



# BUILT ENVIRONMENT

measuring design effectiveness

## INFORMED CONSENT

Welcome to the Built Environment Research Project

Please read the information provided below carefully. If you have any questions or concerns at this point or in the future, please feel free to contact the Built Environment Research Team:

Center for Inclusive Design and Environmental Access  
School of Architecture and Planning  
The State University of New York at Buffalo  
3435 Main Street, 378 Hayes Hall  
Buffalo, NY 14214

Email: [ap-idea@buffalo.edu](mailto:ap-idea@buffalo.edu)  
Telephone: +1 (716) 829-3485 x329  
Fax: +1 (716) 829-3681

If you have any questions about your rights as a participant in this study, you may also contact:

Social and Behavioral Sciences Institutional Review Board  
The State University of New York at Buffalo  
516 Capen Hall, North Campus  
Buffalo, NY 14260

Email: [sbsirb@research.buffalo.edu](mailto:sbsirb@research.buffalo.edu)  
Telephone: +1 (716) 645-6474

### WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this research is to gain an understanding of the built environment's influences on adults' ability to perform routine activities. For the purposes of this study, the built environment refers to human-made surroundings that provide settings for human activity.

### WHAT WILL I NEED TO DO AS A PARTICIPANT?

You will be asked to participate in anonymous surveys that ask about routine activities that commonly occur in three built environments: public buildings, public streets and residential environments. The surveys should each take approximately 10-20 minutes to complete.

## WHAT ARE THE RISKS AND BENEFITS TO ME?

The risks associated with participation in this study are minimal. A small risk to you is that some of the questions may make you feel uncomfortable. If this occurs, you may skip the question and continue with the survey. To protect our participants, we have limited the information that we ask you to provide so you cannot be identified.

There may not be a direct benefit to you personally for participating in this study. However, the information you provide in the surveys will enable design professionals to create environments that are easier for everyone to use. In addition, by participating you will be eligible for random drawings to win cash prizes.

## ARE MY ANSWERS CONFIDENTIAL?

This study is completely anonymous and your confidentiality will be maintained at all times.

## WHAT IF I DON'T WANT TO PARTICIPATE?

Your participation in this study is completely voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled.

You will not be required to answer every question and you can discontinue any survey at any time by simply closing your browser.

## **PARTICIPANT'S STATEMENT OF INFORMED CONSENT:**

**If you agree with the following statement and wish to participate in the study, please mark the circle in front of "I agree" below.**

**"I am at least 18 years of age, have read and understand the explanation provided to me and voluntarily agree to participate in this study."**

I agree

To participate in this study's surveys, you will be required to provide a username and password. You will also be asked to register an e-mail address so that we can provide you with updates on the surveys' results and notify you if you are randomly selected to be one of our cash prize winners.

**1) Give us a username that will be easy for you to remember but doesn't reveal your identity.**

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**2) Give us a password that will be easy for you to remember (for example, the year you were born or your mother's maiden name).**

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**3) Would you like to receive the results of this research study as they become available?**

- Yes
- No

**4) Can we contact you to participate in other research studies?**

- Yes
- No

**5) Please provide your e-mail address below.**

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Thank you for agreeing to participate in the Built Environment Research Project.



This study is being conducted by the Center for Inclusive Design and Environmental Access (IDEA) through the Rehabilitation Engineering Research Center on Universal Design and the Built Environment (RERC-UD) with funding provided by the National Institute on Disability and Rehabilitation Research (NIDRR).



TELL US ABOUT YOURSELF

INSTRUCTIONS: Write the username and password that you gave when you provided Informed Consent.

**A1) What is your username?**

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**A2) What is your password?**

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To help us analyze the responses we get to the study's surveys, we need some general information from you. If you have provided information about yourself during our previous phase of research, we ask that you take the time to fill it out again so we can update our databases.

INSTRUCTIONS: Mark the circle that represents your answer to each question.

**A3) What is your SEX?**

- Male
- Female

**A4) What is your AGE?**

- 18-19
- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54
- 55-59
- 60-64
- 65-69
- 70-74
- 75-79
- 80-84
- 85 or over

**A5) What is your ANNUAL HOUSEHOLD INCOME from all sources (in US dollars)?**

- Less than \$10,000
- \$10,000-\$14,999
- \$15,000-\$24,999
- \$25,000-\$34,999
- \$35,000-\$49,999
- \$50,000-\$74,999
- \$75,000-\$99,999
- \$100,000-\$149,999
- \$150,000-\$199,999
- \$200,000 or more
- Prefer not to answer
- I don't know

**A6) How would you describe the TYPE OF RESIDENTIAL ENVIRONMENT where you currently live?**

- One family house
  - Multi-family house
  - Apartment
  - Condominium
  - Mobile home
  - Row house or townhouse
  - Other (please specify)
- 

**A7) To help us get a general impression of the area where our participants live, enter your POSTAL ZIP CODE.**

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To allow us to analyze the survey responses more thoroughly, we need information about any conditions you may have that affect your ability to perform routine activities. These conditions could be due to a permanent impairment (for example: blindness), temporary injury or circumstance (for example: a broken leg, pregnancy), or a commonly occurring situation (for example: carrying groceries).

**INSTRUCTIONS:** Mark the answer that best represents your response to the question using the following scale:

Always = 100% of the time  
Usually = 75% of the time  
Sometimes = 50% of the time  
Rarely = 25% of the time  
Never = 0% of the time

**A8) How often does the MOBILITY OF YOUR ARMS/HANDS (for example: reaching, gripping, touching, etc.) affect your ability to perform routine activities?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**A9) How often does the MOBILITY OF YOUR LEGS/FEET (for example: walking, climbing stairs, running, etc.) affect your ability to perform routine activities?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**A10) How often does the MOBILITY OF YOUR BACK/NECK (for example: bending, twisting, etc.) affect your ability to perform routine activities?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**A11) How often does HEARING (for example: hearing loss, ringing in the ears, sensitivity to sound, etc.) affect your ability to perform routine activities?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**A12) How often does SIGHT (for example: astigmatism, cataracts, etc.) affect your ability to perform routine activities?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**A13) How often do MENTAL and/or COGNITIVE CONDITIONS (for example: autism, dyslexia, obsessive compulsive disorder, etc.) affect your ability to perform routine activities?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**A14) How often do OTHER CONDITIONS (for example: height extremes, weight extremes, respiratory problems, speech disorders, etc.) affect your ability to perform routine activities?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**A15) If you answered Always, Usually, Sometimes or Rarely to any of the conditions, please describe why below.**

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**A16) If you answered Always, Usually, Sometimes or Rarely to any of the conditions listed above, please describe any assistance and/or assistive devices you typically use in the text box below.**

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**A17) Which condition MOST affects your ability to perform routine activities?**

- Mobility of Arms/Hands
- Mobility of Legs/Feet
- Mobility of Back/Neck
- Hearing
- Sight
- Mental and/or Cognitive
- None
- Other (please specify)

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**A18) If you would like to explain your answer above, please do so in the text box below.**

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Thank you for providing information that will help us analyze the responses we get from the study's surveys.



This study is being conducted by the Center for Inclusive Design and Environmental Access (IDEA) through the Rehabilitation Engineering Research Center on Universal Design and the Built Environment (RERC-UD) with funding provided by the National Institute on Disability and Rehabilitation Research (NIDRR).



**DESIGN EFFECTIVENESS SURVEY FOR PUBLIC BUILDINGS**

The Problematic Activities Survey for Public Buildings identified activities that people find problematic. This Design Effectiveness Survey will examine how effective certain designs are in resolving selected problematic activities.

**INSTRUCTIONS:** Write the username and password that you gave when you provided Informed Consent.

**B1) What is your username?**

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**B2) What is your password?**

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INSTRUCTIONS: First you will be asked how often you typically have a problem performing an activity. Next you will be given a description and drawing of a proposed design that may improve your ability to perform that activity. Then you will be asked how often the activity would pose a problem for you if you encountered the proposed design. Mark the circle that best represents your answer to each question using the following scale:

Always (100% of the time)

Usually (75% of the time)

Sometimes (50% of the time)

Rarely (25% of the time)

Never (0% of the time)

Please pay close attention to the written descriptions for each drawing before answering the questions.

**B3) How often do you typically have a problem USING MANUAL DOORS (for example: detecting their locations, getting to them, opening them, passing through them, closing them, etc.)?**

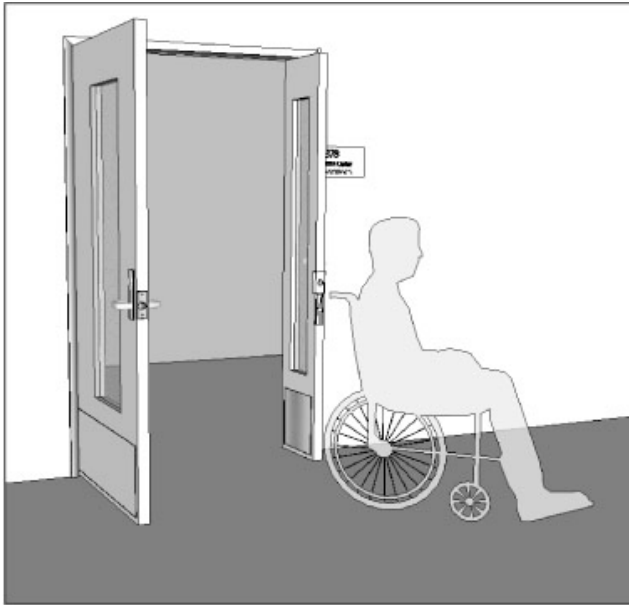
- Always
- Usually
- Sometimes
- Rarely
- Never

**B4) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a manual door in an office building. The doorway is 36 inches wide but can be widened an additional 12 inches by unlatching a side panel to the right of the door. The lightweight door and side panel each have a lever handle and can be pushed or pulled open from either side. The door is identified with visual and tactile signage mounted 48 inches above the floor to the right of the door.



**B5) If you encountered this design, how often would you have a problem USING THIS MANUAL DOOR?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B6) If you would like to explain your answer above, please do so in the text box below.**

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**B7) How often do you typically have a problem USING AUTOMATIC DOORS (for example: detecting their locations, getting to them, opening them, passing through them, etc.)?**

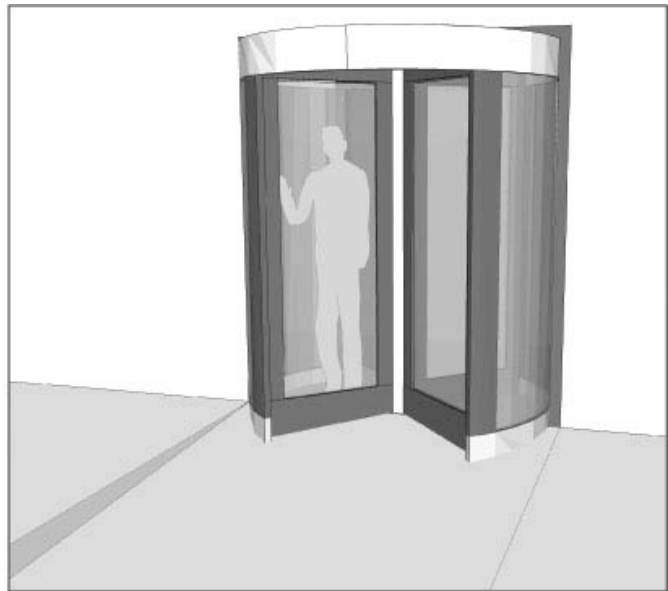
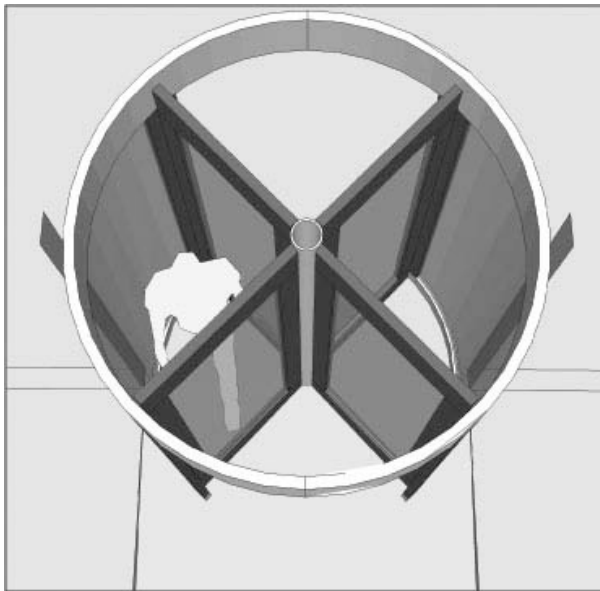
- Always
- Usually
- Sometimes
- Rarely
- Never

**B8) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using an automatic revolving door. The door is housed in a glass enclosure and consists of four single occupancy compartments that revolve at a fixed speed. The path of travel to the revolving door has a slight inclined slope ending at the door's threshold.



**B9) If you encountered this design, how often would you have a problem USING THIS AUTOMATIC DOOR?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B10) If you would like to explain your answer above, please do so in the text box below.**

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**B11) How often do you typically have a problem USING PUBLIC TELEPHONES (for example: detecting their locations, getting to them, having enough space to use them, paying for service, communicating with others, etc.)?**

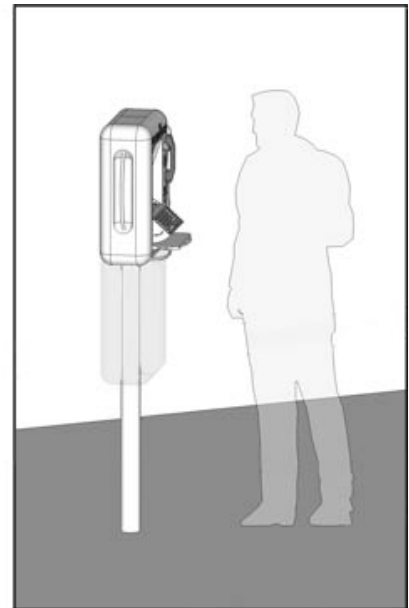
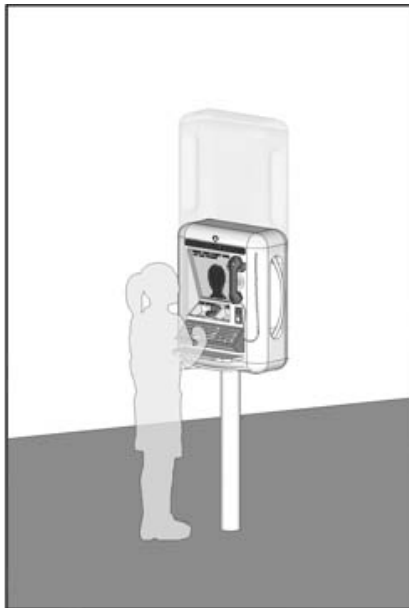
- Always
- Usually
- Sometimes
- Rarely
- Never

**B12) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a public videophone that is mounted to a pedestal which allows it to be rotated left and right as well as adjusted vertically so that it can be positioned 24 to 48 inches above the ground. The videophone has a screen that can also display incoming voice communications as text messages and an adjustable keyboard for sending text messages. It also has a pull-out shelf located below the keyboard. The videophone accepts credit and debit cards as well as coin payments. The standard coin deposit and return have been changed to shallow bowls below the screen. A card reader is located between the coin drop and coin return. This videophone has a handheld receiver with adjustable volume, a headphone jack, and a speakerphone.



**B13) If you encountered this design, how often would you have a problem USING THIS PUBLIC TELEPHONE?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B14) If you would like to explain your answer above, please do so in the text box below.**

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**B15) How often do you typically have a problem USING MAPS (for example: detecting their locations, understanding them, etc.)?**

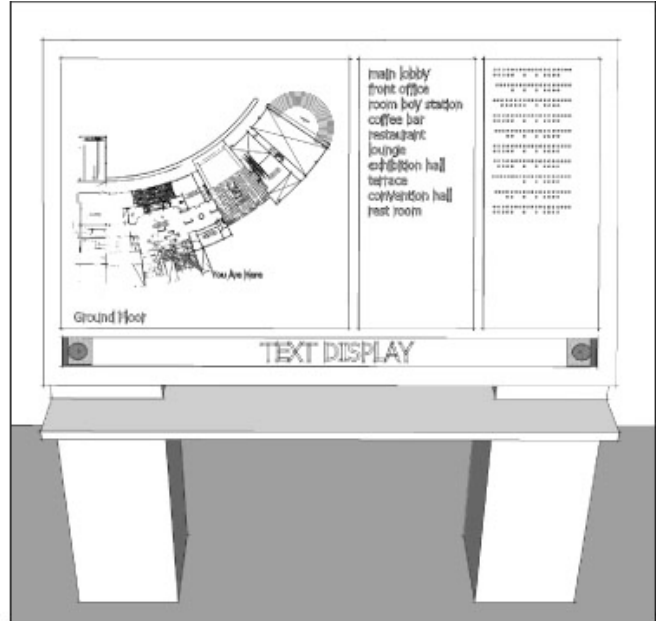
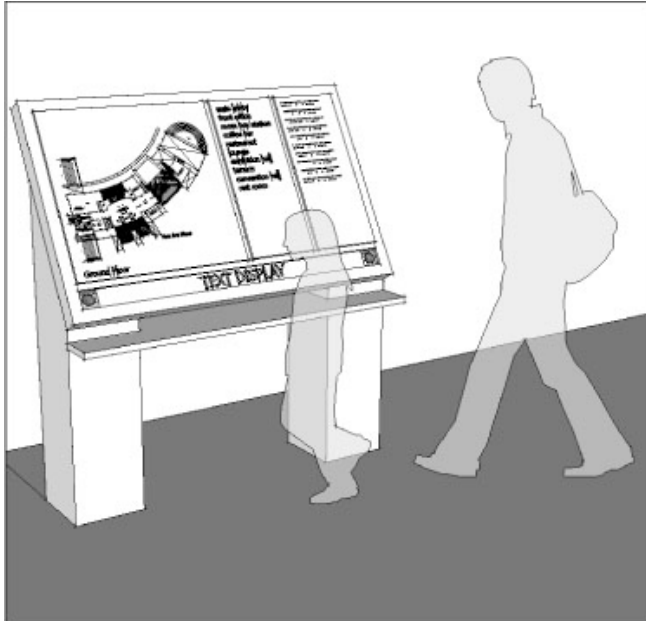
- Always
- Usually
- Sometimes
- Rarely
- Never

**B16) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a tactile map that provides both audio and text displays. This map is mounted at a slight vertical incline, on a shelf 32 inches above the floor, near the entrance and along the path of travel. The map employs raised lines, text, Braille and symbols to identify where you are, landmarks, etc. When a portion of the map is touched, information is displayed in both audio and text formats from speakers and a digital display along the bottom edge of the map.



**B17) If you encountered this design, how often would you have a problem USING THIS MAP?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B18) If you would like to explain your answer above, please do so in the text box below.**

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**B19) How often do you typically have a problem MOVING FROM ONE FLOOR TO ANOTHER using stairs (for example: detecting their locations, getting to them, going up/down them, using handrails, etc.)?**

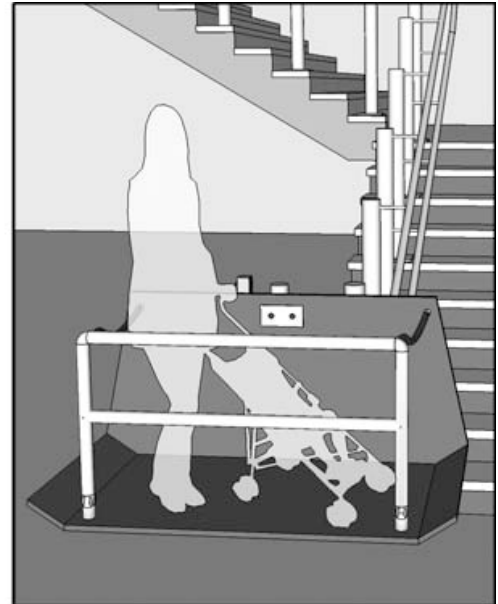
- Always
- Usually
- Sometimes
- Rarely
- Never

**B20) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using stairs that incorporate an inclined platform lift. The steps of these stairs have a uniform height, width and depth. The front edge of each step is made from a luminous material that also lights the step below. Every ten steps there is a large landing where users can stop momentarily without impeding others. The stairs' inclined platform lift operates on dual height handrails. When the lift is not in use it folds up flat out of the path of travel at the bottom of the stairs. Buttons located near and on the platform call, open/close and operate the lift.



**B21) If you encountered this design, how often would you have a problem MOVING FROM ONE FLOOR TO ANOTHER?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B22) If you would like to explain your answer above, please do so in the text box below.**

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**B23) How often do you typically have a problem USING ESCALATORS (for example: detecting their locations, getting to them, going up/down them, using handrails, etc.)?**

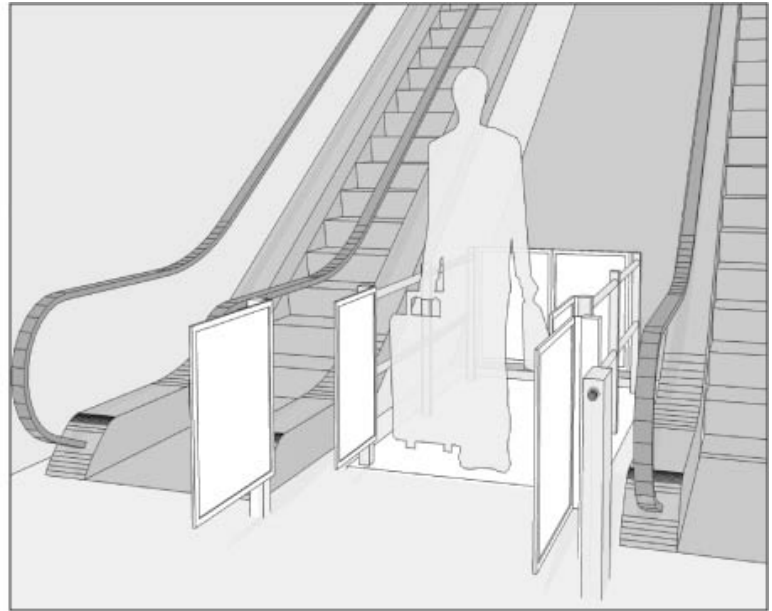
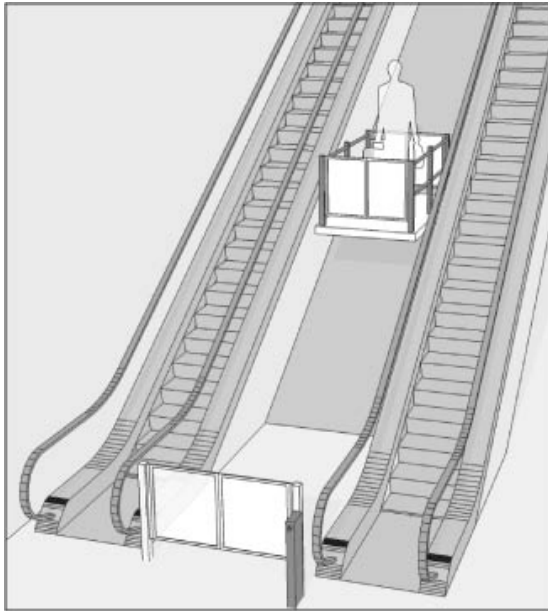
- Always
- Usually
- Sometimes
- Rarely
- Never

**B24) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using escalators that incorporate an inclined lift between them for users of all wheeled devices including luggage, strollers, shopping carts, wheelchairs, etc. The lift has handrails fixed to the platform and runs parallel to the escalator, allowing lift and escalator users to begin and end at the same point. The lift is activated by a call button and has security gates at the top and bottom to prevent access when the lift is in use.



**B25) If you encountered this design, how often would you have a problem USING THESE ESCALATORS?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B26) If you would like to explain your answer above, please do so in the text box below.**

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**B27) How often do you typically have a problem USING SEATING/WAITING AREAS (for example: detecting their locations, having enough space to use them, etc.)?**

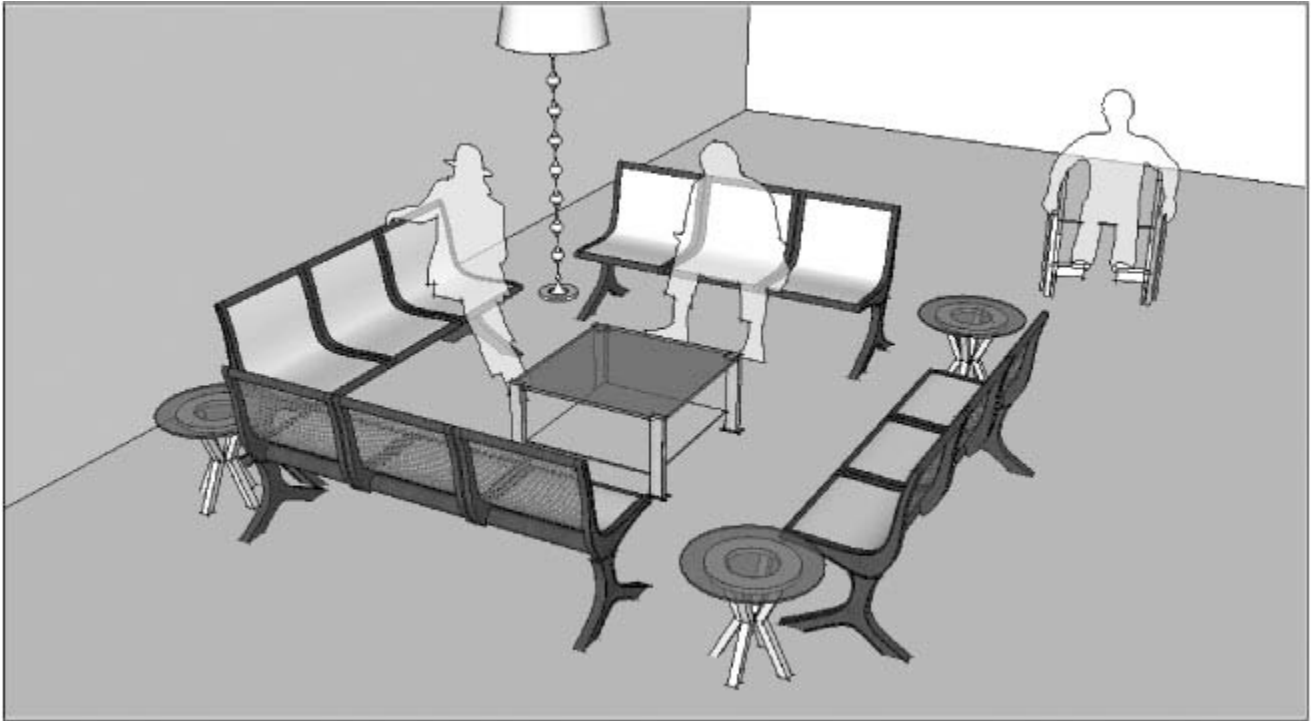
- Always
- Usually
- Sometimes
- Rarely
- Never

**B28) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of people using a waiting area containing bench seating without armrests. The benches are arranged in a square facing inward toward a large coffee table with an end table or floor lamp at each corner.



**B29) If you encountered this design, how often would you have a problem USING THIS SEATING/WAITING AREA?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B30) If you would like to explain your answer above, please do so in the text box below.**

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**B31) How often do you typically have a problem USING DRINKING FOUNTAINS (for example: detecting their locations, getting to them, having enough space to use them, getting water from them, etc.)?**

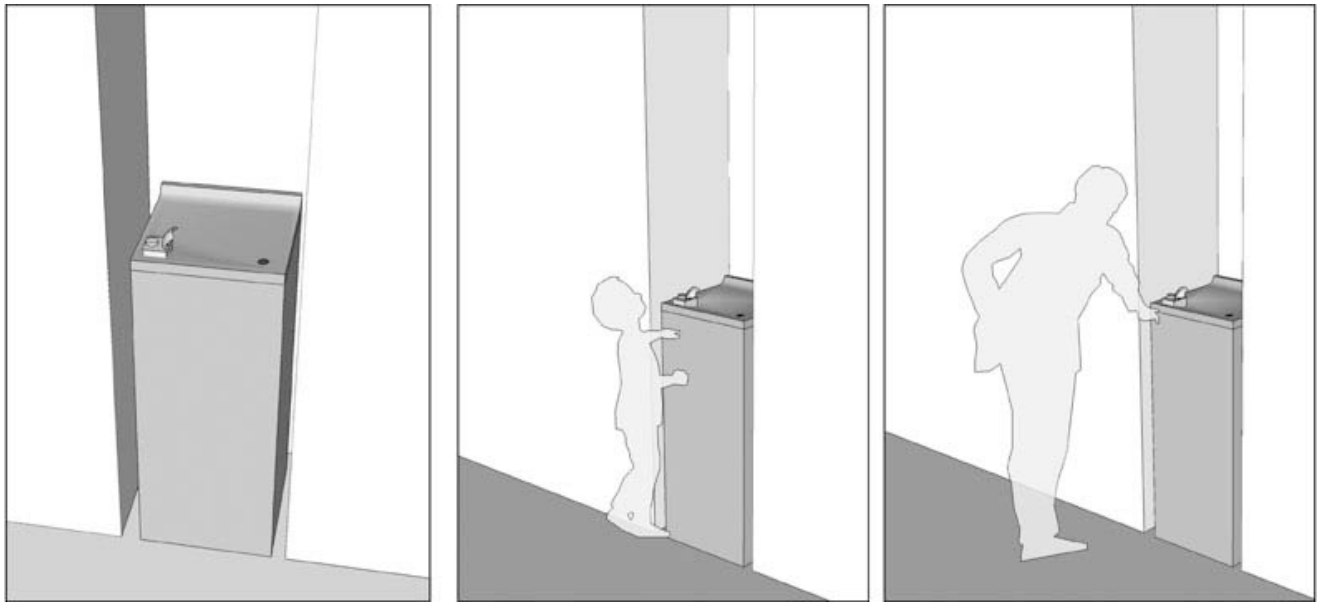
- Always
- Usually
- Sometimes
- Rarely
- Never

**B32) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a free standing drinking fountain. This fountain is an upright rectangular box that sits on the floor and is set back into the wall. The fountain is operated by a push button in the front left corner that is mounted on top of the water spout 40 inches above the floor.



**B33) If you encountered this design, how often would you have a problem USING THIS DRINKING FOUNTAIN?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B34) If you would like to explain your answer above, please do so in the text box below.**

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**B35) How often do you typically have a problem USING VENDING MACHINES (for example: detecting their locations, getting to them, having enough space to use them, paying for products, getting products from them, etc.)?**

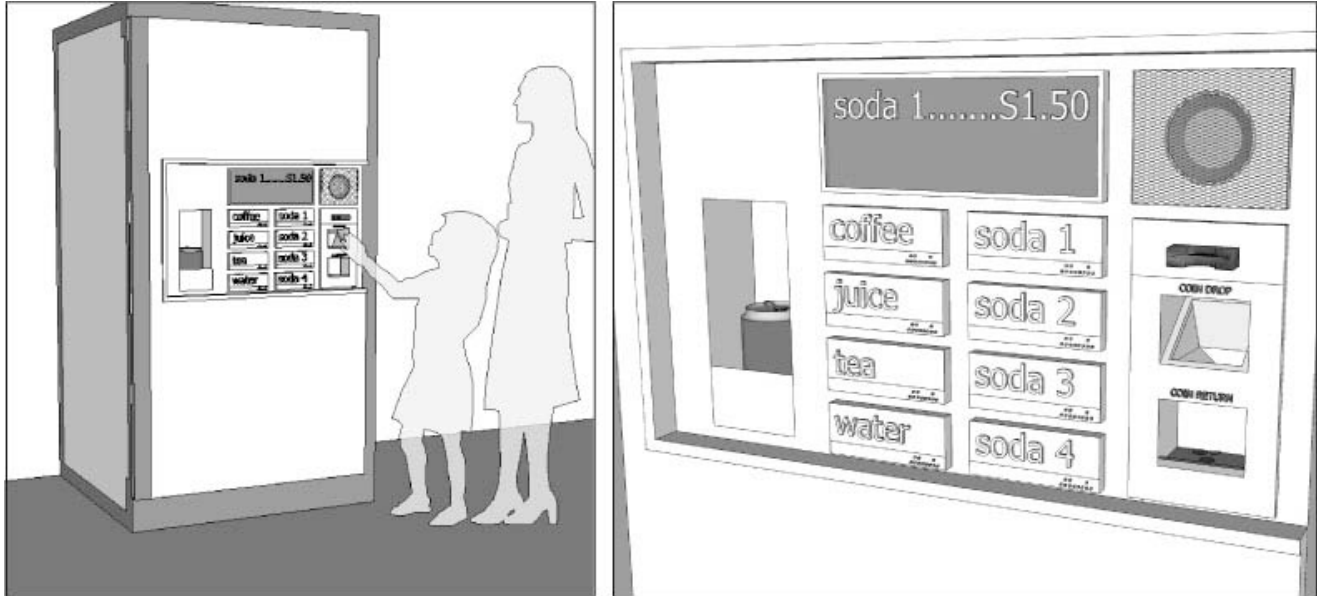
- Always
- Usually
- Sometimes
- Rarely
- Never

**B36) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a beverage vending machine that displays tactile, audio and digital text information about all products. The selection buttons incorporate raised letter and Braille product information. Pushing a selection button provides both audible and text information identifying the product, its availability and price. The standard coin deposit and return have been changed to shallow bowls. The purchased product is dispensed to an opening 36 inches above the floor next to the selection buttons.



**B37) If you encountered this design, how often would you have a problem USING THIS VENDING MACHINE?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B38) If you would like to explain your answer above, please do so in the text box below.**

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**B39) How often do you typically have a problem OBTAINING DISPLAYED PRODUCTS (for example: detecting them, getting to them, reaching them, retrieving them, etc.)?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B40) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using shelving that displays products vertically rather than horizontally so that each product is available at various heights. All shelves are sloped so that available products slide forward to the front edge of the shelf. Information identifying the product information and its price are displayed in text and Braille on the front edge of the shelf.



**B41) If you encountered this design, how often would you have a problem OBTAINING THESE DISPLAYED PRODUCTS?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B42) If you would like to explain your answer above, please do so in the text box below.**

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**B43) How often do you typically have a problem OBTAINING INFORMATION OR ASSISTANCE FROM ANOTHER PERSON at a customer service desk (for example: detecting its locations, getting to it, having enough space to interact with the person, communicating with the person, etc.)?**

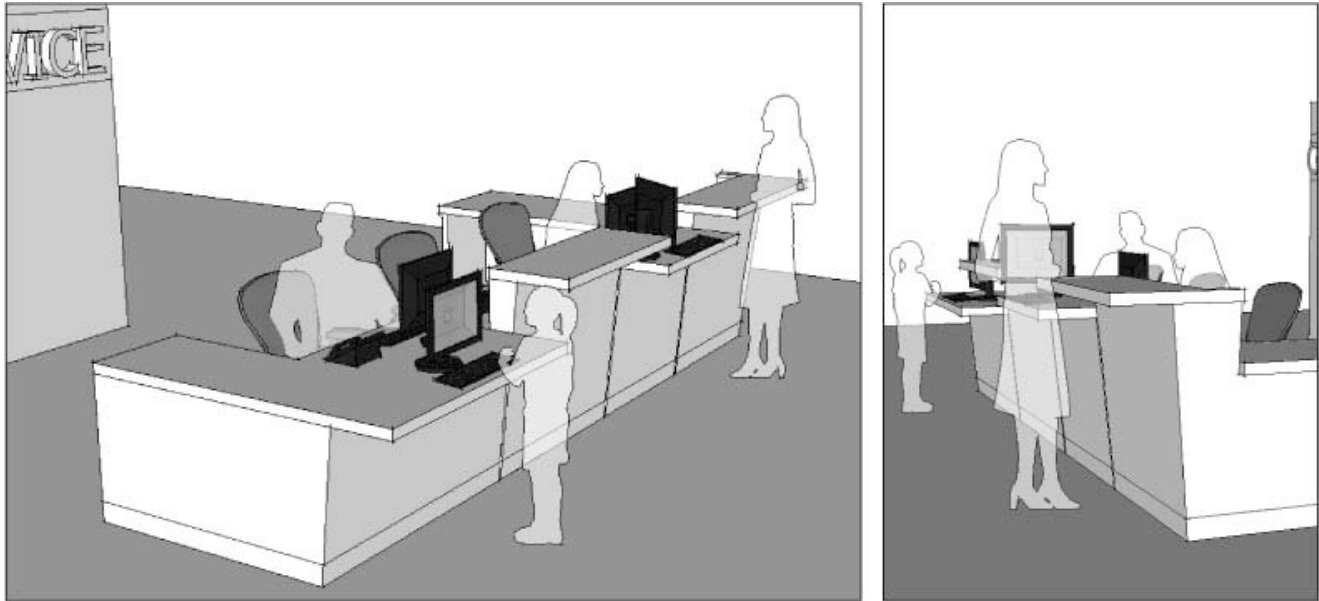
- Always
- Usually
- Sometimes
- Rarely
- Never

**B44) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a customer service desk with countertops ranging from 30 to 42 inches above the floor. The countertops extend outward toward the user 12 inches beyond the counter's base. Each position at the service desk provides the customer with a keyboard and text display screen to complement conventional verbal communication. Service employees are positioned to always face the customer.



**B45) If you encountered this design, how often would you have a problem OBTAINING INFORMATION OR ASSISTANCE FROM ANOTHER PERSON?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**B46) If you would like to explain your answer above, please do so in the text box below.**

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Thank you for participating in the Design Effectiveness Survey for Public Buildings.



This study is being conducted by the Center for Inclusive Design and Environmental Access (IDEA) through the Rehabilitation Engineering Research Center on Universal Design and the Built Environment (RERC-UD) with funding provided by the National Institute on Disability and Rehabilitation Research (NIDRR).



**DESIGN EFFECTIVENESS SURVEY FOR PUBLIC STREETS**

The Problematic Activities Survey for Public Streets identified activities that people find problematic. This Design Effectiveness Survey will examine how effective certain designs are in resolving selected problematic activities.

**INSTRUCTIONS:** Write the username and password that you gave when you provided Informed Consent.

**C1) What is your username?**

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**C2) What is your password?**

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INSTRUCTIONS: First you will be asked how often you typically have a problem performing an activity. Next you will be given a description and drawing of a proposed design that may improve your ability to perform that activity. Then you will be asked how often the activity would pose a problem for you if you encountered the proposed design. Mark the circle that best represents your answer to each question using the following scale:

Always (100% of the time)  
Usually (75% of the time)  
Sometimes (50% of the time)  
Rarely (25% of the time)  
Never (0% of the time)

Please pay close attention to the written descriptions for each drawing before answering the questions.

**C3) How often do you typically have a problem USING CURB RAMPS (for example: detecting their locations, traveling on their surfaces, etc.)?**

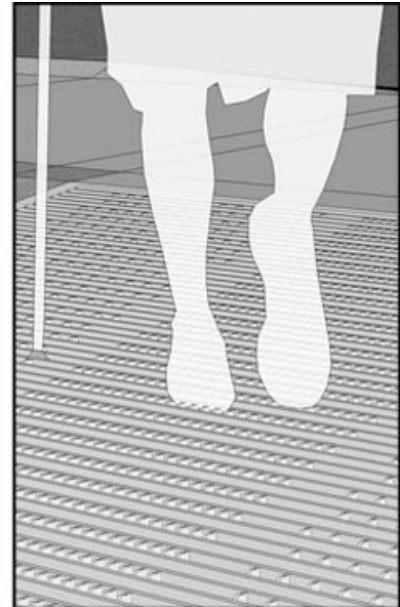
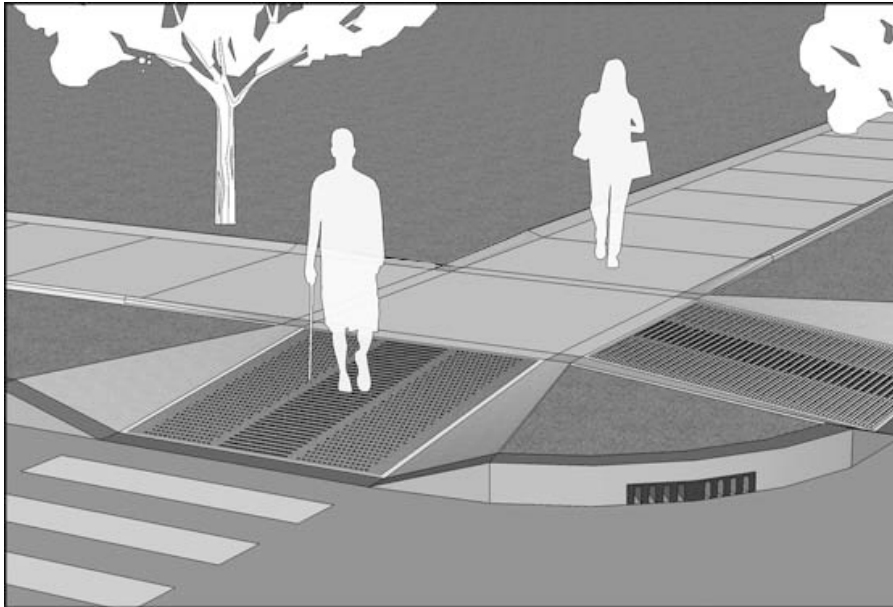
- Always
- Usually
- Sometimes
- Rarely
- Never

**C4) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of two curb ramps at an intersection. The curb ramps are located a few feet from the corner and are as wide as the crosswalk. The curb ramps have a gentle slope with smooth transitions to the crosswalks that prevent water and snow from accumulating at the bottom of the ramps. The surface of each ramp is a metal grate with small tactile cleats. Water and snow flow through the grates into a drainage system below.



**C5) If you encountered this design, how often would you have a problem USING THESE CURB RAMPS?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C6) If you would like to explain your answer above, please do so in the text box below.**

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**C7) How often do you typically have a problem USING PEDESTRIAN TRAFFIC SIGNALS (for example: detecting their locations, understanding them, having enough time to cross the street, etc.)?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C8) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a pedestrian traffic signal at an intersection. There is a 3 inch round push plate that changes the traffic signal to permit pedestrians to cross the road. The push plate is 36 inches above ground and is labeled with the street's name in both raised letters and Braille. When the pedestrian traffic signal is activated, visual and audible countdowns start to let pedestrians know how long they have to wait and how long they have to cross.



**C9) If you encountered this design, how often would you have a problem USING THIS PEDESTRIAN TRAFFIC SIGNAL?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C10) If you would like to explain your answer above, please do so in the text box below.**

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**C11) How often do you typically have a problem USING STREET CROSSWALKS (for example: detecting their locations, traveling on their surfaces, etc.)?**

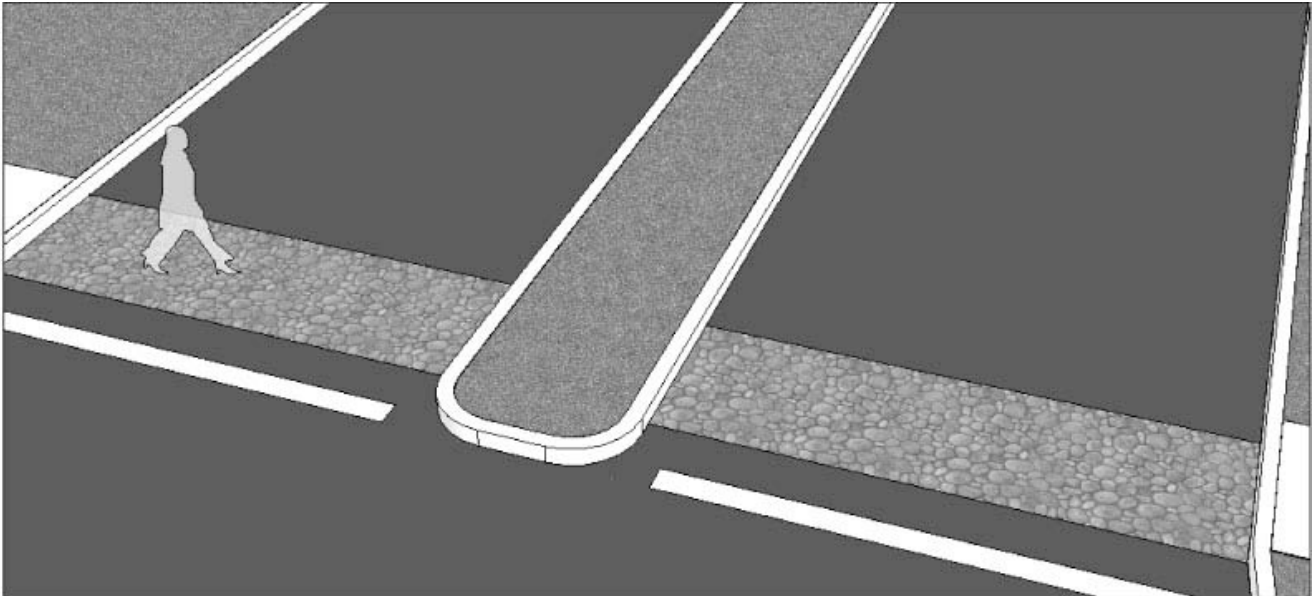
- Always
- Usually
- Sometimes
- Rarely
- Never

**C12) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of a person using a cobblestone crosswalk that passes over a curbed pedestrian island.



**C13) If you encountered this design, how often would you have a problem USING THIS STREET CROSSWALK?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C14) If you would like to explain your answer above, please do so in the text box below.**

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**C15) How often do you typically have a problem TRAVELING ON PUBLIC SIDEWALKS (for example: moving on them comfortably and safely, etc.)?**

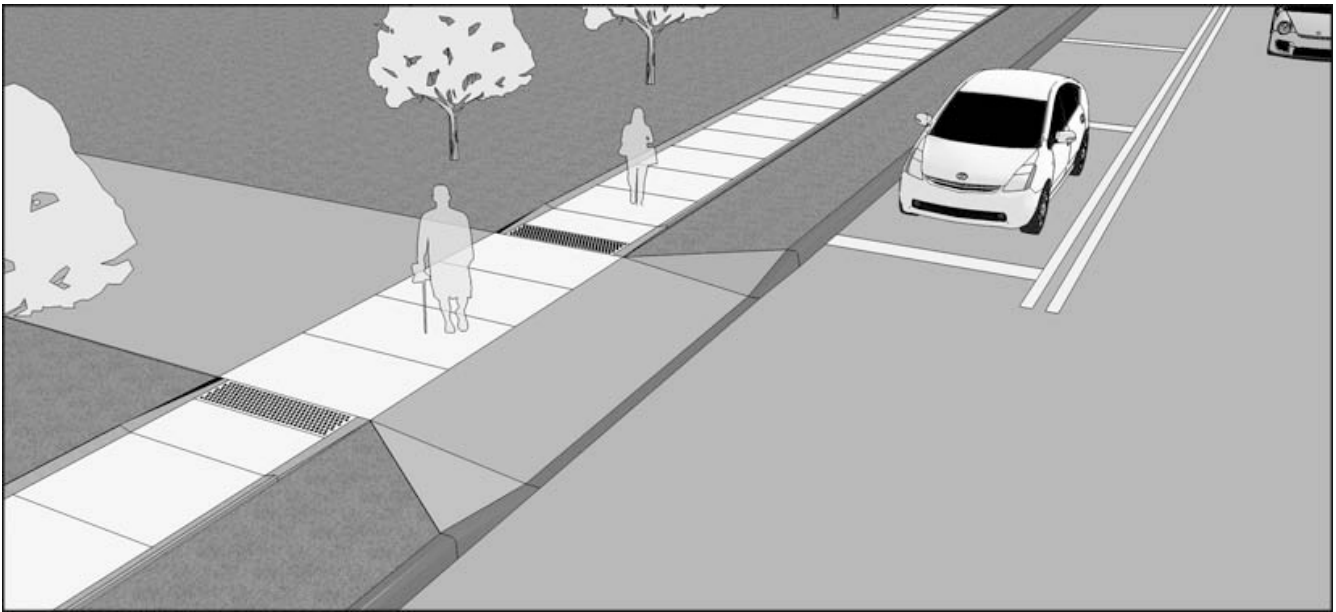
- Always
- Usually
- Sometimes
- Rarely
- Never

**C16) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a sidewalk that has a smooth and level travel surface. The sidewalk has raised and textured edges and is wide enough for two people to easily pass each other. The sidewalk has a high contrast tactile surface at the edges of an intersecting driveway and is free of ground and overhead obstructions.



**C17) If you encountered this design, how often would you have a problem TRAVELING ON THIS PUBLIC SIDEWALK?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C18) If you would like to explain your answer above, please do so in the text box below.**

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**C19) How often do you typically have a problem USING PUBLIC TELEPHONES (for example: detecting their locations, getting to them, having enough space to use them, paying for service, communicating with others, etc.)?**

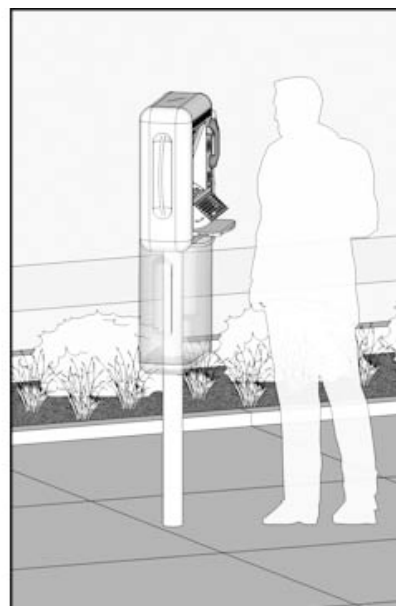
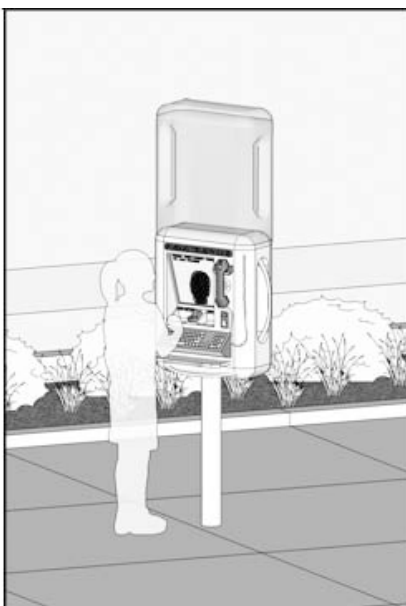
- Always
- Usually
- Sometimes
- Rarely
- Never

**C20) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a public videophone that is mounted to a pedestal which allows it to be rotated left and right as well as adjusted vertically so that it can be positioned 24 to 48 inches above the ground. The videophone has a screen that can also display incoming voice communications as text messages and an adjustable keyboard for sending text messages. It also has a pull-out shelf located below the keyboard. The videophone accepts credit and debit cards as well as coin payments. The standard coin deposit and return have been changed to shallow bowls below the screen. A card reader is located between the coin drop and coin return. This videophone has a handheld receiver with adjustable volume, a headphone jack, and a speakerphone.



**C21) If you encountered this design, how often would you have a problem USING THIS PUBLIC TELEPHONE?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C22) If you would like to explain your answer above, please do so in the text box below.**

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**C23) How often do you typically have a problem USING PARKING AREAS (for example: detecting their locations, getting vehicles in or out of parking spaces, getting into or out of vehicles, etc.)?**

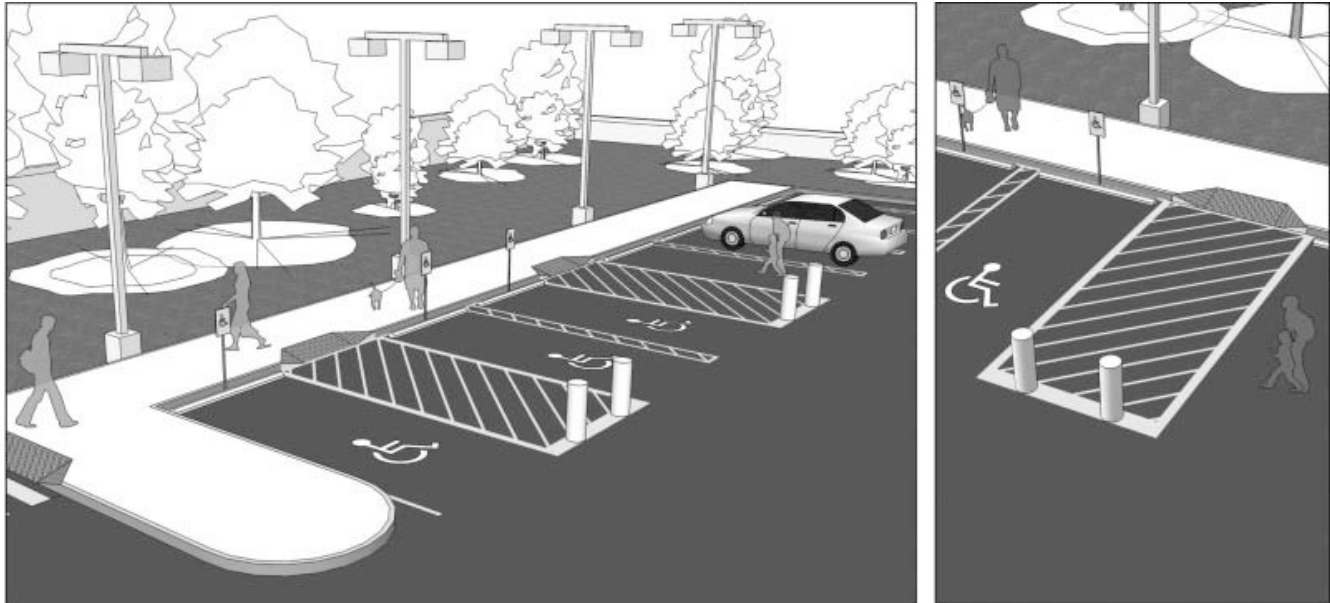
- Always
- Usually
- Sometimes
- Rarely
- Never

**C24) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a parking lot with standard size parking spaces. Between all standard parking spaces there are two yellow lines painted on the ground that provide a 12 inch separation between parking spaces. There are parking spaces for vehicles equipped with lifts that have adjacent access aisles. Bollards are located at the ends of these access aisles to block vehicles from parking there but allow pedestrians to pass through.



**C25) If you encountered this design, how often would you have a problem USING THIS PARKING AREA?**

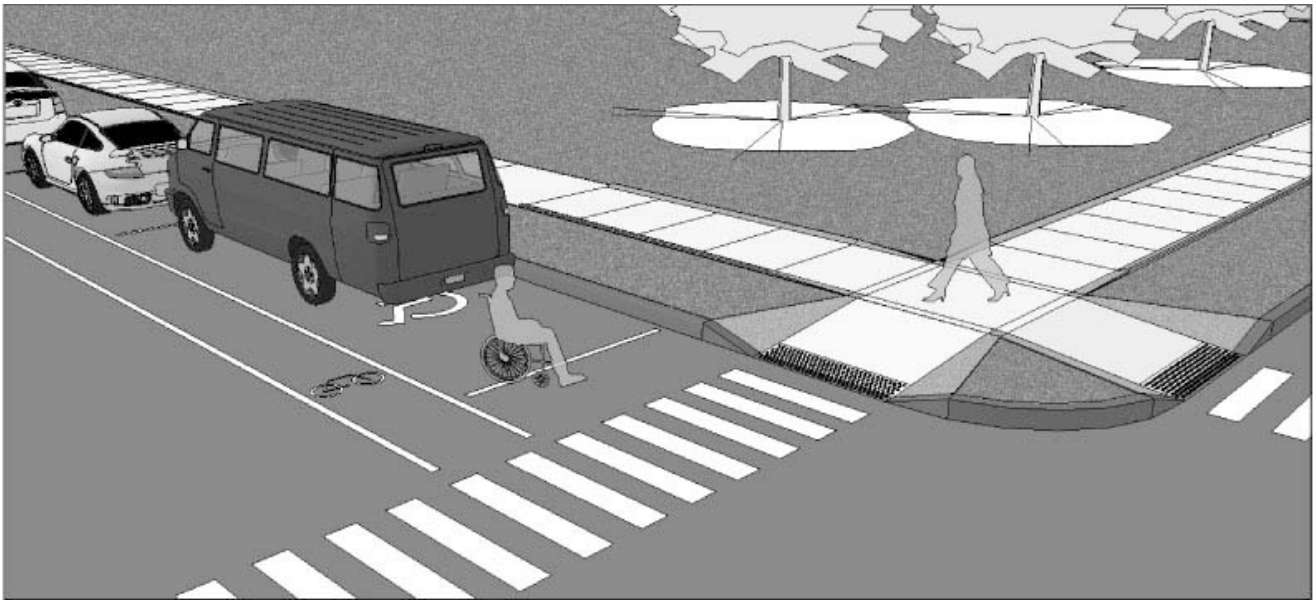
- Always
- Usually
- Sometimes
- Rarely
- Never

**C26) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of people using curb side parking spaces that are parallel to the adjacent sidewalk. Accessible parking spaces that are 50% longer than usual are located at both ends of the block and near corner curb ramps. There is a 36 inch wide bike path located between the parking spaces and the street that also functions as an access aisle.



**C27) If you encountered this design, how often would you have a problem USING THIS PARKING AREA?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C28) If you would like to explain your answer above, please do so in the text box below.**

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**C29) How often do you typically have a problem USING STREET SIGNS (for example: detecting their locations, understanding them, etc.)?**

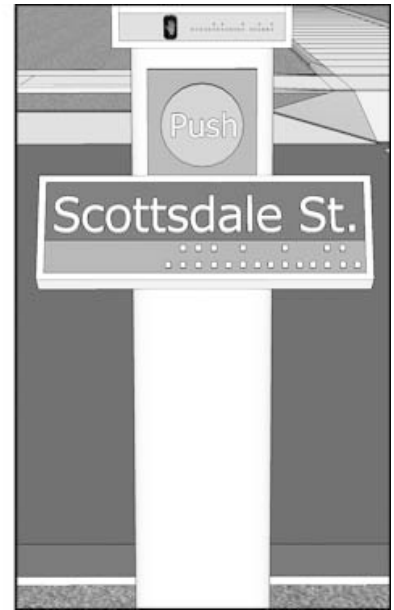
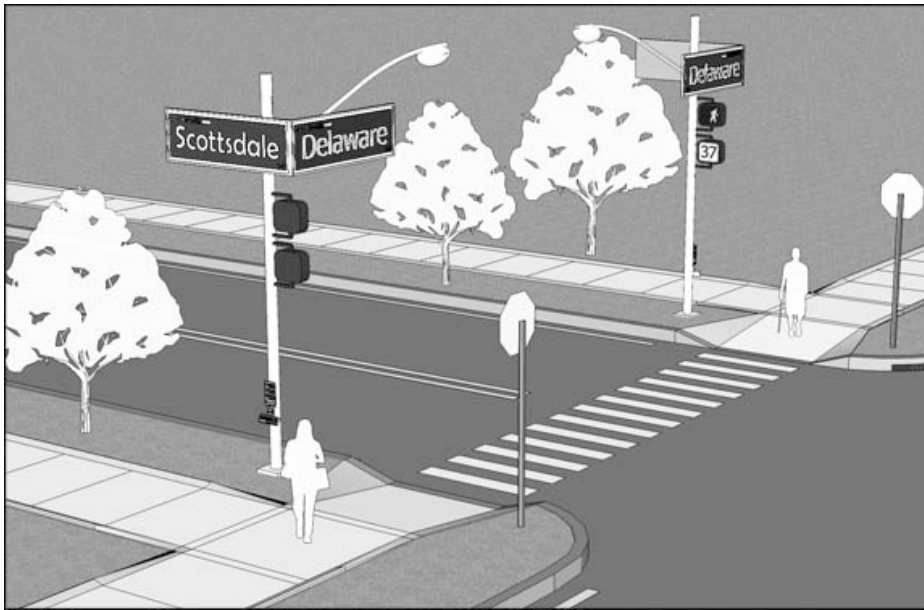
- Always
- Usually
- Sometimes
- Rarely
- Never

**C30) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using an overhead, illuminated, large text street sign mounted on a pole. These signs are located near a street intersection. The overhead sign has a smaller sign mounted on the pole 36 inches above the ground that provides the same information in raised letters and Braille.



**C31) If you encountered this design, how often would you have a problem USING THESE STREET SIGNS?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C32) If you would like to explain your answer above, please do so in the text box below.**

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**C33) How often do you typically have a problem USING MAPS (for example: detecting their locations, understanding them, etc.)?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C34) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a tactile map on a downtown street corner that provides both audio and text displays. This map is mounted at a slight vertical incline, on a shelf 32 inches above the ground and along the path of travel. The map employs raised lines, text, Braille and symbols to identify where you are, landmarks, etc. When a portion of the map is touched, information is displayed in both audio and text formats from speakers and a digital display along the bottom edge of the map.



**C35) If you encountered this design, how often would you have a problem USING THIS MAP?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C36) If you would like to explain your answer above, please do so in the text box below.**

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**C37) How often do you typically have a problem USING PUBLIC SEATING/RESTING AREAS (for example: detecting their locations, getting to them, having enough space to use them, etc.)?**

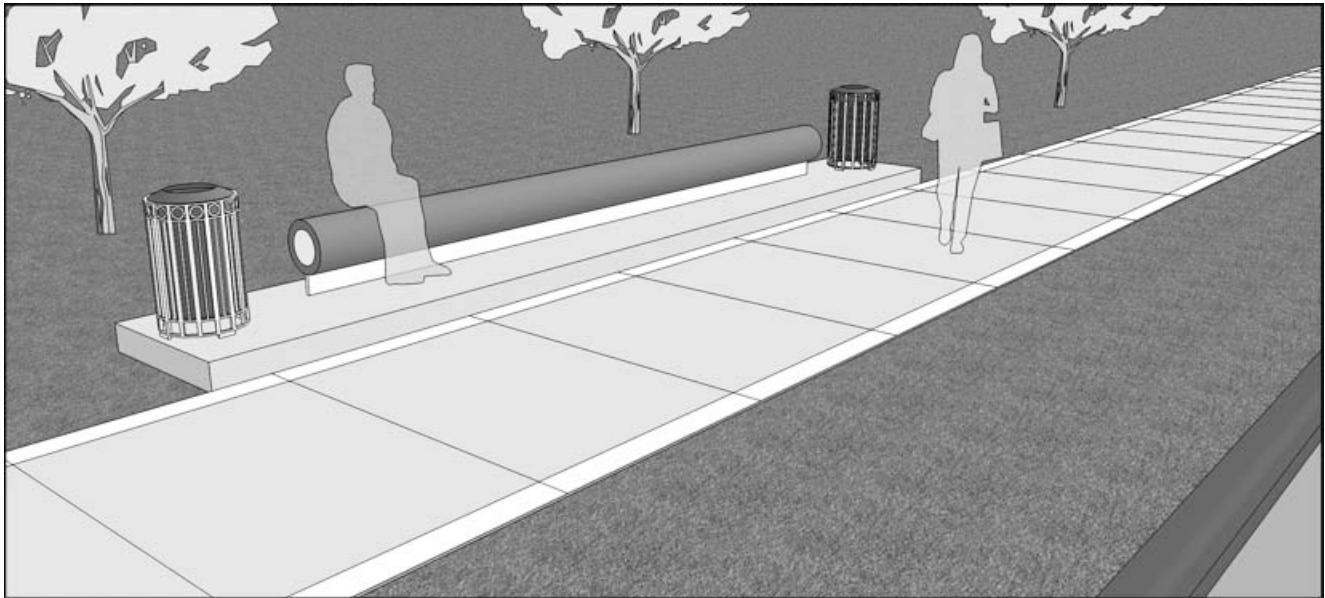
- Always
- Usually
- Sometimes
- Rarely
- Never

**C38) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of a seating and resting area on an elevated concrete pad adjacent to a sidewalk. The bench seating has a curved seating surface 16 inch above the ground and provides neither backs nor armrests. There is a trash receptacle at both ends of the bench.



**C39) If you encountered this design, how often would you have a problem USING THIS PUBLIC SEATING/RESTING AREA?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C40) If you would like to explain your answer above, please do so in the text box below.**

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**C41) How often do you typically have a problem USING TRANSIT STOPS (for example: detecting their locations, understanding information at them, having enough space to use them, transferring to or from transit vehicles, etc.)?**

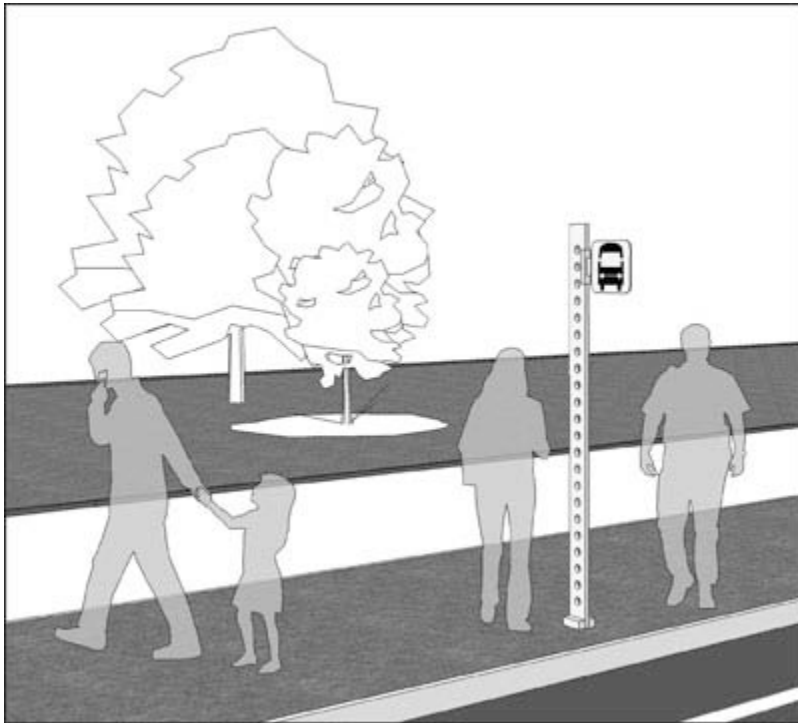
- Always
- Usually
- Sometimes
- Rarely
- Never

**C42) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of people using a transit stop. This bus stop is identified by a printed sign mounted 96 inches above the ground on a post. The sign post is located on a strip of grass between the sidewalk and the street.



**C43) If you encountered this design, how often would you have a problem USING THIS TRANSIT STOP?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**C44) If you would like to explain your answer above, please do so in the text box below.**

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Thank you for participating in the Design Effectiveness Survey for Public Streets.



This study is being conducted by the Center for Inclusive Design and Environmental Access (IDEA) through the Rehabilitation Engineering Research Center on Universal Design and the Built Environment (RERC-UD) with funding provided by the National Institute on Disability and Rehabilitation Research (NIDRR).



**DESIGN EFFECTIVENESS SURVEY FOR RESIDENTIAL ENVIRONMENTS**

The Problematic Activities Survey for Residential Environments identified activities that people find problematic. This Design Effectiveness Survey will examine how effective certain designs are in resolving selected problematic activities.

**INSTRUCTIONS:** Write the username and password that you gave when you provided Informed Consent.

**D1) What is your username?**

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**D2) What is your password?**

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INSTRUCTIONS: First you will be asked how often you typically have a problem performing an activity. Next you will be given a description and drawing of a proposed design that may improve your ability to perform that activity. Then you will be asked how often the activity would pose a problem for you if you encountered the proposed design. Mark circle that best represents your answer to each question using the following scale:

Always (100% of the time)  
Usually (75% of the time)  
Sometimes (50% of the time)  
Rarely (25% of the time)  
Never (0% of the time)

Please pay close attention to the written descriptions for each drawing before answering the questions.

**D3) How often do you typically have a problem USING ENTRANCES (for example: detecting their locations, getting to them, opening them, passing through them, closing them, etc.)?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D4) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a well lighted entrance to a house. This front entrance is covered by the canopy and is at the same grade as the sidewalk. The doorway is 36 inches wide but can be widened another 18 inches by unlatching a side panel that includes a window to the right of the door. This light weight door has a smooth threshold, lever handles and opens into the house.



**D5) If you encountered this design, how often would you have a problem USING THIS ENTRANCE?**

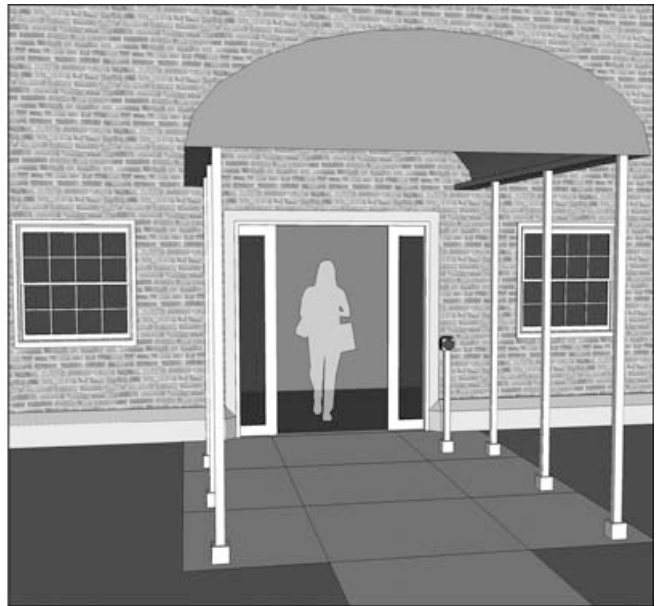
- Always
- Usually
- Sometimes
- Rarely
- Never

**D6) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using a well lighted entrance to an apartment building. The entrance has sliding automatic doors that are activated by push plates mounted 42 inches above the ground a few feet away from the doors next to the path of travel. The entrance is at the same grade as the sidewalk and is covered by an awning.



**D7) If you encountered this design, how often would you have a problem USING THIS ENTRANCE?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D8) If you would like to explain your answer above, please do so in the text box below.**

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**D9) How often do you typically have a problem USING PATHS OF TRAVEL TO ENTRANCES (for example: coping with level changes, moving on them comfortably and safely, etc.)?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D10) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of a person using a sloped path of travel to an entrance that ends with two steps up to the front porch. The path is flush to the ground, made of flagstone stepping stones separated by sand, and curves around a flower bed.



**D11) If you encountered this design, how often would you have a problem USING THIS PATH OF TRAVEL TO AN ENTRANCE?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D12) If you would like to explain your answer above, please do so in the text box below.**

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**D13) How often do you typically have a problem USING INTERIOR DOORS (for example: detecting their locations, getting to them, opening them, passing through them, closing them, etc.)?**

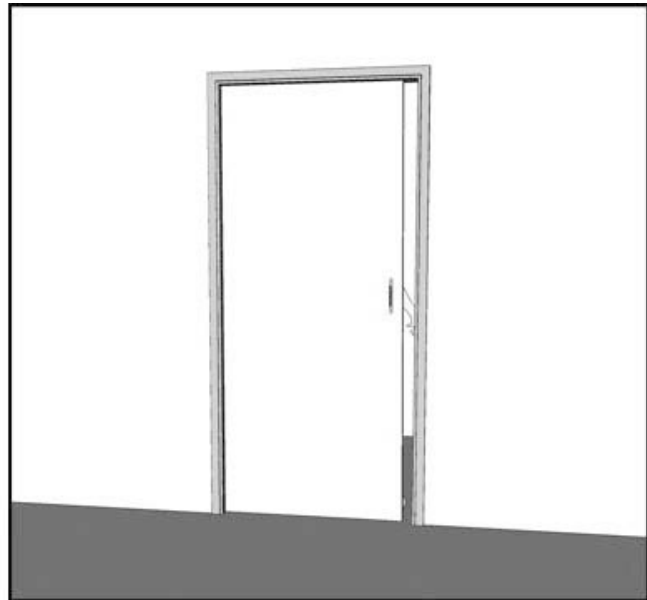
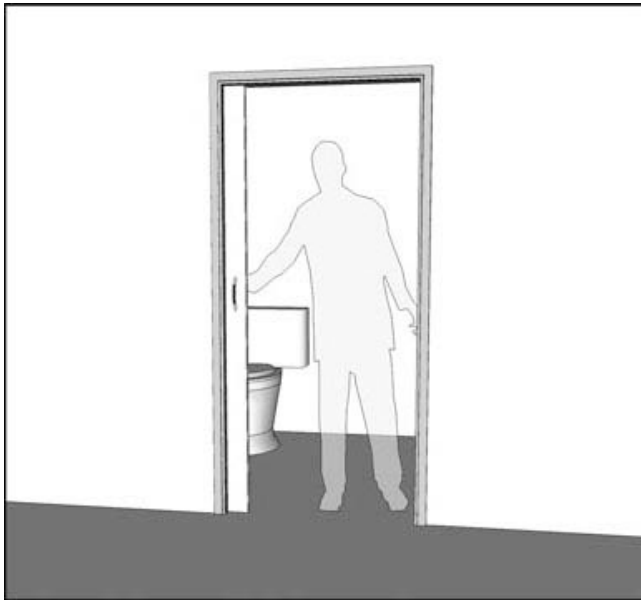
- Always
- Usually
- Sometimes
- Rarely
- Never

**D14) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using a lockable sliding door leading to a bathroom. The doorway is 36 inches wide when the sliding door is opened. The door's loop handles are always exposed because the 40 inch door only slides 36 inches into the wall pocket.



**D15) If you encountered this design, how often would you have a problem USING THIS INTERIOR DOOR?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D16) If you would like to explain your answer above, please do so in the text box below.**

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**D17) How often do you typically have a problem MOVING FROM ONE FLOOR TO ANOTHER using stairs (for example: detecting their locations, getting to them, going up/down them, using handrails, etc.)?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D18) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using an integrated stairs and elevator design in a two story house. The stairs wrap around the elevator on three sides, provide steps of uniform height, width and depth and have handrails on both sides. The elevator moves up and down on a cushion of air and is large enough to accommodate two adults.



**D19) If you encountered this design, how often would you have a problem MOVING FROM ONE FLOOR TO ANOTHER?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D20) If you would like to explain your answer above, please do so in the text box below.**

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**D21) How often do you typically have a problem USING ABOVE COUNTER KITCHEN CABINETS (for example: having enough space to use them, getting to them, storing items in them, retrieving items from them, etc.)?**

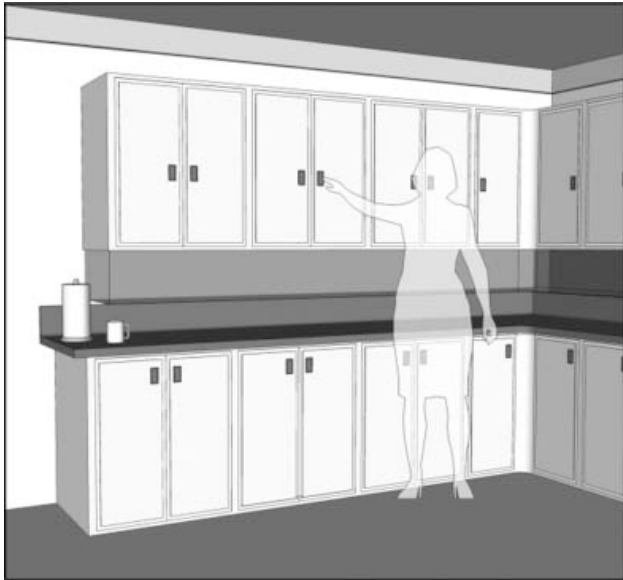
- Always
- Usually
- Sometimes
- Rarely
- Never

**D22) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using above counter kitchen cabinets. The cabinets are motorized so they can be lowered to the countertop or raised at the push of a button. The cabinet doors have push-to-open magnetic door latches and the interior shelves are well lit when the door is opened. The spacing between each cabinet's shelves can be adjusted.



**D23) If you encountered this design, how often would you have a problem USING THESE ABOVE COUNTER KITCHEN CABINETS?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D24) If you would like to explain your answer above, please do so in the text box below.**

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**D25) How often do you typically have a problem USING UNDER COUNTER KITCHEN CABINETS (for example: having enough space to use them, getting to them, storing items in them, retrieving items from them, etc.)?**

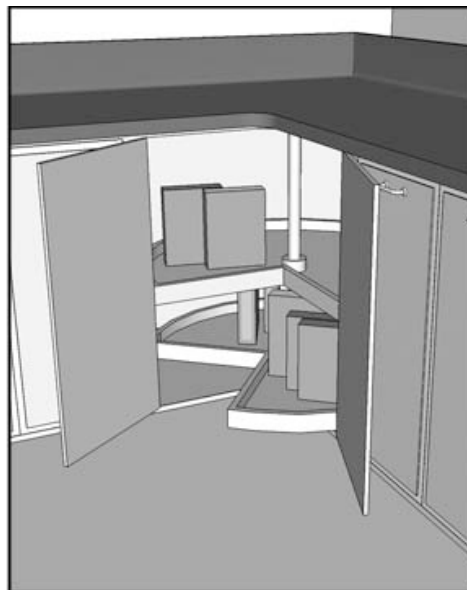
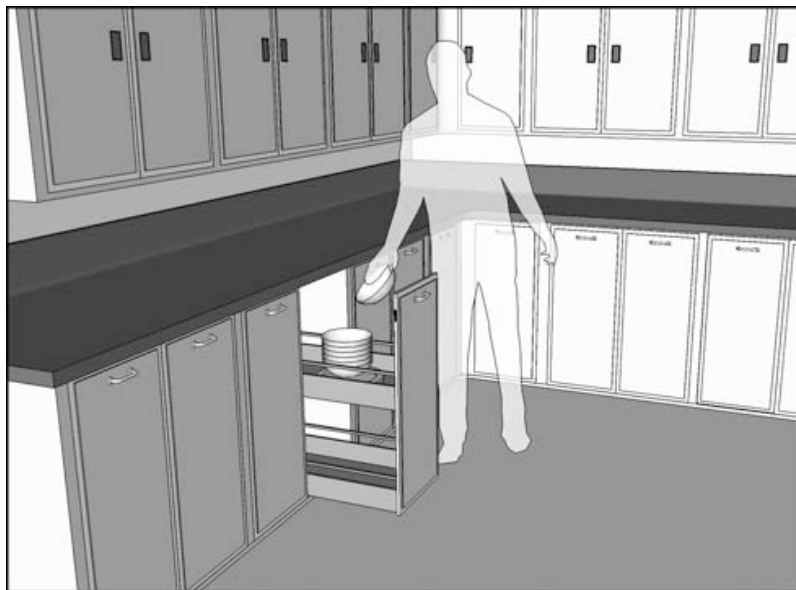
- Always
- Usually
- Sometimes
- Rarely
- Never

**D26) If you would like to explain your answer above, please do so in the text box below.**

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Below are a drawings of a person using under counter kitchen cabinets. All cabinets have individual pull out shelves. The corner cabinet has "lazy susan" spinning shelves.



**D27) If you encountered this design, how often would you have a problem USING THESE UNDER COUNTER KITCHEN CABINETS?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D28) If you would like to explain your answer above, please do so in the text box below.**

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**D29) How often do you typically have a problem USING SINK AREAS in bathrooms (for example: having enough space to use them, using mirrors, using faucets or electric outlets, drying your hands, etc.)?**

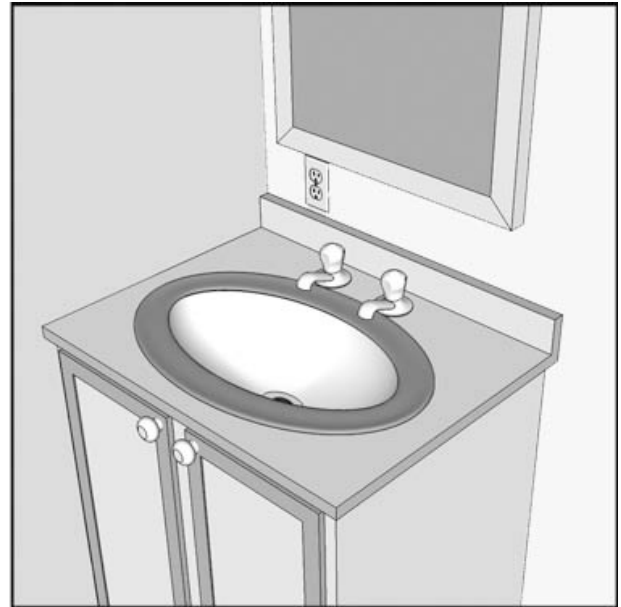
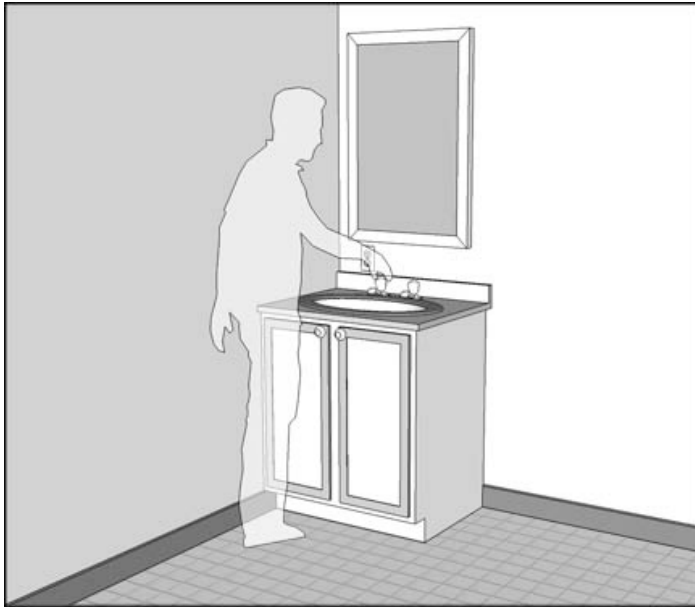
- Always
- Usually
- Sometimes
- Rarely
- Never

**D30) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using a sink area in a bathroom. This area has a sink installed over a base storage cabinet. The storage cabinet has two doors that are opened by pull knobs. The sink has two faucets, one for hot water and one for cold water. Each is controlled by a turn knob located on top of the faucet. A mirror and electrical outlets are mounted flush with the back wall above the sink.



**D31) If you encountered this design, how often would you have a problem USING THIS SINK AREA?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D32) If you would like to explain your answer above, please do so in the text box below.**

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**D33) How often do you typically have a problem USING BATHTUBS (for example: having enough space to use them, getting into or out of them, using faucets, etc.)**

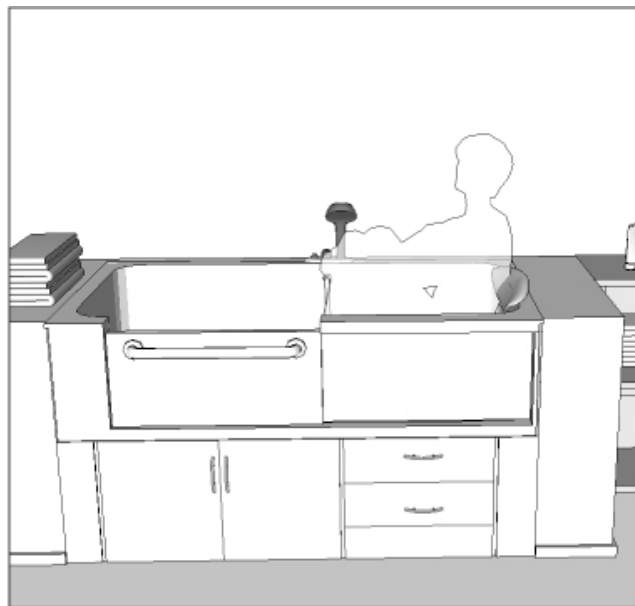
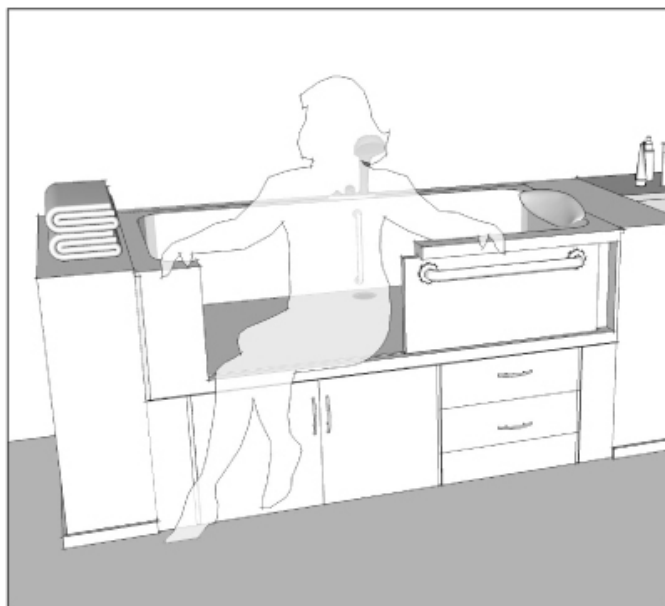
- Always
- Usually
- Sometimes
- Rarely
- Never

**D34) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of a person using an elevated, full size bathtub with a sliding side door that the user enters by sitting down and sliding in. Lever handle controls, a retractable handheld sprayer and a faucet are mounted atop the wall side of the tub close to the backrest. Grab bars are mounted both inside and outside of the bathtub for use while entering and exiting.



**D35) If you encountered this design, how often would you have a problem USING THIS BATHTUB?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D36) If you would like to explain your answer above, please do so in the text box below.**

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**D37) How often do you typically have a problem USING SHOWERS (for example: having enough space to use them, getting into or out of them, using faucets or shower heads, etc.)?**

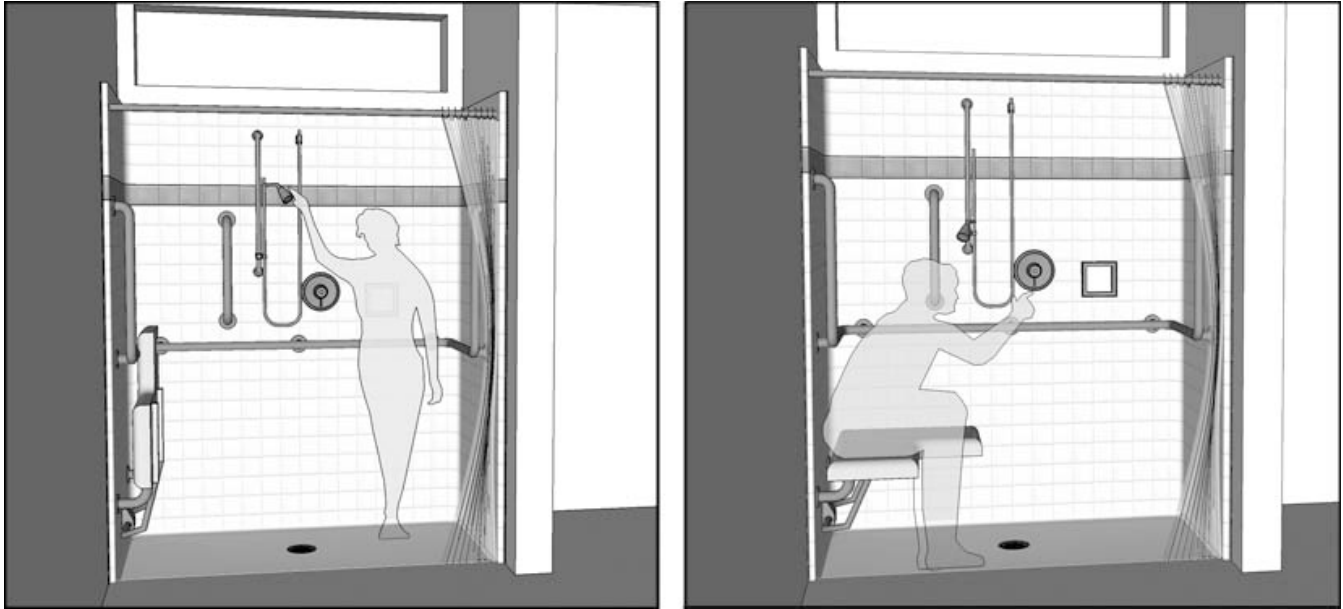
- Always
- Usually
- Sometimes
- Rarely
- Never

**D38) If you would like to explain your answer above, please do so in the text box below.**

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Below are drawings of people using a well lighted and ventilated walk-in shower that includes a shower curtain. The lever handle controls for the shower are located on the back wall that can be reached from a flip-down bench seat. The wall-mounted showerhead can be adjusted in height and is attached to a 48 inch flexible hose for handheld use. Grab bars are mounted horizontally and vertically on the back and side walls. The no slip floor is slightly sloped toward the floor drain next to the back wall.



**D39) If you encountered this design, how often would you have a problem USING THIS SHOWER?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D40) If you would like to explain your answer above, please do so in the text box below.**

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**D41) How often do you typically have a problem USING BEDS (for example: having enough space to use them, getting into or out of them, etc.)?**

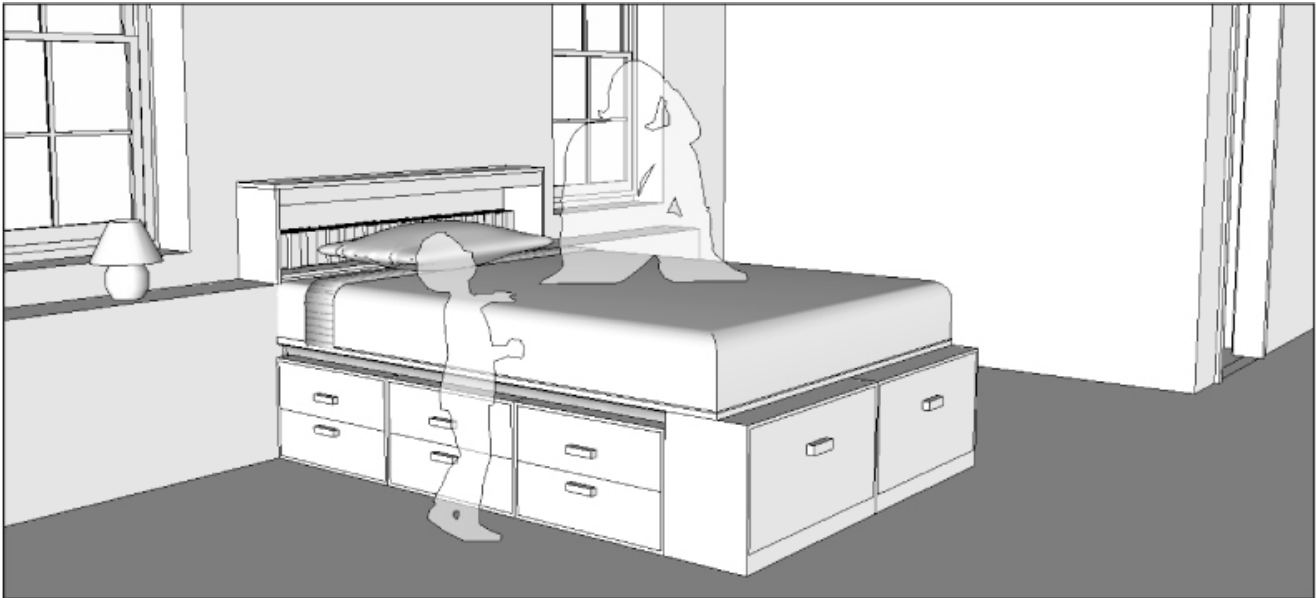
- Always
- Usually
- Sometimes
- Rarely
- Never

**D42) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of people using a platform bed with sliding pull out storage drawers underneath. The top of the conventional full size mattress is 36 inches above of the floor.



**D43) If you encountered this design, how often would you have a problem USING THIS BED?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D44) If you would like to explain your answer above, please do so in the text box below.**

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**D45) How often do you typically have a problem USING WASHERS OR DRYERS (for example: having enough space to use them, loading and unloading them, operating their controls, etc.)?**

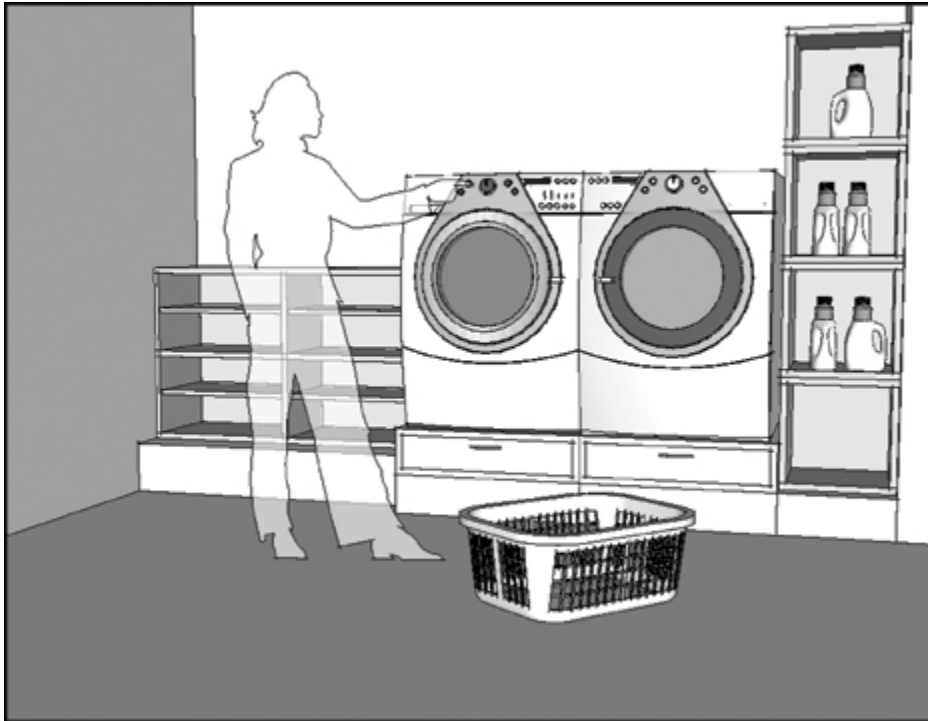
- Always
- Usually
- Sometimes
- Rarely
- Never

**D46) If you would like to explain your answer above, please do so in the text box below.**

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Below is a drawing of a person using a front loading washer and a front loading dryer that sit on top of 16 inch high storage pedestals. The glass doors on these machines are centered 36 inches above the floor and open away from each other while transferring laundry. The electronic controls for these machines are mounted on the front above the doors 42 inches above the floor and can be also operated using a handheld remote control device.



**D47) If you encountered this design, how often would you have a problem USING THIS WASHER OR DRYER?**

- Always
- Usually
- Sometimes
- Rarely
- Never

**D48) If you would like to explain your answer above, please do so in the text box below.**

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Thank you for participating in the Design Effectiveness Survey for Residential Environments.



This study is being conducted by the Center for Inclusive Design and Environmental Access (IDEA) through the Rehabilitation Engineering Research Center on Universal Design and the Built Environment (RERC-UD) with funding provided by the National Institute on Disability and Rehabilitation Research (NIDRR).