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An American National Standard

Standard Classification for Serviceability of an Office Facility for Sound and Visual Environment[1,2]

This standard is issued under the fixed designation E1662; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This classification covers pairs of scales for classifying an aspect of the serviceability of an office facility, that is, the capability of an office facility to meet certain possible requirements for suitable sound and visual conditions.

1.2 Within that aspect of serviceability, each pair of scales, shown in Figs. 1-6, are for classifying one topic of serviceability. Each paragraph in an Occupant Requirement Scale (see Figs. 1-6) summarizes one level of serviceability on that topic, which occupants might require. The matching entry in the Facility Rating Scale (see Figs. 1-6) is a translation of the requirement into a description of certain features of a facility which, taken in combination, indicate that the facility is likely to meet that level of required serviceability.

1.3 The entries in the Facility Rating Scale (see Figs. 1-6) are indicative and not comprehensive. They are for quick scanning to estimate approximately, quickly, and economically, how well an office facility is likely to meet the needs of one or another type of occupant group over time. The entries are not for measuring, knowing, or evaluating how an office facility is performing.

1.4 This classification can be used to estimate the level of serviceability of an existing facility. It can also be used to estimate the serviceability of a facility that has been planned but not yet built, such as one for which single-line drawings and outline specifications have been prepared.

1.5 This classification indicates what would cause a facility to be rated at a certain level of serviceability but does not state how to conduct a serviceability rating nor how to assign a serviceability score. That information is found in Practice E1334. The scales in this classification are complimentary to and compatible with Practice E1334. Each requires the other.

2. Referenced Documents

2.1 *ASTM Standards:*[3]

E631 Terminology of Building Constructions

E1334 Practice for Rating the Serviceability of a Building or Building-Related Facility

E1679 Practice for Setting the Requirements for the Serviceability of a Building or Building-Related Facility

2.2 *ISO Document:*[4]

ISO 6240 International Standard, Performance Standards in Building—Contents and Presentation

3. Terminology

3.1 *Definitions:*

3.1.1 *facility*—a physical setting used to serve a specific purpose. **E631**

3.1.1.1 *Discussion*—A facility may be within a building, a whole building, or a building with its site and surrounding environment; or it may be a construction that is not a building. The term encompasses both the physical object and its use.

3.1.2 *facility serviceability*—the capability of a facility to perform the function(s) for which it is designed, used, or required to be used. **E631**

3.1.2.1 *Discussion*—The scope of this performance is of the facility as a system, including its subsystems, components and materials and their interactions, such as acoustical, hydrothermal, air purity, and economic; and of the relative importance of each performance requirement.

3.1.3 *office*—a place, such as a room, suite, or building, in which business, clerical, or professional activities are conducted. **E631**

3.1.4 For standard definitions of additional terms applicable to this classification, see Terminology E631.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *fit-up*—alterations and improvements to the base building and to the building systems, including demolition where required, to prepare the facility for occupancy.

[1] This classification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.25 on Whole Buildings and Facilities.

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[2] Portions of this document are based on material originally prepared by the International Centre for Facilities (ICF) and © 1993 by ICF and Minister of Public Works and Government Services Canada. Their cooperation in the development of this standard is acknowledged.

[3] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[4] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

A.3. Sound and Visual Environment

Scale A.3.1. Privacy and speech intelligibility

Occupant Requirement Scale		Facility Rating Scale
9 ❑ ○ **SPEECH PRIVACY IN WORKSTATION**: Many staff, in individual workstations located anywhere on the office floor, require excellent speech privacy so that content of discussions are confidential, even with raised voices. ○ **UNDERSTANDING SPEECH IN WORKSTATION**: Within each workstation, must be able to easily understand quiet speech, so background sound must not interfere.	8 ❑	9 ❑ ○ **Confidentiality**: Confidentiality in enclosed offices is maintained, even with very high voice levels. Rooms can be located anywhere in the space without the need for costly acoustic treatment in the ceiling. ○ **Background sound for speech privacy**: A background sound system can be zoned and tuned to reliably provide speech privacy in open plan, if combined with appropriate design and layout of workstations. ○ **Speech intelligibility**: When in open areas, i.e. not in an enclosed office, easily able to understand quiet conversation, and quiet telephone conversations.
7 ❑ ○ **SPEECH PRIVACY IN WORKSTATION**: Require good speech privacy in individual workstations located anywhere on the office floor, so that content of discussions are confidential with slightly raised voices. Some people require speech privacy much of the time. ○ **UNDERSTANDING SPEECH IN WORKSTATION**: Need to easily understand normal speech within each workstation.	6 ❑	7 ❑ ○ **Confidentiality**: Confidentiality in enclosed offices is maintained, even with slightly raised voice levels. The ceiling system has or can have baffles, or does not need baffles between rooms. Confidentiality in open plan workstations requires lowered voices. ○ **Background sound for speech privacy**: Background sound is sufficient to provide privacy by masking speech in all but the quietest periods of the day. ○ **Speech intelligibility**: When in open areas, i.e. not in an enclosed office, easily able to understand normal conversation, and normal telephone conversations.
5 ❑ ○ **SPEECH PRIVACY IN WORKSTATION**: In individual enclosed offices located anywhere on the floor, require speech confidentiality with normal voice levels. In open plan areas, staff are prepared to lower voice to get speech privacy. ○ **UNDERSTANDING SPEECH IN WORKSTATION**: Within open plan workstations, need to understand normal speech without strain.	4 ❑	5 ❑ ○ **Confidentiality**: Confidentiality in enclosed offices is maintained with normal voice levels. The ceiling system has or can have baffles. Confidentiality in open plan workstations requires lowered voices. ○ **Background sound for speech privacy**: Background sound is variable and therefore not reliable as a means of masking speech to achieve privacy. Sometimes it is sufficient, and sometimes not. ○ **Speech intelligibility**: When in open areas, i.e. not in an enclosed office, without straining to hear, normal conversation and telephone calls are understood.
3 ❑ ○ **SPEECH PRIVACY IN WORKSTATION**: Few situations require confidentiality. When speech privacy is needed, staff are prepared to close the office door and lower voices. No need for speech privacy in open plan areas. ○ **UNDERSTANDING SPEECH IN WORKSTATION**: Operations require few conversations at workplace, so speech intelligibility is not critical.	2 ❑	3 ❑ ○ **Confidentiality**: Confidentiality requires lowered voices in rooms, even with the door closed. The ceiling system/design, e.g. plenum system, is not capable of preventing normal speech from being heard in adjacent spaces without major effort and fitup cost. ○ **Background sound for speech privacy**: Background sound is not adequate or reliable enough to mask speech for privacy. ○ **Speech intelligibility**: Speech intelligibility is poor, e.g. noise sometimes makes normal conversation difficult to understand in discussions, meetings, or on the telephone.

Scale A.3.1. continued on next page

FIG. 1 Scale A.3.1 for Privacy and Speech Intelligibility

A.3. Sound and Visual Environment

Scale A.3.1. Privacy and speech intelligibility (continued)

Occupant Requirement Scale	Facility Rating Scale
1 ❑ ○ **SPEECH PRIVACY IN WORKSTATION**: There is no requirement at this level. ○ **UNDERSTANDING SPEECH IN WORKSTATION**: There is no requirement at this level.	1 ❑ ○ **Confidentiality**: Because of building design, what is said in one room is clearly understood in adjacent rooms. Fixing this would require major effort and fitup cost. ○ **Background sound for speech privacy**: Background sound, if any, does not mask speech for privacy. ○ **Speech intelligibility**: Speech intelligibility is very poor, e.g. noise often makes normal conversation difficult to understand in the workplace, or on the telephone.

❑ Exceptionally important. ❑ Important. ❑ Minor Importance.	
Minimum Threshold level =	❑ NA ❑ NR ❑ Zero ❑ DP

NOTES *Space for handwritten notes on Requirements or Ratings*

FIG. 1 Scale A.3.1 for Privacy and Speech Intelligibility *(continued)*

4. Significance and Use

4.1 Each Facility Rating Scale (see Figs. 1-6) in this classification provides a means to estimate the level of serviceability of a building or facility for one topic of serviceability and to compare that level against the level of any other building or facility.

4.2 This classification can be used for comparing how well different buildings or facilities meet a particular requirement for serviceability. It is applicable despite differences such as location, structure, mechanical systems, age, and building shape.

4.3 This classification can be used to estimate the amount of variance of serviceability from target or from requirement, for a single office facility, or within a group of office facilities.

4.4 This classification can be used to estimate the following:

4.4.1 Serviceability of an existing facility for uses other than its present use.

4.4.2 Serviceability (potential) of a facility that has been planned but not yet built.

4.4.3 Serviceability (potential) of a facility for which a remodeling has been planned.

4.5 Use of this classification does not result in building evaluation or diagnosis. Building evaluation or diagnosis generally requires a special expertise in building engineering or technology, and the use of instruments, tools, or measurements.

4.6 This classification applies only to facilities that are building constructions, or parts thereof. (While this classification may be useful in rating the serviceability of facilitiesthat are not building constructions, such facilities are outside the scope of this classification.)

4.7 This classification is not intended for, and is not suitable for, use for regulatory purposes, nor for fire hazard assessment nor for fire risk assessment.

5. Basis of Classification

5.1 The scales in Figs. 1-6 contain the basis for classification.

5.2 Instructions for the use of this classification are contained in Practices E1334 and E1679.

6. Keywords

6.1 building; facility; facility occupants; function; officeperformance; rating; rating scale; requirements; serviceability; sound environment; visual environment

A.3. Sound and Visual Environment

Scale A.3.2. Distraction and disturbance

Occupant Requirement Scale		Facility Rating Scale
9 ❑ ○ **CONCENTRATION ON WORK:** Operations require that individuals throughout the office, including those in open plan areas, can easily concentrate on their work. ○ **FREEDOM FROM DISTRACTIONS:** At all times, free from distraction due to noise from within or outside the office, or due to the movement of people in the office. ○ **TOLERANCE FOR OVERHEARD CONVERSATIONS:** Conversations occurring in adjacent open plan workstation must not be easily understood and therefore not distracting.		9 ❑ ○ **Office noise**: There is no reported distraction from office sounds, e.g. from printers or ringing phones. ○ **Background sound as a means of masking distracting noise**: Background sound reliably provides masking of speech and noise from beyond individual workstations and group work areas and does not, itself, cause fatigue. ○ **External noise**: There is no problem due to noise from outside the building or from other floors. ○ **Distracting conversations**: In open plan offices, speech is heard but is not generally understood in adjacent workstations. ○ **Reflected sound**: Reflected sound from one workstation to another is avoided, e.g. by added sound absorption materials on walls and columns, by shape of space, and by shape or placement of surfaces, including window glass. ○ **Movement of people**: There is no distraction in open offices from movement of people or carts in main aisles, even without the use of high screens as visual shields.
7 ❑ ○ **CONCENTRATION ON WORK:** Operations require that individuals throughout the office, including those in open plan areas, can concentrate on their work at all but a few times a week, or in all but a few localized parts of the office. ○ **FREEDOM FROM DISTRACTIONS:** Must be free from all but the occasional distraction due to noise from within or outside the office, or due to the movement of people in the office. ○ **TOLERANCE FOR OVERHEARD CONVERSATIONS:** Conversations in open plan areas occurring two or more workstations away must not be easily understood and therefore not distracting.	8 ❑	7 ❑ ○ **Office noise**: Sounds, e.g. from printers or ringing phones, are only reported as being distracting a few times a week for a few occupants, or in localized areas. ○ **Background sound as a means of masking distracting noise**: Background sound level provides masking of distracting noise at all but the quietest times of day and does not, itself, cause fatigue. ○ **External noise**: Noise from outside the building or from other floors is rarely a disturbance. ○ **Distracting conversations**: In open plan offices, speech on the telephone or in animated discussion is heard and mostly understood in adjacent workstations, but rarely up to two workstations away. ○ **Reflected sound**: Although some sound is reflected from one workstation to another by hard, flat surfaces such as walls and columns, this is not a significant distraction because most such surfaces are treated with absorbent material or so placed or shaped to not reflect sound from one workstation to another. ○ **Movement of people**: The layout and width of main aisles result in only occasional or localized disturbance from movement of people or carts.
5 ❑ ○ **CONCENTRATION ON WORK:** Operations do not require special levels of concentration by individuals in open plan areas. ○ **FREEDOM FROM DISTRACTIONS:** Work is such that most people can tolerate some internal office noise, external noise, nearby conversations, and movement of people. Temporary use of an office or other enclosed room is required when an individual whose workstation is in open plan needs a place in which to concentrate. (continued)	6 ❑	5 ❑ ○ **Office noise**: Sounds, e.g. from printers or ringing phones, are only sometimes distracting for most occupants. ○ **Background sound as a means of masking distracting noise**: Background sound is sufficient to provide masking of distracting noise in some parts of the space, and at some times of the day. ○ **External noise**: Noise from outside the building or from other floors is not generally intrusive or disturbing, usually less than 10 minutes per day. ○ **Distracting conversations**: In open plan offices, someone talking on the telephone or in animated discussion with a colleague is heard and mostly understood in adjacent workstations, sometimes up to two workstations away. (continued)

Scale A.3.2. continued on next page

FIG. 2 Scale A.3.2 for Distraction and Disturbance

A.3. Sound and Visual Environment

Scale A.3.2. Distraction and disturbance (continued)

Occupant Requirement Scale		Facility Rating Scale
5 continued ○ **TOLERANCE FOR OVERHEARD CONVERSATIONS:** In open plan areas, can tolerate people overhearing conversations two workstations away.	4 ❑	5 continued ○ **Reflected sound**: Sound is reflected from one workstation to another by hard, flat surfaces, such as walls and columns that are not treated to absorb sound, and by ceiling light fixtures that have flat plastic lenses; and for some people this is a significant distraction. ○ **Movement of people**: Because of floorplate configuration, many workstations in open plan are adjacent to main aisles, so high screens are required to prevent localized disturbance from movement of people or carts.
3 ❑ ○ **CONCENTRATION ON WORK:** Temporary use of an office or meeting room is required when individuals need a place in which to concentrate. ○ **FREEDOM FROM DISTRACTIONS:** Work is such that most people can tolerate considerable amounts of internal office noise, external noise, nearby conversations, and movement of people. ○ **TOLERANCE FOR OVERHEARD CONVERSATIONS:** In open plan areas, can tolerate people overhearing conversations more than two workstations away.	2 ❑	3 ❑ ○ **Office noise**: Sounds, e.g. from printers or ringing phones, are very distracting at some times of the day, with unpredictable and sudden shifts between low levels and high peaks. ○ **Background sound as a means of masking distracting noise**: Background sounds are not steady enough, loud enough, or with appropriate characteristics to mask distracting noise. ○ **External noise**: External noise, e.g. traffic, aircraft or nearby activity, is present during some working hours, but particularly distracting or annoying at some times of the day. ○ **Distracting conversations**: In open plan offices, speech is heard and understood from two or more workstations away. ○ **Reflected sound**: Many surfaces reflect sound from one workstation to another in the space, and this is distracting to many workers. ○ **Movement of people**: Because of floorplate configuration, most workstations are close to main, high-traffic aisles, so many workers experience major distraction due to movement of people or carts.
1 ❑ ○ **CONCENTRATION ON WORK:** There is no requirement at this level. ○ **FREEDOM FROM DISTRACTIONS:** There is no requirement at this level. ○ **TOLERANCE FOR OVERHEARD CONVERSATIONS:** There is no requirement at this level.		1 ❑ ○ **Office noise**: Sounds, e.g. from printers or ringing phones, are very distracting at all times, with unpredictable and sudden shifts between low levels and high peaks. ○ **Background sound as a means of masking distracting noise**: Background sounds do not mask distracting noise. ○ **External noise**: There is persistent intrusive noise during most working hours from outside sources, e.g. traffic, aircraft or nearby activity. ○ **Distracting conversations**: In open plan offices, speech is heard and understood from several workstations away. ○ **Reflected sound**: Many hard, flat surfaces reflect sound in the space, to a degree that most workers find significantly distracting. ○ **Movement of people**: Because of floorplate configuration, the required location and width of main aisles results in major distraction to all or most workers in open office areas.

❑ Exceptionally important. ❑ Important. ❑ Minor Importance.	
Minimum Threshold level =	❑ NA ❑ NR ❑ Zero ❑ DP

NOTES *Space for handwritten notes on Requirements or Ratings*

FIG. 2 Scale A.3.2 for Distraction and Disturbance *(continued)*

A.3. Sound and Visual Environment

Scale A.3.3. Vibration

Occupant Requirement Scale		Facility Rating Scale
9 ❑ ○ **TOLERANCE OF VIBRATION:** Require complete freedom from detectable floor movement or vibration due to people, equipment, machinery or traffic.	8 ❑	9 ❑ ○ **Movement due to people or equipment**: There is no movement in the floor that is detectable by people. ○ **Vibration from machines or vehicles**: There are no vibrations from machines or traffic that are detectable by people.
7 ❑ ○ **TOLERANCE OF VIBRATION**: Can tolerate slight, rarely detected, movement in the floor due to passage of people or equipment. Require complete freedom from detectable vibration due to machines or traffic.	6 ❑	7 ❑ ○ **Movement due to people or equipment**: There is minor movement in the floor, but only rarely detectable by a few occupants when heavy loads are moved nearby. ○ **Vibration from machines or vehicles**: Occasional vibrations from machines or traffic are detected by some people, but they are never annoying.
5 ❑ ○ **TOLERANCE OF VIBRATION**: Can tolerate occasional slight movement in the floor due to passage of people. Can tolerate very slight structure-borne vibrations due to machinery or traffic, provided they are not annoying to occupants.	4 ❑	5 ❑ ○ **Movement due to people or equipment**: There is occasional movement in the floor when equipment or heavy carts are moved nearby, but it is not detectable by most occupants, or not reported to be annoying. ○ **Vibration from machines or vehicles**: Intermittent structure-borne vibrations from machines or air conditioning equipment or traffic are not detectable to most occupants, and are not reported to be annoying.
3 ❑ ○ **TOLERANCE OF VIBRATION**: There is no requirement at this level.	2 ❑	3 ❑ ○ **Movement due to people or equipment**: There is obvious and annoying movement in some office areas on some floors when people walk by, or equipment, cart or pallet is being moved nearby. ○ **Vibration from machines or vehicles**: There are intermittent and disturbing structure-borne vibrations from machines or air conditioning equipment elsewhere in the building or from vehicular traffic outside the building.
1 ❑ ○ **TOLERANCE OF VIBRATION**: There is no requirement at this level.		1 ❑ ○ **Movement due to people or equipment**: There is obvious and annoying movement in the floor in most office areas when people walk by, or equipment, cart or pallet is being moved nearby. ○ **Vibration from machines or vehicles**: There are continuous and disturbing structure-borne vibrations from machines elsewhere in the building or from vehicular traffic outside the building.

❑ Exceptionally important. ❑ Important. ❑ Minor Importance.	
Minimum Threshold level =	❑ NA ❑ NR ❑ Zero ❑ DP

NOTES *Space for handwritten notes on Requirements or Ratings*

FIG. 3 Scale A.3.3 for Vibration

A.3. Sound and Visual Environment

Scale A.3.4. Lighting and glare

Occupant Requirement Scale		Facility Rating Scale
9 ❑ ○ **LIGHTING LEVELS TO SUIT WORK**: Operations require that illumination levels suit very different types of work. ○ **TOLERANCE OF LIGHTING DEFECTS**: Require freedom from lighting defects including glare, e.g. all staff have VDUs and many work at them for long periods at a time. Very low tolerance for any defects in illumination.		9 ❑ ○ **Illumination level**: The level of illumination is varied as required to provide lower levels needed for VDU screens and higher levels for paper work. ○ **Visual defects**: There are no apparent or reported lighting defects. ○ **Glare**: There is no glare on VDU screens from windows and/or lights.
	8 ❑	
7 ❑ ○ **LIGHTING LEVELS TO SUIT WORK**: Operations require different illumination levels in parts of the office. ○ **TOLERANCE OF LIGHTING DEFECTS**: Nearly all staff have VDUs. Very low tolerance for any illumination defects, or glare from windows or lights.		7 ❑ ○ **Illumination level**: The level of illumination is sufficient to read fine print without strain at any workplace, (test: The quick brown fox jumps over the lazy dog.). Lower levels of illumination are provided in areas with many VDU's, etc., or could be quite readily provided, e.g. by partial delamping. ○ **Visual defects**: Any lighting defects do not affect staff at their workstations, and are not reported as a problem. ○ **Glare**: VDU screen glare from windows and/or lights is barely visible, and can easily be decreased.
	6 ❑	
5 ❑ ○ **LIGHTING LEVELS TO SUIT WORK**: Operations require predominance of lighting levels appropriate to reading fine print. ○ **TOLERANCE OF LIGHTING DEFECTS**: Many VDU's are used. Can tolerate some lighting defects, e.g. some glare from windows or ceiling lights.		5 ❑ ○ **Illumination level**: The level of illumination is sufficient to read fine print without strain at any workplace (test: The quick brown fox jumps over the lazy dog.). No lower levels of illumination are provided for VDU's, etc., and it is not practicable to make the necessary changes. ○ **Visual defects**: There is one visual defect, e.g. gloomy appearance of the ceiling, flicker, extreme contrasts, or different colour fluorescent lamps. ○ **Glare**: VDU screen glare from windows and/or lights is clearly visible, but could be decreased at moderate cost, e.g. by installing parabolic reflectors on ceiling luminaires.
	4 ❑	
3 ❑ ○ **LIGHTING LEVELS TO SUIT WORK**: ○ **TOLERANCE OF LIGHTING DEFECTS**: Most work is visually undemanding, so can tolerate a wide range of levels and quality of illumination without affecting health or productivity. Few VDU's are used.		3 ❑ ○ **Illumination level**: The level of illumination is excessively high, or too low, in a few of the areas used for general office activity. ○ **Visual defects**: There are one or two visual defects, e.g. gloomy appearance of the ceiling, flicker, extreme contrasts at workstations. ○ **Glare**: At many workstations, e.g. 40% to 60%, there is unavoidable VDU screen glare from windows and/or lights, with no effective glare control.
	2 ❑	

Scale A.3.4. continued on next page

FIG. 4 Scale A.3.4 for Lighting and Glare

A.3. Sound and Visual Environment

Scale A.3.4. Lighting and glare (continued)

Occupant Requirement Scale	
1 ❑	○ **LIGHTING LEVELS TO SUIT WORK**: There is no requirement at this level. ○ **TOLERANCE OF LIGHTING DEFECTS**: There is no requirement at this level.

Facility Rating Scale	
1 ❑	○ **Illumination level**: The level of illumination is excessively high, or too low, in most areas used for general office activity. ○ **Visual defects**: There are three or more visual defects, e.g. gloomy appearance of the ceiling, flicker, extreme contrasts at workstations. ○ **Glare**: At all workstations there is or would be unavoidable glare on screen of a VDU, from windows and lights, with no effective glare control.

❑ Exceptionally important. ❑ Important. ❑ Minor Importance.	
Minimum Threshold level =	❑ NA ❑ NR ❑ Zero ❑ DP

NOTES *Space for handwritten notes on Requirements or Ratings*

FIG. 4 Scale A.3.4 for Lighting and Glare *(continued)*

A.3. Sound and Visual Environment

Scale A.3.5. Adjustment of lighting by occupants

Occupant Requirement Scale		Facility Rating Scale
9 ❑ ○ **ADJUSTING FOR TYPE OF WORK:** Operations require that illumination levels in open plan can be readily adjusted on short notice to provide for very different types of work. ○ **OCCUPANT LIGHTING CONTROL:** Require occupant control of general lighting levels in small groups, i.e. zones of less than 15 workstations in open plan. ○ **TASK LIGHTING REQUIREMENT:** Task lighting is required for all or most occupants. ○ **WINDOW COVERING ADJUSTMENT:** Window coverings must allow adjustments to daylight and control of glare.	8 ❑	9 ❑ ○ **Control of ceiling lights**: In open plan areas, lights are switched on/off and dimmed by occupants in zones of less than 15 workstations. Enclosed rooms have switches and dimmers. ○ **Relocation of ceiling lights**: Ceiling light fixtures plug into power source like office equipment, and hang or lay into ceiling grid, so can easily be relocated within ceiling grid, without technical expertise. ○ **Window coverings**: Window coverings are operable by occupants, or automated to respond to prevailing external conditions. ○ **Power for task lights**: Each occupant can add task lights along with personal computer, printer and other accessories.
7 ❑ ○ **ADJUSTING FOR TYPE OF WORK:** Operations require that general illumination levels in open plan can be readily adjusted by occupants in zones with 15 to 25 workstations. ○ **OCCUPANT LIGHTING CONTROL:** Require on/off control of general lights (ceiling) and occasional adjustment of general levels in response to changes in work patterns. ○ **TASK LIGHTING REQUIREMENT:** Task lighting for many or most occupants. ○ **WINDOW COVERING ADJUSTMENT:** Window coverings must be adjustable by occupants.	6 ❑	7 ❑ ○ **Control of ceiling lights**: In open plan areas, lights are switched on/off by occupants in zones with 15 to 25 workstations. Enclosed rooms can have switches and dimmers. ○ **Relocation of ceiling lights**: Ceiling light fixtures can be easily relocated within ceiling grid by a technician, without need for rewiring a circuit or group of fixtures. ○ **Window coverings**: Window coverings are easily operable by occupants. ○ **Power for task lights**: Each occupant can add task lights along with personal computer.
5 ❑ ○ **ADJUSTING FOR TYPE OF WORK:** There are a few tasks requiring different qualities and amounts of general illumination. ○ **OCCUPANT LIGHTING CONTROL:** Operations require on/off control of general lighting (ceiling) in zones with 25 to 30 workstation. ○ **TASK LIGHTING REQUIREMENT:** Require task lighting for some groups or individuals. ○ **WINDOW COVERING ADJUSTMENT:** Window coverings must be adjustable in response to changes in outside light levels, and changes in layout of furniture or equipment.	4 ❑	5 ❑ ○ **Control of ceiling lights**: In open plan areas, lights are switched on/off at the request of occupants in zones no larger than 30 workstations. Enclosed rooms have switches. ○ **Relocation of ceiling lights**: Ceiling light fixtures can be relocated within ceiling grid by a technician, but nearby occupants will be distracted or forced to relocate for hours or a day, and some ceiling tiles are likely to be damaged, or a circuit or group of fixtures will need some rewiring. ○ **Window coverings**: Window coverings are operable by occupants, but because of the type of covering material, e.g. opaque blinds, or floorplate configuration, it is difficult to adjust against glare and still have daylighting. ○ **Power for task lights**: Each occupant can add one task light along with personal computer.

Scale A.3.5. continued on next page

FIG. 5 Scale A.3.5 for Adjustment of Lighting by Occupants

A.3. Sound and Visual Environment

Scale A.3.5. Adjustment of lighting by occupants (continued)

Occupant Requirement Scale		Facility Rating Scale
3 ❑ ○ **ADJUSTING FOR TYPE OF WORK:** There are none or very few tasks requiring different qualities and amounts of light. ○ **OCCUPANT LIGHTING CONTROL:** Operations require minimal control by occupants of lighting. Require on/off control of general lights (ceiling) for whole floors. ○ **WINDOW COVERING ADJUSTMENT:** Window coverings to control glare.	2 ❑	3 ❑ ○ **Control of ceiling lights**: Occupants can request that lights be switched on/off over an entire floor or area of tenancy. ○ **Relocation of ceiling lights**: Ceiling light fixtures are difficult and expensive to relocate. Relocation requires changing or removing part of the ceiling, and office workers leaving the work area for a day or more. ○ **Window coverings**: Window coverings are operable by facilities people, on request from occupants. ○ **Power for task lights**: There are insufficient plugs/power for task lights.
1 ❑ ○ **ADJUSTING FOR TYPE OF WORK:** There is no requirement at this level. ○ **OCCUPANT LIGHTING CONTROL:** There is no requirement at this level. ○ **TASK LIGHTING REQUIREMENT:** There is no requirement at this level. ○ **WINDOW COVERING ADJUSTMENT:** There is no requirement at this level.		1 ❑ ○ **Control of ceiling lights**: There is no local control of ceiling lights. Switching is controlled by the building operator or designated person. ○ **Relocation of ceiling lights**: Ceiling light fixtures can only be relocated by major reconstruction of the ceiling. ○ **Window coverings**: There are no window coverings, or coverings are not operable. ○ **Power for task lights**: There are insufficient power/plugs or capacity for task lights.

❑ Exceptionally important. ❑ Important. ❑ Minor Importance.	
Minimum Threshold level =	❑ NA ❑ NR ❑ Zero ❑ DP

NOTES *Space for handwritten notes on Requirements or Ratings*

FIG. 5 Scale A.3.5 for Adjustment of Lighting by Occupants *(continued)*

A.3. Sound and Visual Environment

Scale A.3.6. Distant and outside views

Occupant Requirement Scale		Facility Rating Scale
9 ❑ ○ **VIEW FROM WORKPLACE**: Require that all staff can see to the outside from their workplaces, almost all while seated. ○ **SEEING TO A DISTANCE**: VDU users must be able to relax their eyes by glancing up and seeing to a distance.		9 ❑ ○ **Relaxation of eyes**: To relax the eyes, VDU users can see 5 m or more by glancing up. ○ **View to outside**: All occupants can see to the outside from their workplaces. All occupants are within 3 workplaces, or about 7.5 m, from windows, and most, e.g. 80%, are within 5 m of windows.
	8 ❑	
7 ❑ ○ **VIEW FROM WORKPLACE**: Require that most staff can see to the outside or to an atrium while seated at their workplaces. ○ **SEEING TO A DISTANCE**: VDU users must be able to relax their eyes by seeing to a distance, if necessary by turning to the side.		7 ❑ ○ **Relaxation of eyes**: To relax the eyes, VDU users can see 5 m or more by glancing up or turning the head. ○ **View to outside**: Most occupants can see to the outside or to an atrium from their workplaces, and most, e.g. 80%, are within 3 workplaces, or about 7.5 m from windows.
	6 ❑	
5 ❑ ○ **VIEW FROM WORKPLACE**: Require that a majority, e.g. about two thirds, of the staff can see to the outside or to an atrium from their workplaces. ○ **SEEING TO A DISTANCE**: VDU users must be able to relax their eyes by seeing to a distance, if necessary by turning around.		5 ❑ ○ **Relaxation of eyes**: To relax the eyes, VDU users can see 5 m or more by glancing up or by turning (chair or torso) to the side. ○ **View to outside**: The majority of occupants can see to the outside or to an atrium from their workplaces, and many, e.g. 65%, are within 3 workplaces, or about 7.5 m from windows.
	4 ❑	
3 ❑ ○ **VIEW FROM WORKPLACE**: Require that only a minority of staff, e.g. about one third, can see to the outside or to an atrium while at their workplaces, e.g. many staff are regularly out of the office on business. ○ **SEEING TO A DISTANCE**: Tolerable for VDU users to stand up to see to a distance to relax their eyes. Few staff work at VDU's and they do so only intermittently.		3 ❑ ○ **Relaxation of eyes**: To relax the eyes, most VDU users must stand up to see more than 5 m. ○ **View to outside**: Most people can see to the outside only from a public area or individual offices. Some, e.g. 30%, can see to the outside or to an atrium while seated at their workplaces.
	2 ❑	
1 ❑ ○ **VIEW FROM WORKPLACE**: There is no requirement at this level. ○ **SEEING TO A DISTANCE**: There is no requirement at this level.		1 ❑ ○ **Relaxation of eyes**: From workstations, it is not possible for VDU users to relax the eyes by seeing to a distance, e.g. more than 5 m. ○ **View to outside**: Few people, e.g. less than 20%, can see to daylight while seated at their workplaces.

❑ Exceptionally important. ❑ Important. ❑ Minor Importance.	
Minimum Threshold level =	❑ NA ❑ NR ❑ Zero ❑ DP

NOTES *Space for handwritten notes on Requirements or Ratings*

FIG. 6 Scale A.3.6 for Distant and Outside Views