallel to the way spatial information is processed.”

¹³ Farbstein, Jay, *People and Places*, 1978, Prentice Hall. Farbstein in chapter 17 Boundaries and Connections discusses definition of space as informing the user. He states “The marking of inside and outside is one of the basic physical and symbolic aspects of the built environment.” In chapter 18 Mental Maps he presents the parallel between navigation and wayfinding and “metal maps” that each user employs in their understanding of place.

5 The user finds that physical light, natural daylight or artificial, allows understanding of the building or space and supports efficient functioning when first arriving upon the building or space.^{14 15}

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

¹⁴ Shepley, Mardelle, Wayfinding in Architectural Settings, Neuroscience and Health Care Facilities Workshop-The National Academy of Sciences, Woods Hole, MA 2002, p.6. In reporting for the group discussing Wayfinding, Shepley states that, “Spatial orientation is a fundamental skill” that “plays a more significant role in memory than color or symbols.” She further presents that “Many cognitive psychologists believe that general information is stored in memory in parallel to the way spatial information is processed.”

¹⁵ Farbstain, Jay, People and Places, 1978, Prentice Hall. Farbstain in chapter 17 Boundaries and Connections discusses definition of space as informing the user. He states “The marking of inside and outside is one of the basic physical and symbolic aspects of the built environment.” In chapter 18 Mental Maps he presents the parallel between navigation and wayfinding and “metal maps” that each user employs in their understanding of place.

6 When first approaching the building or space the user feels comfortable, welcomed, and at home in the new environment.

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

7 When first approaching the building or space the user feels a physical, physiological, psychological, or nostalgic connection in the new environment. (please describe in the comments section).

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

POINT OF REFERENCE

1 The user finds the organization¹⁶ and arrangement of horizontal and vertical path options (stairs, elevators, escalators, ramps, lifts, corridors and mezzanines) understandable¹⁷ upon entering the building or space.¹⁸

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

¹⁶ Rengel, Roberto J., *Shaping Interior Space*, 2003, p.155. Rengel discusses “order” in buildings and defines “functional fit” of elements as being “achieved when the project addresses the essence of the overall design problem and its sub-problems at the functional level. It can be judged based on the appropriateness of fit achieved between the [building] program and the resulting project [spatial] organization.”

¹⁷ Alexander, Christopher, *The Phenomenon of Life*, 2001, The Center for Environmental Structure, Berkeley, CA. p.372, Alexander states, “I shall argue that the geometry of the physical world—its space—has the most profound impact possible on human beings” suggesting that archetypal experience will impact across the spectrum of diverse abilities and that identifiable geometry or form informs the user of space in an intuitive way. He further comments that form “has impact on the most important of all human qualities, our inner freedom [suggesting the ability to select direction based on intuitive means] or the sense of life each person has. It touches on internal freedom, freedom of the spirit.” Alexander’s reference to “freedom of spirit” reinforces an individual’s feeling of security or safety in a space, if they do not feel adversely affected by the same space.

¹⁸ Thiis-Evensen, Thomas, *Archetypes in Architecture*, 1989, p.15. Thiis-Evensen describes the first impressions of a building as a “purely qualitative evaluation” of the space. He states that, “Buildings and rooms are spontaneously characterized as ‘intimate,’ ‘monumental,’ ‘dull,’ Etc.” Further he notes that “different buildings elicit different responses” for the user.

2 Are there any landmarks, architectural features, and/or signage and wayfinding¹⁹ within the building or space that enhance the user’s point of reference or that assist in navigation and support their experience²⁰ of the space?²¹

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :		
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

¹⁹ Lynch, Kevin, The Image of the City, 1960, MIT Press. Lynch defines Landmarks as, “the point references considered to be external to the observer, are simple physical elements which may vary widely in scale.” Lynch continues by describing landmarks and one’s relationship to them as “singular”. He reinforces that “Landmarks become more easily identifiable, more likely to be chosen as significant, if they have clear form; if they contrast with their background; and if there is some prominence of spatial location.”

²⁰ Wurman, Richard Saul, What Will Be Has Always Been: The Words of Louis I. Kahn, 1986, Access Press / Rizzoli. In the words of Kahn, “We are all born with a sense of what to do. Within our singular limits we know instinctively that, given a sufficient opportunity to put this instinct into practice, we know what to do almost instantaneously, if what we do is true to our singularity. But how to do it we are not born with. We must learn to speak, we must learn to use tools.”

²¹ Walter, Eugene Victor, Placeways:a theory of the Human Environment, 1988, p.117. Walter explains, “We call locations of experience “places.” Experience means perceiving, doing, thinking, and feeling. Every event happens some *where*, but we don’t often locate an experience by its latitude and longitude.

3 The building or spaces provide queues literal or perceived²² to the interior spatial orientation (through natural light, wayfinding, glazed surfaces – operable or fixed) allowing a user to connect to the outside.²³

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

²² Wurman, Richard Saul, What Will Be Has Always Been: The Words of Louis I. Kahn, 1986, Access Press / Rizzoli. In the words of Kahn, “We are all born with a sense of what to do. Within our singular limits we know instinctively that, given a sufficient opportunity to put this instinct into practice, we know what to do almost instantaneously, if what we do is true to our singularity. But how to do it we are not born with. We must learn to speak, we must learn to use tools.”

²³ Hirtle, Stephen, Formal Models of Common-Sense Geographic Worlds, position paper, University of Pittsburgh, Hirtle in this position paper builds on prior research on cognitive maps, representations and processes, and memory, reinforcing the importance of perceptible information in the design of spaces, and components of everyday life.

4 Are there any characteristics of the building or space²⁴ (colors, materials / textures, wayfinding, formal features, Etc.)²⁵ that you feel are helpful or unhelpful to a user for navigational functioning?²⁶

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

²⁴ Walsh, C.J., Sustainable Human and Social Development: an examination of contextual factors, Universal Design Handbook ,2002, p. 33.9. Walsh identifies the emerging profile of what “sustainable building of the future may entail” in so far as the spaces and buildings persons use are “Spatially complex, with some ambiguity, and yet understandable (e.g. easy for building users to find their orientation and to connect with the exterior)” of buildings.

²⁵ DeChiara, Panero, Zelnik, Time-Saver Standards for Interior Design and Space Planning, 1991, McGraw Hill. Reference p.931, Signage and Graphics.

²⁶ Lynch, Kevin, The Image of the City, 1960, MIT Press. Refer to the appendixes where Lynch presents “Some References to Orientation”, pp. 123-139, for example, “Reference Systems”, “The Role of Form”, and the “Disadvantages of Imageability”.

5 Paths of travel within the building or space gives the user a feeling of safety and security²⁷ and allows the user to function to their potential physically, psychologically²⁸ and spiritually.

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

²⁷ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.7 Safety at Work and at Home. Special note should be made of the “four Safety Classifications” that HAD defines in the referenced text: “Inherently safe: Human error will not degrade, damage, be a hazard, or cause injury; Marginally safe: Human error could result in injury; Dangerous: Human error is likely to cause injury or death; Catastrophic: Human error can cause severe degradation—loss of system, injuries, death, or multiple deaths.” p.59

²⁸ Hirtle, Stephen, Formal Models of Common-Sense Geographic Worlds, position paper, University of Pittsburgh, Hirtle in this position paper builds on prior research on cognitive maps, representations and processes, and memory, reinforcing the importance of perceptible information in the design of spaces, and components of everyday life.

6 Paths through the building or space are clearly identifiable^{29 30} and easily understood as a user. In the building or space the user feels their time is efficient and enables them to function to their potential physically, psychologically^{31 32} and spiritually.

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

²⁹ Ching, Francis D.K., Architecture : Form, Space, & Order, Second edition, 1996, John Wiley & Sons. Ching highlights the spiritual experience of form as an identifier of entering spaces and places.

³⁰ Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics; and other environmental factors which take into account sustainable practices.

³¹ Hirtle, Stephen, Formal Models of Common-Sense Geographic Worlds, position paper, University of Pittsburgh, Hirtle in this position paper builds on prior research on cognitive maps, representations and processes, and memory, reinforcing the importance of perceptible information in the design of spaces, and components of everyday life.

³² Karlen, Mark, Space Planning Basics, 1993, John Wiley & Sons. In Chapter Five, Karlen identifies key components critical in understanding the complex components that are needed to experience a path of travel through building spaces including, spatial quality, lighting design, acoustical planning, and multi-uses of spaces. In Chapter One, Karlen discusses the fundamental components that make up a strong “planning methodology” for space.

COMMUNICATION PERFORMANCE

1 The user finds that information transmitted visually³³ (Wayfinding signage, pictogram languages, display screens, bulletins, brochures, Etc.) are apparent and understandable.^{34 35} Visual information that supports their performance and functioning in the building or space is presented in redundant auditory or tactile ways.

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :		
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

³³ DeChiara, Panero, Zelnik, *Time-Saver Standards for Interior Design and Space Planning*, 1991, McGraw Hill. Reference p.949, Audio-Visual Systems.

³⁴ Vanderheiden, Ph.D, Gregg, *Fundamentals and Priorities for Design of Information and telecommunication Technologies*, 2001, McGraw-Hill. Refer to p.65.4, Table 65.1 Parallel Between Disability Needs and Situations Everyone Experiences.

³⁵ Whitehouse, Roger, *Accessible Text Guidelines*, 2001, The Society for Environmental Graphic Design and prepared for the U.S. Access Board.

2 The user finds that information transmitted audibly^{36 37} (PA system, telephones, info kiosks, security / fire-alarm, microphone, spoken word, Etc.) is free of static and feedback and understandable.³⁸ Auditory information³⁹ that supports their performance and functioning is presented in redundant visual ways (LED, emergency lights).

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :	
Cognitive Functions	1	2	3	4	5
Sensory Functions (communication)	1	2	3	4	5
Voice and Speech Functions	1	2	3	4	5
Mobility Functions	1	2	3	4	5
Cardiovascular, and Respiratory Functions	1	2	3	4	5
Interpersonal Interactions and Relationships	1	2	3	4	5
Learning and Applying Knowledge	1	2	3	4	5

³⁶ Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics; and other environmental factors which take into account sustainable practices.

³⁷ DeChiara, Panero, Zelnik, Time-Saver Standards for Interior Design and Space Planning, 1991, McGraw Hill. Reference p.949, Audio-Visual Systems, p.1121 Human factors-Acoustics.

³⁸ Brill, Michael, Disproving Widespread Myths about Workplace Design, 2001, p.30. Brill identifies the conflict that exists with “noise” in the interior environment, citing the “Noise is both necessary for the business (because it is integral to verbal transactions, informal learning and collaboration) and also distracting to neighbors trying to concentrate.” Though he discusses this issue in the context of an open-office environment, the same issue can be identified with any type of public place or interior environment. Brill also notes that “noise” can be a “productivity and satisfaction *enhancer* and, simultaneously, a *reducer* for others.” The intent of this question is to challenge the person performing the assessment to consider where the line falls on the balance between spaces which can adversely affect the experience of the user and which spaces enhance the human experience of the user.

³⁹ The Ecophon Group, Sound and the Modern Office, 2000, Ecophon AB, United States. Ecophon, an International Company manufacturing acoustical building products has assembled this informative text to assist designers and the end user an understanding and working importance of acoustics in interior environments. The text provides a “Worth Knowing” section that includes a clear glossary of acoustical terms.

3 The acoustical^{40 41} methods employed in the building or space are detectable to the user and are incorporated in an enjoyable manner (through innovative materials, materials with known or interesting shapes, textures, formal grids and patterning, etc).

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁴⁰ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.11 The Environment, p.79,80,81.

⁴¹ DeChiara, Panero, Zelnik, Time-Saver Standards for Interior Design and Space Planning, 1991, McGraw Hill. Reference p.1121 Human Factors-Acoustics.

4 The acoustical^{42 43} methods employed in the building or space allow users to carry on a one-on-one conversations,⁴⁴ conversations of small groups of people, as well as, attend and engage in public events, programs, musical events, receptions^{45 46}

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁴² Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.11 The Environment, p.79,80,81.

⁴³ DeChiara, Panero, Zelnik, Time-Saver Standards for Interior Design and Space Planning, 1991, McGraw Hill. Reference p.1121 Human Factors-Acoustics.

⁴⁴ Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics; and other environmental factors which take into account sustainable practices.

⁴⁵ The Ecophon Group, Sound and the Modern Office, 2000, Ecophon AB, United States. Ecophon, an International Company manufacturing acoustical building products has assembled this informative text to assist designers and the end user an understanding and working importance of acoustics in interior environments. The text provides a “Worth Knowing” section that includes a clear glossary of acoustical terms. Refer to Chapter I. People and Sound for a detailed understanding of how the ‘sound’ process and interpretation of information works.

⁴⁶ Lochner, Wendy, sponsoring editor, Architectural Acoustics Design Guide, 2000, The McGraw-Hill Companies. A detailed guide to acoustical design in the interior architectural environment.

5 Are there any methods of communications^{47 48} (visual, verbal, audible, tactile, formal, pictograms, or others) that support a users performance in the building or space and that would be considered particularly beneficial in supporting the use of the space?^{49 50 51}

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁴⁷ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.9 Displays, p.72

⁴⁸ Whitehouse, Roger, Accessible Text Guidelines, 2001, The Society for Environmental Graphic Design and prepared for the U.S. Access Board.

⁴⁹ Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics; and other environmental factors which take into account sustainable practices.

⁵⁰ DeChiara, Panero, Zelnik, Time-Saver Standards for Interior Design and Space Planning, 1991, McGraw Hill. Reference p.949, Audio-Visual Systems, p.1121 Human factors-Acoustics.

⁵¹ Lochner, Wendy, sponsoring editor, Architectural Acoustics Design Guide, 2000, The McGraw-Hill Companies. A detailed guide to acoustical design in the interior architectural environment. Refer to the case studies provided in each chapter for additional application and examination of acoustical effectiveness.

SHARED SPACES AND COMMUNICATION WITH OTHERS

1 The user can understand and identify the use of the building or space, and can understand what types of services are provided here.

Comments:	TYPES OF SERVICES / PROGRAMS 1. 2. 3. 4. 5. 6. 7.
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2 Programs and activities provided in the building or space satisfy the average user's expectations, specific users expectations, or are focused on only a small user population. As a result the performance and functioning of the user in the building or space is supported or enhanced.

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :		
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

3 A user is able to make use of the entire range of the goods, services and programs⁵² within this building or space autonomously or together with others, with an expectation of timely and beneficial support to their functioning and performance, (users can reach transaction counters, communicate effectively with others, participate in programs and services, etc.).

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁵² U.S. Department of Justice, 28 CFR Ch.1(7-1-94 Edition), Pt. 36, Appendix B, Section 36.202 Activities. The intent of this section of the Americans with Disabilities Act is to remove program access barriers and allow programs, goods and services to be accessed by persons with diverse abilities thereby allowing equal participation (section 36.202(a)).

4 Support spaces at the building or facility, for example, restroom facilities (Men / Women grouped, unisex, or companion / family rooms), dining, kitchenette, or vending areas, interior / exterior seating areas, parking, and building security are sufficient in number and dispersed throughout the facility, feel safe to use individually or in groups, are clean, private and convenient to use.^{53 54}

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :	
Cognitive Functions	1	2	3	4	5
Sensory Functions (communication)	1	2	3	4	5
Voice and Speech Functions	1	2	3	4	5
Mobility Functions	1	2	3	4	5
Cardiovascular, and Respiratory Functions	1	2	3	4	5
Interpersonal Interactions and Relationships	1	2	3	4	5
Learning and Applying Knowledge	1	2	3	4	5

⁵³ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.7 Safety at Work and at Home. Special note should be made of the “four Safety Classifications” that HAD defines in the referenced text: “Inherently safe: Human error will not degrade, damage, be a hazard, or cause injury; Marginally safe: Human error could result in injury; Dangerous: Human error is likely to cause injury or death; Catastrophic: Human error can cause severe degradation—loss of system, injuries, death, or multiple deaths.” p.59

⁵⁴ Karlen, Mark, Space Planning Basics, 1993, John Wiley & Sons. Reference Chapter 3 Small and Dimensionally Demanding Spaces.

5 Support spaces at the building or facility, for example, restroom facilities (Men / Women grouped, unisex, or companion / family rooms), dining, kitchenette, or vending areas, interior / exterior seating areas, parking, and building security are identified properly through wayfinding^{55 56} and maintained in a satisfactory condition⁵⁷ to support a users performance and functioning within the building or space.

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :		
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁵⁵ Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics; and other environmental factors which take into account sustainable practices. P. 316-325 Rengel presents a case study of the seamless use of color and signage in the experience of space.

⁵⁶ Commentary : Can people of all abilities understand signage or other graphics designating the “sex” of the bathroom facility user? Does the facility use pictures, pictograms, or other identifying signage that may confuse the user , i.e. Drake’s and Ducks, or photos that distinguish the sex only by what type of hat the person in the photograph is wearing.

⁵⁷ Karlen, Mark, Space Planning Basics, 1993, John Wiley & Sons. Reference Chapter 3 Small and Dimensionally Demanding Spaces.

QUALITY OF EXPERIENCE

1 The materials, textures, and finishes⁵⁸ employed in the building or space are pleasing⁵⁹ and can be seen, touched, and used⁶⁰ in a way to support a user's performance and functioning.

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁵⁸ Rodemann, Patricia A., Patterns in Interior Environments : Perception, Psychology, and Practice, 1999, John Wiley & Sons. Reference Ch. 4 Perception Psychology: How are Eyes and Brain Process Pattern.

⁵⁹ Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics, finishes, color, and other environmental factors which take into account sustainable practices. P. 316-325 Rengel presents a case study of the seamless use of color and signage in the experience of space.

⁶⁰ U.S. Green Building Council, LEED : Green Building rating System for New Construction & Major Renovations, V. 2.1, 11/2002 (revised 3/14/03), www.usgbc.org . Reference the "Materials & Resources" , and "Environmental Quality" sections for guidance in assessing a building's effectiveness for incorporating sustainable and renewable materials and methods into the design and construction processes.

2 The audible level of building and space activity by individuals or groups engaged in services, uses, and programs supports the intended program use in the facility^{61 62} and supports the user’s experience physically, physiologically, psychologically, and spiritually.⁶³

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁶¹ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.11 The Environment. p.79.

⁶² Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics; and other environmental factors which take into account sustainable practices.

⁶³ The Ecophon Group, Sound and the Modern Office, 2000, Ecophon AB, United States. Ecophon, an International Company manufacturing acoustical building products has assembled this informative text to assist designers and the end user an understanding and working importance of acoustics in interior environments. The text provides a “Worth Knowing” section that includes a clear glossary of acoustical terms. Refer to Chapter I. People and Sound for a detailed understanding of how the ‘sound’ process and interpretation of information works.

3 The levels and designed use of natural and artificial lighting (through ambient, feature lighting, passive solar design, daylighting, etc), support the intended and designed building uses ⁶⁴ increasing a user’s ability to navigate through and participate in the space(s)⁶⁵, increasing a user’s performance and functioning, and enhancing the user’s experience physically, physiologically, psychologically, and spiritually.⁶⁶

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :		
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁶⁴ U.S. Green Building Council, LEED : Green Building rating System for New Construction & Major Renovations, V. 2.1, 11/2002 (revised 3/14/03), www.usgbc.org . Reference the “Environmental Quality” section, specifically the “daylight and Views” criteria which seeks to highlight the incorporation of daylight into the interior environment.

⁶⁵ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.11 The Environment. p.79.

⁶⁶ Rengel, Roberto J., Shaping Interior Space, 2003, In Chapter 11 Modifiers of Interior Space, Rengel presents the various components that form the cohesive interior experiential environment including: ambient elements, acoustics; and other environmental factors which take into account sustainable practices.

4 The indoor air quality ^{67 68} has temperature ranges that are comfortable, humidity controlled, have satisfactory air circulation, is free of chemical odors and strong perfumes (chemical sensitivity), ⁶⁹ is allergen free, making the interior environment comfortable for a user ^{70 71} and enhancing the user’s experience physically, physiologically, psychologically, and spiritually.

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :	
Cognitive Functions	1	2	3	4	5
Sensory Functions (communication)	1	2	3	4	5
Voice and Speech Functions	1	2	3	4	5
Mobility Functions	1	2	3	4	5
Cardiovascular, and Respiratory Functions	1	2	3	4	5
Interpersonal Interactions and Relationships	1	2	3	4	5
Learning and Applying Knowledge	1	2	3	4	5

⁶⁷ U.S. Environmental Protection Agency, *Indoor Air Facts No. 4 (revised) : Sick Building Syndrome (SBS) 2003*, “The term "sick building syndrome" (SBS) is used to describe situations in which building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no specific illness or cause can be identified. The complaints may be localized in a particular room or zone, or may be widespread throughout the building. In contrast, the term "building related illness" (BRI) is used when symptoms of diagnosable illness are identified and can be attributed directly to airborne building contaminants. A 1984 World Health Organization Committee report suggested that up to 30 percent of new and remodeled buildings worldwide may be the subject of excessive complaints related to indoor air quality (IAQ). Often this condition is temporary, but some buildings have long-term problems. Frequently, problems result when a building is operated or maintained in a manner that is inconsistent with its original design or prescribed operating procedures. Sometimes indoor air problems are a result of poor building design or occupant activities.”

⁶⁸ U.S. Green Building Council, *LEED : Green Building rating System for New Construction & Major Renovations, V. 2.1, 11/2002 (revised 3/14/03)*, www.usgbc.org . Reference the “Environmental Quality” section, specifically the indoor air quality and emissions of interior materials and finishes.

⁶⁹ Echikson, William, *Why the Air and Light Are So Much better in Paris*, 2000, www.businessweek.com . This article discusses the differing approaches to the issue of eliminating “sick buildings” in the design of new buildings, and highlights European efforts to eliminate such threats to the interior environment.

⁷⁰ Perez-Pena, Richard, *Study Finds Asthma in 25% of Children in Central Harlem*, The New York Times, April 19, 2003. Study found that 25.5% of children in Central Harlem have asthma, double the expected rate and the highest ever documented in a U.S. neighborhood. Study suggests that minority neighborhoods in U.S. inner cities and neighborhoods demonstrate alarming rates of respiratory ailments far exceeding national averages.

⁷¹ Smith, Stephen, *Asthma Worst in Bay State, Study Finds*, The Boston Globe, May 16, 2003. The health survey conducted by the Centers for Disease Control and Prevention, discovered that five of the seven states with the highest incidence of adult asthma were in New England.

5 The architectural scale of the building or space (proportions of elements, heights, delineation of surfaces, use of natural and artificial lighting techniques, Etc.) is comfortable⁷² and welcoming to me^{73 74 75} and enhances the user's experience physically, physiologically, psychologically, and spiritually.

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁷² Ching, Francis D.K., Architecture : Form, Space, & Order, Second edition, 1996, John Wiley & Sons. Ching highlights the spiritual experience of form as an identifier of entering spaces and places. Refer specifically to his examination of architectural elements and orders.

⁷³ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.1 – Anthropometry, Ch. 2 – The Elderly, Ch.3 – Differently Abled People.

⁷⁴ Walter, Eugene Victor, Placeways:a theory of the Human Environment, 1988, p.117. Walter explains that “I am suggesting that the quality of a place depends on a human context shaped by memories and expectations, by stories of real and imagined events-that is, by the historical experience located there.” Walter infers that ‘comfort’ in a space or place can be affected by the architectural composition of space, for example, proportions of elements, nostalgic recollection to architectural elements from memory and expectation.

⁷⁵ Giedion, Sigfried, Space, Time, and Architecture : the growth of a new tradition, 1963, Harvard University Press. The importance of Giedion’s writings from forty years ago is his identification with architecture and the making of spaces for people, not distinguished by ability, but to experience the built environment on the most basic, human and archetypal level. When discussing “Architecture as an Organism”, p.19, he writes, We are looking for the reflection in architecture of the progress our own period has made toward consciousness itself—of its special limitations and potentialities, needs, and aims. Architecture can give us an insight into this process just because it is so bound up with the life of a period as a whole.” Though he speaks of the context of “architecture”, this reference is merely a metaphor for the cross-disciplinary nature of developing a building, a neighborhood, a home, or a street. Giedion’s aspirations for the interdependency of the built environment and culture are particularly germane to the present day Global context.

6 The interior architectural elements of the building or space connect visually or experientially with the exterior architectural elements and enhances the user's experience physically, physiologically, psychologically, and spiritually.

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

7 The architectural elements of the building or space connect visually or experientially with places the user has been, experienced, or seen and connects in a nostalgic way enhances the user's experience physically, physiologically, psychologically, and spiritually. (if nostalgic references are adverse-please identify).

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :		
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

8 The user will find the building or space to be open and accessible by all users,⁷⁶ integrated into the building design or concept, promoting inclusive rather than segregated right to use⁷⁷, enhancing the user's experience physically, physiologically, psychologically, and spiritually.

PERFORMANCE CATEGORY	LOW		AVG		HIGH	Comments :
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁷⁶ Henry Dreyfuss Associates, The Measure of Man and Woman, revised edition, 2002, John Wiley & sons. Ref. Ch.1 – Anthropometry, Ch. 2 – The Elderly, Ch.3 – Differently Abled People.

⁷⁷ U.S. Department of Justice, 28 CFR Ch.1(7-1-94 Edition), The Americans with Disabilities Act of 1990 put in place Civil Rights legislation in the United states to protect the rights of all persons with a defined disability. The Civil Rights Act has been instrumental in assisting the movement to remove all physical barriers in buildings, transportation, employment, and telecommunications. Though intended to protect the rights of persons with defined disabilities, the ADA and the ADA Accessibility Guidelines have proven to remove physical barriers for all people.

9 The user feels comfortable and welcome in this building or place (on a conscious or unconscious level), considering the whole experiential feeling, the use and composition of architectural elements and delineation of spaces.^{78 79 80}

PERFORMANCE CATEGORY	LOW	AVG	HIGH	Comments :		
Cognitive Functions	1	2	3	4	5	
Sensory Functions (communication)	1	2	3	4	5	
Voice and Speech Functions	1	2	3	4	5	
Mobility Functions	1	2	3	4	5	
Cardiovascular, and Respiratory Functions	1	2	3	4	5	
Interpersonal Interactions and Relationships	1	2	3	4	5	
Learning and Applying Knowledge	1	2	3	4	5	

⁷⁸ Rengel, Roberto J., *Shaping Interior Space*, 2003, In Chapter 8 Enrichment, Rengel presents and discusses several components that are integrated into design for the betterment of human experience, for example, stimulation and environmental stability, and drawing from Ch. 2 he reinforces the overall experience of the building from approach to entry to movement through and within.

⁷⁹ Ching, Francis D.K., *Architecture : Form, Space, & Order*, Second edition, 1996, John Wiley & Sons. Ching highlights the spiritual experience of form as an identifier of entering spaces and places. Refer specifically to his examination of architectural elements and orders.

⁸⁰ Kostof, Spiro, *A History of Architecture: settings and rituals*, 1985, 1995, Oxford University Press. In the first chapter of this important text, Kostof identifies architecture, as “a social act—social both in method and purpose. It is the outcome of teamwork; and it is there to be made use of by groups of people, groups as small as the family or as large as an entire nation.” By making this critical connection between the complexities of architecture, or more specifically, the comprehensive human environment, Kostof threads together the importance of considering the built environment, place, and cultural and sociological issues when assessing the overall importance and “feeling” or experience of a place. This consideration is key to understanding how diverse people can experience the same space or spaces but have differing opinions on what makes it ‘good’ or ‘bad’.

FEEDBACK:

Your use, findings, and feedback regarding this Person-Centered Assessment Tool (PCAT) 1.0 or the assessment process itself is valuable and requested.

Please feel free to submit your questions, comments, and recommendations in mail or email to:

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Comments: