



Standard Classification for Serviceability of an Office Facility for Meetings and Group Effectiveness^{1,2}

This standard is issued under the fixed designation E 1661; 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 contains 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 to enable work groups or project groups to function effectively and productively.

1.2 Within that aspect of serviceability, each pair of scales, shown in Figs. 1-4, are for classifying one topic of serviceability. Each paragraph in an Occupant Requirement Scale (see Figs. 1-4) summarizes one level of serviceability on that topic, which occupants might require. The matching entry in the Facility Rating Scale (see Figs. 1-4) 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. 1-4) 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 E 1334. The scales in this classification are complimentary to and compatible with Practice E 1334. Each requires the other.

2. Referenced Documents

2.1 *ASTM Standards:*

E 631 Terminology of Building Constructions³

E 1334 Practice for Rating Serviceability of a Building or Building-Related Facility³

E 1679 Practice for Setting Requirements for Serviceability of a Building or Building-Related Facility³

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.

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 (see Terminology E 631).

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.

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 (see Terminology E 631).

3.1.3 *office*—a place, such as a room, suite, or building, in which business, clerical or professional activities are conducted (see Terminology E 631).

3.1.4 For standard definitions of additional terms applicable to this classification, see Terminology E 631.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *workgroup*—people who work closely together to achieve a defined task, project, or objective, which is often based in a single workroom.

¹ This classification is under the jurisdiction of ASTM Committee E-6 on Performance of Buildings and is the direct responsibility of Subcommittee E06.25 on Whole Buildings and Facilities.

Current edition approved April 15, 1995. Published July 1995. Originally published as E 1661 – 95. Last previous edition E 1661 – 95.

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 *Annual Book of ASTM Standards*, Vol 04.11.

⁴ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

**A.2. Meetings and Group Effectiveness****Scale A.2.1. Meeting and conference rooms**

Occupant Requirement Scale		Facility Rating Scale	
9	☐ ○ QUANTITY AND SIZE OF ROOMS: Operations require many types and sizes of meetings, including conferences of about 25 plus observers. ○ LOCATION IN OFFICE: On large floors, the meeting rooms need to be distributed throughout the office, and only a few of the largest rooms may be in a group at one location. ○ FREQUENCY OF MEETINGS: Many meetings last for several hours and some all day. The frequency of meetings requires that many meeting rooms be used almost continuously by successive groups. Meetings often involve visitors from other organizations. ○ PRIVACY AND FREEDOM FROM DISTRACTION: The nature of the work sometimes requires complete privacy, and much meeting work requires extended periods of concentration. ○ AUDIO VISUAL AIDS: Audio-visual presentations are used extensively, e.g. video, overhead transparency, 35 mm slides, and display of computer information on large monitor or projection display, connected to local area network.	8	☐ ○ <u>Mix, quantity:</u> Sufficient meeting rooms and conference rooms exist with full mix of size/type, including a large conference room with audience. ○ <u>Floorplate and access:</u> There is sufficient space to add or enlarge a conference room, with direct, controlled entry from public access zone. No wayfinding difficulties for visitors to any meeting or conference rooms. ○ <u>Acoustic control:</u> Excellent, e.g. raised voices or amplified sounds are not heard in adjacent spaces, and sounds from adjacent spaces are never distracting. It is easy to understand soft-spoken speech from across the room, and no echo or reverberation from loud or abrupt sounds. ○ <u>Environment:</u> Excellent, e.g. ventilation rates (current ASHRAE Standards 62 and 55) and volume of air entering the space are maintained at all times that the rooms are in use (see introductory pages to this Aspect A2). Rooms are comfortable for full-day use. Local control of lighting, ventilation and temperature exists in all meeting rooms, including temporary flushing with 100% outside air. Separate illumination for wall-wash, for presentation at end of the room, and for work surfaces, all under instructor control. Meeting and conference rooms can be located at the outside or atrium, so all can have windows. ○ <u>Fixtures and fixed equipment:</u> There is provision for full audio-visual presentations, e.g. screens and sound system. The present high-quality standards for meeting rooms are achievable in any location on the floor, including monitor or projected displays generated by a portable computer (which can be connected to a local area network). Ceiling height at screen end of room is at least 2.7 m in rooms with a long dimension of up to 4.5 m and a capacity of 10 people or less. Ceiling height at screen end of room is at least 3 m in larger rooms.
7	☐ ○ QUANTITY AND SIZE OF ROOMS: Operations require several types and sizes of meetings, including conferences of about 20 plus a few observers. ○ LOCATION IN OFFICE: Meeting rooms may be grouped together at one location on a floor. ○ FREQUENCY OF MEETINGS: Some meetings last for several hours or all day, but most are 2 hours or less. The frequency of meetings requires that some rooms be used almost continuously by successive groups. Meetings often involve visitors from other organizations. (continued)	6	☐ ○ <u>Mix, quantity:</u> Meeting rooms exist with a good range of sizes, e.g. small, medium, large, and one medium size conference room. One large conference room with space for audience now exists, or capable of installing one easily. ○ <u>Floorplate and access:</u> Capability for large conference room with audience, adjacent to public access zone, or one exists. No wayfinding difficulties for visitors. ○ <u>Acoustic control:</u> Good, e.g. raised voices or amplified sounds are not understood in adjacent spaces, and sounds from adjacent spaces are rarely distracting. Soft-spoken speech from across the room can be understood. Only slight echo or reverberation from loud or abrupt sounds; or, only slight muffling of speech and loud sounds. ○ <u>Environment:</u> Good, e.g. ventilation rates (current ASHRAE Standards 62 and 55) per person make the rooms comfortable for full-day use. If variable air volume boxes are used, volume never falls below required ventilation rates. Capability exists for added ventilation. There is a local thermostat, under occupant control, of ventilation and temperature. Local control of lighting exists in all meeting rooms. Meeting and conference rooms can be located at the outside or atrium with some difficulty. (continued)

Scale A.2.1. continued on next page

FIG. 1 Scale A.2.1 for Meeting and Conference Rooms

**A.2. Meetings and Group Effectiveness****Scale A.2.1. Meeting and conference rooms (continued)**

Occupant Requirement Scale	Facility Rating Scale
7 (continued) ○ PRIVACY AND FREEDOM FROM DISTRACTION: The work requires good concentration, and above average privacy and freedom from distraction. ○ AUDIO VISUAL AIDS: Frequent audio-visual presentations, e.g. video, overhead transparency, 35 mm slides, use of portable or notebook computer connected to local area network, with large monitor display. 5 □ ○ QUANTITY AND SIZE OF ROOMS: Operations require meetings of a few types and sizes that can be accommodated by two or three room sizes. Large meetings can be held in open areas or in leased or borrowed accommodation, but may justify the addition of a conference room in the future. ○ LOCATION IN OFFICE: Meeting rooms may be grouped together and the location is not critical. ○ FREQUENCY OF MEETINGS: Meetings typically last for an hour or two, and sometimes up to half a day. The frequency of meetings usually means that each room remains unused for part of the day. Visitors infrequently or hardly ever use meeting rooms. ○ PRIVACY AND FREEDOM FROM DISTRACTION: Need average levels of concentration, privacy, and freedom from distraction. ○ AUDIO VISUAL AIDS: Audio-visual aids are used occasionally, mainly overhead transparencies.	7 (continued) ○ Fixtures and fixed equipment: There is provision for full audio-visual presentations, and for using portable computer with large display monitor and connection to local area network. Ceiling height at screen end of room is at least 2.7 m in rooms with a long dimension of up to 4.5 m and a capacity of 10 people or less. Ceiling height at screen end of room is at least 3 m in larger rooms. 5 □ ○ Mix, quantity: Present and potential meeting room sizes are mainly small or medium. There are barely enough meeting rooms. No medium or large conference rooms exist, but have space and capability in existing open plan area for meetings of 25 plus an audience. ○ Floorplate and access: Floorplate permits large conference room with audience. It is difficult to place meeting rooms near reception from the public access zone. Some wayfinding difficulties for visitors. ○ Acoustic control: Only raised voices or amplified sounds are understood in adjacent spaces. Sounds from adjacent spaces are occasionally distracting; difficult and costly to fix. Easy to understand normal speaking voice across the room. Soft-spoken speech is sometimes hard to understand, or distinct but hard to hear. ○ Environment: Adequate, e.g. ventilation rates reach target (current ASHRAE Standards 62 and 55) for meeting rooms and are comfortable for half-day use. Ventilation and temperature are controlled by thermostat with fixed settings which cannot be adjusted by occupants. Limited capability exists for added ventilation. Local control of lighting in meeting rooms is possible, but difficult and costly. Difficult and expensive to locate meeting and conference rooms at the outside, so windows to the outside are mostly not practicable. ○ Fixtures and fixed equipment: There is basic provision for audio-visual presentations, e.g. screens are installed and basic sound system, and projection of video or computer images, or video monitors can conveniently be used. Ceiling height is 2.6 m to 2.7 m for rooms with a long dimension of up to 6.5 m, and 3 m ceiling height for larger rooms.

Scale A.2.1. continued on next page

FIG. 1 Scale A.2.1 for Meeting and Conference Rooms (continued)

3.2.1.1 *Discussion*—The size of a workgroup typically ranges from four to twelve people. Duration of the project, task, or objective may range from weeks to months, or even a

few years. Members of a workgroup need to be in close contact, often face-to-face or sharing use of documents, displays, or other resources, (for example, in a workroom or

**A.2. Meetings and Group Effectiveness****Scale A.2.1. Meeting and conference rooms (continued)**

Occupant Requirement Scale	Facility Rating Scale
3 ☐ ○ QUANTITY AND SIZE OF ROOMS: Operations require only limited types and sizes of meetings, readily accommodated in one size room. ○ LOCATION IN OFFICE: If the most common need is for a medium or small size room, a small conference room may be justified in the future. Large meetings are not normally held, or can be held in open plan or in rented or borrowed accommodation. ○ FREQUENCY OF MEETINGS: Meetings are mostly of short duration, e.g. one hour or less, and do not normally occur in close succession. Visitors infrequently or hardly ever use meeting rooms. ○ PRIVACY AND FREEDOM FROM DISTRACTION: No special needs for privacy. ○ AUDIO VISUAL AIDS: No special need for use of audio-visual presentations. 2 1 ☐ ○ QUANTITY AND SIZE OF ROOMS: Operations require a few types and sizes of meetings. ○ LOCATION IN OFFICE: Larger meetings can occur in open plan areas, or elsewhere. No foreseeable need for a conference room. ○ FREQUENCY OF MEETINGS: Held only infrequently and generally of short duration. Most meetings do not have more than 4 participants. Visitors do not use meeting room(s). ○ PRIVACY AND FREEDOM FROM DISTRACTION: Privacy and freedom from distraction not seen as significant. ○ AUDIO VISUAL AIDS: Audio-visual presentations rarely or never used.	3 ☐ ○ Mix, quantity: Meeting rooms now are mainly one size, e.g. either small or medium, and there are too few. No conference room exists, but one could be installed. There is marginally enough space in open plan area for meetings of 25 plus an audience. ○ Floorplate and access: It would be difficult to install meeting rooms near reception. Some wayfinding difficulties exist for visitors. ○ Acoustic control: Poor, e.g. discussion is understood in adjacent spaces, and sounds from adjacent spaces are often distracting. Fixing this is possible, but difficult and costly. In some parts of the room, a normal speaking voice is hard to understand, or hard to hear. ○ Environment: Poor, e.g. ventilation rates per person are not at target (current ASHRAE Standards 62 and 55) for meeting rooms. Limited capability exists for some added ventilation, but not sufficient to meet target. Local control of lighting in meeting rooms is possible but difficult and costly. ○ Fixtures and fixed equipment: Limited provision exists for audio-visual presentations, e.g. screens only, and low ceilings (2.4 m) which prevent the use of projection screens higher than 1.5 m. 2 1 ☐ ○ Mix, quantity: No meeting rooms exist, or rooms are one size only, e.g. small, and there are too few. There is no conference room or area in open plan that is large enough for meetings of 25 plus an audience, or to install a conference room. ○ Floorplate and access: It is difficult or impossible to install meeting rooms near reception. Staff must escort visitors to meeting places because of wayfinding difficulty. ○ Acoustic control: Bad, e.g. discussion is understood in adjacent spaces, and sounds from adjacent spaces are continually distracting. ○ Environment: Bad, e.g. ventilation rates per person are effectively lower than in an open office, are not increased for the density of population in meetings, and more ventilation cannot be added. Local control of lighting would be very difficult and costly. ○ Fixtures and fixed equipment: No provision for audio-visual presentations, and very difficult or expensive to install.

☐ 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.2.1 for Meeting and Conference Rooms (continued)

project room) even for those individuals whose daily or hourly contact with other members of the same workgroup is by computer network or electronic mail.

3.2.2 *workplace*—the part of usable area intended for a specific function, type of work, or workgroup or project team.

**A.2. Meetings and Group Effectiveness****Scale A.2.2. Informal meetings and interaction**

Occupant Requirement Scale		Facility Rating Scale	
9	☐ VALUE TO ORGANIZATION: The success of the organization is critically dependent on the innovation, creative thinking and collaboration of its people. ☐ PURPOSE OF MEETING AND INTERACTION: It is essential that staff be aware of what people in other parts of the organization are doing, and how it might affect or be supported by their own work and ideas. ☐ PARTICIPANTS IN MEETINGS AND INTERACTION: Informal meetings, interactions and dialogue among staff with diverse roles and interests are to be encouraged, explicitly and implicitly, as strongly as possible. Interactions are to be especially encouraged among people from different branches, divisions and projects whose interests and objectives may compete or diverge.	8	☐ Internal circulation node(s): Staff going from one part of the facility to another must pass through a circulation node where they are likely to encounter others whom they do not normally see during daily work, e.g. floorplate configuration and layout have all main aisles and corridors within occupant space converge on a central circulation node (main street) from which all frequently used support and service facilities are accessed; and, access to main vertical circulation (elevators, escalators, main stairs) is through this node. ☐ Entrance node(s): When arriving and leaving, staff are likely to encounter others whom they do not normally see during daily work, e.g. all use single entrance route, and pass through a single main lobby, whether to/from parking, public transit, bicycle or on foot. ☐ Pause area(s): Floorplate, layout and fitup encourage unplanned informal interaction among staff, e.g. where main circulation routes meet, pause areas facilitate informal, unplanned discussion with colleagues from other workgroups. Pause areas have seating, whiteboards or chalkboards, access to beverages, and users can see to the outside or to an atrium. ☐ Food and public facilities: Floorplate, layout and fitup encourage informal interaction among staff during breaks, e.g. pleasant food facility with a view to the outside or to an atrium and large tables so staff typically eat together with people outside their immediate work group.
7	☐ VALUE TO ORGANIZATION: To a significant degree, the success of the organization is dependent on the innovation and collaboration of its people. ☐ PURPOSE OF MEETING AND INTERACTION: It is important that staff be aware of what people in other parts of the organization are doing, and how it might affect or be supported by their own work and ideas. ☐ PARTICIPANTS IN MEETINGS AND INTERACTION: Informal interactions and dialogue among staff with diverse roles and interests are to be encouraged, explicitly and implicitly. Interactions are to be encouraged among people from different branches, divisions and projects whose interests and objectives may compete or diverge.	6	☐ Internal circulation node(s): Most staff going from one part of the facility to another pass through a circulation node where they are likely to encounter others whom they do not normally see during daily work, e.g. floorplate configuration and layout have most main aisles and corridors within occupant space converge on a central circulation node (main street) from which some frequently used support and service facilities are accessed; and, access to main vertical circulation (elevators, escalators, main stairs) is through this node. ☐ Entrance node(s): When arriving and leaving, staff are likely to encounter others whom they do not normally see during daily work, e.g. all use one of two entrance routes, whether to/from parking, public transit, bicycle or on foot. ☐ Pause area(s): Floorplate, layout and fitup encourage unplanned informal interaction among staff, e.g. at some points where main circulation routes meet, pause areas facilitate informal, unplanned discussion with colleagues from other workgroups. Pause areas have two or more of: seating, whiteboards or chalkboards, access to beverages, and users can see to the outside or to an atrium. ☐ Food and public facilities: Floorplate, layout and fitup encourage informal interaction among staff during breaks, e.g. at lunch, a pleasant food facility with a view to the outside or to an atrium and large tables, for 4, 6 and 8 persons, so staff typically eat together, and with people outside their immediate work group.

Scale A.2.2. continued on next page

FIG. 2 Scale A.2.2 for Informal Meetings and Interaction

**A.2. Meetings and Group Effectiveness****Scale A.2.2. Informal meetings and interaction (continued)**

Occupant Requirement Scale		Facility Rating Scale
5 ☐ ○ VALUE TO ORGANIZATION: The success of the organization is aided by the collaboration of its people. ○ PURPOSE OF MEETING AND INTERACTION: Staff should be aware of what other parts of the organization are doing, and how it might affect or be supported by their own work. ○ PARTICIPANTS IN MEETINGS AND INTERACTION: Informal interactions are to be encouraged among people from different branches, divisions and projects.	4 ☐	5 ☐ ○ Internal circulation node(s): Some staff going from one part of the facility to another are likely to encounter others whom they do not normally see during daily work, e.g. floorplate configuration and layout have some main aisles and corridors within occupant space that converge on a central circulation node from which some support and service facilities are accessed. ○ Entrance node(s): When arriving and leaving, some staff may encounter others whom they do not normally see during daily work, e.g. when passing through the elevator lobby. ○ Pause area(s): Floorplate, layout and fitup permit informal interaction among staff, e.g. pause areas facilitate informal discussion with colleagues from other workgroups. Pause areas have access to beverages. Users may see to the outside or to an atrium from within pause area, or nearby. ○ Food and public facilities: Floorplate, layout and fitup encourage informal interaction among staff during breaks, e.g. at lunch, food facility with a view to the outside or to an atrium, and large tables so staff can eat together, and with people outside their immediate work group.
3 ☐ ○ VALUE TO ORGANIZATION: Collaboration among individuals in various workgroups, although welcome, is not seen as particularly significant for the success of the organization. ○ PURPOSE OF MEETING AND INTERACTION: Staff may be aware of what other parts of the organization are doing, however there is no effort or investment to encourage this.	2 ☐	3 ☐ ○ Internal circulation node(s): Staff going from one part of the facility to another are not likely to encounter people from outside their workgroup. ○ Entrance node(s): There are several entrances and stairs or elevators, so staff can go directly from the outside or parking to their immediate work area, without seeing people from other workgroups. ○ Pause area(s): Pause areas are not provided on the office floors, and floorplate, layout or fitup make it very difficult or expensive to provide suitable areas with access to beverages and view to the outside or to an atrium. ○ Food and public facilities: Floorplate, layout and fitup do not encourage informal interaction among staff during breaks, e.g. no central or shared food facility.
1 ☐ ○ VALUE TO ORGANIZATION: Informal meetings and interaction are to be avoided because it is undesirable for personnel to be aware of what others in the organization are doing. ○ PARTICIPANTS IN MEETINGS AND INTERACTION: The facility should permit staff to come and go while having minimal contact with persons from other workgroups.		1 ☐ ○ Internal circulation node(s): Each part of the facility is separate from the others. ○ Entrance node(s): Each workgroup has its own entrance, so staff go directly from the outside or parking to their immediate work area, without seeing people from other workgroups. ○ Pause area(s): Pause areas are not provided. ○ Food and public facilities: There are no shared facilities for food or other public services.

☐ **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.2.2 for Informal Meetings and Interaction (continued)

**A.2. Meetings and Group Effectiveness****Scale A.2.3. Group layout and territory**

Occupant Requirement Scale	Facility Rating Scale
9 ☐ WORKGROUP PARTICIPATION: Workgroups and project teams are vital for operations, with at least a fifth of the office staff participating at any one time. FORMATION AND DURATION OF GROUPS: Need to be able to set them up with a few days to a few weeks advance notice. Most only last for weeks or months, though some last longer. WORKGROUP SIZE: Size of a typical workgroup fluctuates frequently, from month to month or even more often, usually in a range from 3 to 12 people, or more. CONFIGURATION OF WORKSPACES: All workplaces of a workgroup must be in a single cluster. For most workgroups, all workplaces of individuals must open directly into or be across an aisle to a group workroom. SEPARATION OF WORKGROUPS: For protection of information or valuable assets, most workgroups require a secure wall around their cluster of individual and group spaces, with locked-door control of access. For some workgroups, the group workroom(s) must also be enclosed by walls. For most workgroups, an aisle used by non-members must not pass through the workspace of the group. 7 ☐ WORKGROUP PARTICIPATION: Workgroups and project teams are or will be an important part of operations, with at least a tenth of the office staff participating at any one time. FORMATION AND DURATION OF GROUPS: Need to be able to set up workgroups with a few weeks advance notice. Most last for several months, but some last longer. WORKGROUP SIZE: Size of a typical workgroup varies over time, usually in a range from 3 to 12 people. CONFIGURATION OF WORKSPACES: All individual and group spaces of a workgroup must be in a single cluster. For most workgroups, all workplaces of individuals must be adjacent to a group workroom. Some or all individual workplaces may be within the group workroom(s). SEPARATION OF WORKGROUPS: For protection of information or valuable assets, some workgroups require a wall around their cluster of individual and group spaces, with locked-door control of access. Each project team needs its own group workroom. Several sub-groups may meet separately at the same time.	9 ☐ Layout for efficient group work: In nearly all parts of the floorplate, no aisle or corridor need pass through a cluster of individual workplaces and group spaces. Layout for various group sizes: The floorplate will allow a cluster of an appropriate mix of individual workplaces and support spaces, with a minimum dimension of 9 m, in any functionally required location. Environmental control: The cluster of spaces for each workgroup can easily have separate control of illumination and HVAC, including zone control of temperature, and on-off and temperature control of HVAC when working outside normal hours. Separation: Full-height walls are provided or can be installed around the workplace of each group, without requiring changes to building systems. Any workgroup can have locked-door control of entry. Legibility of boundaries and territory: There is no possible doubt about when one is entering and leaving any group's territory, e.g. by doors, signs, change of colour on vertical surfaces, banners or other devices. While in the group territory, the group's identity is clearly recognizable. 7 ☐ Layout for efficient group work: No public corridor, main aisle or emergency egress route need pass through the cluster of individual and group spaces. Any secondary aisles that pass through need only be used by members of workgroups having same access to secure information. Floorplate width is between 9 m and 18.5 m. Layout for various group sizes: The floorplate allows a cluster of an appropriate mix of individual and group spaces in most locations. Few areas need to have a smaller dimension than 7.5 m, some about 9 m x 12 m. Environmental control: The cluster of spaces for each workgroup can easily be under separate control of HVAC, e.g. zone control of temperature, and on-off and temperature control of HVAC when working outside normal hours. Separation: Full-height walls are provided or can be installed around the cluster of individual and group spaces of each workgroup, in most parts of the floorplate, without requiring changes to building systems. Some workgroups can have locked-door control of entry. Legibility of boundaries and territory: It is obvious when one is entering or leaving any group's territory, e.g. by signs on walls or doors or hanging from ceiling, etc. Within the territory, the identity is indicated at any central place, such as a group workroom.

Scale A.2.3. continued on next page

FIG. 3 Scale A.2.3 for Group Layout and Territory

**A.2. Meetings and Group Effectiveness****Scale A.2.3. Group layout and territory (continued)**

Occupant Requirement Scale	Facility Rating Scale
5 ☐ ○ WORKGROUP PARTICIPATION: Less than one tenth of the staff are or will be in workgroups or project teams. ○ FORMATION AND DURATION OF GROUPS: A typical workgroup exists for at least several months. Creation of new workgroups, or change in size, is usually known more than one month in advance. ○ WORKGROUP SIZE: Typical workgroup sizes vary from 3 to 12 people. ○ CONFIGURATION OF WORKSPACES: All individual and group spaces of a workgroup must be in a single cluster. Workplaces of individual members must be close to or within the group's main workroom. ○ SEPARATION OF WORKGROUPS: The boundary around the cluster of workplaces for a workgroup must be recognizable to members and visitors, whether by walls, special furniture screens, signage or other devices. Low-traffic aisles may pass through the cluster of workplaces, but high-traffic aisles may not. 3 ☐ ○ WORKGROUP PARTICIPATION: Workgroups are a minor aspect of operations, and rarely occur, so there is no planning for them. ○ SEPARATION OF WORKGROUPS: On the rare occasions when a workgroup or project team is set up, there is no requirement that its work be private or secure. Anyone can pass through their work area and see what they are doing. 1 ☐ ○ WORKGROUP PARTICIPATION: No project teams or group work, and no foreseeable need for project teams. 4 ☐ 2 ☐	5 ☐ ○ Layout for efficient group work: Floorplate configuration requires that low-traffic aisles and emergency egress routes pass through all or most potential clusters of individual and group spaces, but high-traffic aisles do not. ○ Layout for various group sizes: The floorplate will allow a cluster of an appropriate mix of individual and group spaces, at many locations. Floorplate width is marginally adequate, e.g. few areas have a smaller dimension than 6 m, and some are in a range from 7.5 m to 9 m. ○ Environmental control: Temperature and ventilation can easily be controlled by the building operation, but in open plan areas, this affects a large zone, e.g. one side of the building; and in mostly closed, the smallest zone is 3 to 5 rooms. ○ Separation: Building systems or floorplate design (e.g. atrium, size of floorplate) make it difficult or expensive to change boundaries, to plan for enclosed spaces, or to place full height boundaries around clusters. Therefore, the boundary around each cluster can only be indicated by ceiling-hung panels and signs in aisles. ○ Legibility of boundaries and territory: The boundary around a group's territory is or can easily be indicated by signs on walls, doors or aisles, or hanging from ceiling, etc., or by furniture screens or other devices. 3 ☐ ○ Layout for efficient group work: The floorplate is narrow, typically not more than 6 m in width (short dimension), in some places less than 4.5 m, so cannot avoid having main aisles pass through group work areas. ○ Layout for various group sizes: No areas large enough for workgroups of more than 10 people. ○ Environmental control: When a workgroup needs special environmental control, e.g. for illumination or heating, ventilation or air conditioning, the building is not able to respond in zones smaller than half a floor, and there must be advance notice of one day given. ○ Separation: Walls, high screens and ceiling-hung signs would impair illumination or air movement. ○ Legibility of boundaries and territory: It is difficult to indicate the boundary around a group's territory, and to know in which territory one is. 1 ☐ ○ Layout for efficient group work: A public corridor would have to pass through group work spaces. ○ Separation: Groups must work in open plan areas. ○ Legibility of boundaries and territory: Only signs on furniture are practicable. 4 ☐ 2 ☐

☐ 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.2.3 for Group Layout and Territory (continued)

**A.2. Meetings and Group Effectiveness****Scale A.2.4. Group workrooms**

Occupant Requirement Scale		Facility Rating Scale	
9	☐ WORKROOMS REQUIRED: At least one group workroom or project room is required for each workgroup. Must be suitable for day-long work sessions of entire workgroup plus several visitors. AUDIO VISUAL AND DISPLAY: Must be able to show slides or overheads. Must be able to show charts and diagrams around three walls. SECURITY AND PRIVACY: Most workgroups must have enhanced physical security, including speech privacy. LAYOUT OF GROUP WORKPLACES: The individual workplace of the group leader and a majority of the group members must open directly into its group workroom or be directly adjacent and open into connecting aisles used only by group members.	9	☐ Group or project workroom(s): Each workgroup can have at least one group workroom. Each group workroom can have a view to the outside or to an atrium, if permitted by security considerations. Acoustic separation for information security: Good, eg: never hear sounds from outside the room. Raised voices or amplified sounds are rarely heard and not understood in adjacent spaces. Environment: Good, eg: ventilation rates per person reach target for meeting rooms, making them comfortable for full-day use. Thermostat for ventilation and temperature can be adjusted by occupants. Local control of lighting, on-off and dimming, exists in all group or project workrooms. Ventilation can be augmented on demand. Fixtures and fixed equipment: There is provision for audio-visual presentations, eg: screens and sound system. Ceiling height is at least 2.7 m at screen end of room if long dimension of a workroom is up to 4.5 m. Ceiling height is 3 m for larger spaces. Access from individual workstations: Workstations or rooms for at least half the members of a workgroup can open directly onto its workroom or be immediately adjacent, and others need only cross an aisle or corridor not used by outsiders.
8	☐	8	☐
7	☐ WORKROOMS REQUIRED: At least one group workroom or project room is required for each workgroup. Must be suitable for day-long work sessions of entire workgroup plus one or two visitors. AUDIO VISUAL AND DISPLAY: Must be able to show slides or overheads. Must be able to show charts and diagrams around three walls. SECURITY AND PRIVACY: A few workgroups must have enhanced physical security, including speech privacy. LAYOUT OF GROUP WORKPLACES: For most workgroups, at least the group leader's workplace must open directly into or across an aisle to the group workroom, and the rest of the group must be very close and convenient.	7	☐ Group or project workroom(s): Each workgroup can have at least one group workroom. Each group workroom can have a view to daylight or to an atrium, if permitted by security considerations. Acoustic separation for information security: Good, eg: raised voices or amplified sounds are not understood in adjacent spaces, and sounds from adjacent spaces are rarely distracting. Environment: Food, eg: ventilation rates per person reach target for meeting rooms, making them comfortable for full-day use. No separate thermostat for ventilation and temperature under occupant control, which would be costly to install. Local control of lighting, on-off and partial dimming, in all group or project workrooms. Fixtures and fixed equipment: There is provision for full audio-visual presentations, and for using portable computer with large display monitor and connection to local area network. Access from individual workstations: Workstations or rooms for the group leader and some of the members of a workgroup can open directly onto its group workroom, or they need only cross an aisle or corridor not used by outsiders.
6	☐	6	☐

Scale A.2.4. continued on next page

FIG. 4 Scale A.2.4 for Group Workrooms

3.2.2.1 *Discussion*—A workplace is identified with the name of an overall function, or of the group for which it is intended. A workplace includes workstations and may include workroom(s).

3.2.3 *workroom*—a room for a specific function, such as the group activities of a specific workgroup or project team.

3.2.3.1 *Discussion*—A workroom may include workstation(s).

**A.2. Meetings and Group Effectiveness****Scale A.2.4. Group workrooms (continued)**

Occupant Requirement Scale		Facility Rating Scale
5 ☐ WORKROOMS REQUIRED: There are few workgroups or project groups that require a workroom, less than one tenth of the office population. Must be suitable for day-long work sessions of entire workgroup plus one or two visitors. ○ AUDIO VISUAL AND DISPLAY: Must be able to show slides or overheads. Must be able to show charts and diagrams around three walls. ○ SECURITY AND PRIVACY: No special security requirements.	4 ☐	5 ☐ ○ Group or project workroom(s): Suitable rooms exist or can be installed within group areas without disrupting HVAC. ○ Acoustic separation for information security: Only raised voices or amplified sounds are understood in adjacent spaces. ○ Environment: Adequate, eg: ventilation rates reach target for full-day use of meeting rooms. No local control of ventilation or temperature. Limited capability exists for added ventilation. Lights can be turned off or dimmed for showing slides or overheads. ○ Fixtures and fixed equipment: Basic provision exists for audio-visual presentations, eg: screens are installed and basic sound system, and projection of video or computer images, or video monitors can conveniently be used. Ceiling height is 2.6 m to 2.7 m for rooms with a dimension of up to 6.5 m, and 3 m ceiling height for larger rooms. ○ Access from individual workstations: Floorplate configuration allows individual workstations of workgroup members to be a short distance down a corridor or aisle (not used by outsiders) from the group workroom.
3 ☐ WORKROOMS REQUIRED: Workgroups are a minor aspect of operations. When a group workplace or project room is needed, a level 5 meeting room would be adequate.	2 ☐	3 ☐ ○ Group or project workroom(s): Noise control and privacy are the same as for a normal open office. Only a limited view to daylight. Costly alterations would be needed to achieve equivalent of level 5 training rooms. ○ Acoustic separation for information security: Not provided and would require costly or difficult fitup to achieve because the walls, high screens and ceiling-hung signs would impair illumination or air movement. ○ Environment: Same as open office with no special provision for group activity or meeting. Does not meet target for meeting rooms and would be very difficult or expensive to achieve. ○ Fixtures and fixed equipment: Limited provision exists for audio-visual presentations, e.g. screens only, and a low ceiling height of 2.4 m prevents the use of projection screens higher than 1.5 m. ○ Access from individual workstations: Floorplate configuration makes it not practicable to have more than six individual workstations only a short distance down a corridor aisle (not used by outsiders) from the group workroom.
1 ☐ WORKROOMS REQUIRED: No project teams or group work, and no foreseeable need for project teams.		1 ☐ ○ Group or project workroom(s): There is no view to the outside. Ventilation is inadequate for meetings, and very expensive to improve. Groups must work in open plan areas. Only signs on furniture are practicable.

☐ 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.2.4 for Group Workrooms (continued)



3.2.4 *workstation*—in an open-plan or a shared office, the part of usable area intended as the workplace of an individual; or, the place where a specific function(s) is carried out within a workplace.

3.2.4.1 *Discussion*—Workstations within an open-plan workplace are not separated from each other by floor-to-ceiling walls, for example, a workstation for computer work and a workstation for desk-work and reference to documents are both often found within the workplace of a single individual. (Note that in facility planning and management, the term is not limited to a type of computer used in the workplace.)

4. Significance and Use

4.1 Each Facility Rating Scale (see Figs. 1-4) 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 facilities that 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. 1-4 contain the basis for classification.

5.2 Instructions for the use of this classification are contained in Practices E 1334 and E 1679.

6. Keywords

6.1 acoustic separation; building; conference rooms; facility; facility occupants; function; meeting rooms; office; performance; rating; rating scale; requirements; serviceability; workrooms

APPENDIX

(Nonmandatory Information)

X1. TYPICAL SIZES OF MEETINGS AND CONFERENCE SPACES

See Table X1.1

TABLE X1.1 Typical Sizes of Meeting and Conference Spaces

Foot print	m by m	(ft by ft)	m ²	Square feet	Capacity	Name
B	≅3 by 3	(10 by 10)	9.3	(100)	3–5 ^A	Small meeting
C	≅3 by 4.5	(10 by 15)	13.9	(150)	6–8	Medium meeting
D	≅4.5 by 4.5	(15 by 15)	20.9	(225)	8–12	Large meeting
E	≅4.5 by 6	(15 by 20)	27.8	(300)	12–16	Small conference
–	≅6 by 7.6	(20 by 25)	46.5	(500)	16–22	Medium conference
–	≅6 by 9.2	(20 by 30)	55.7	(600)	20–26 ^B	Large conference
–	≅7.6 by 15.2	(25 by 50)	116.1	(1250)	50 ^B	Large conference with audience, also boardroom

^A Use round table if need capacity for 5 people.

^B Need higher than normal ceiling to accommodate the large projection screen when presenting to a group of this size, with relatively long distances from people at back of the room; also a dias for people to sit or stand on. Need other support spaces, for example, for coats, and a larger lobby, unless waiting and standing space is provided nearby.

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.



E 1661 – 95a (1999)

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).