



measuring urban design qualities

an illustrated field manual



prepared for the
Active Living Research Program
of the
Robert Wood Johnson Foundation

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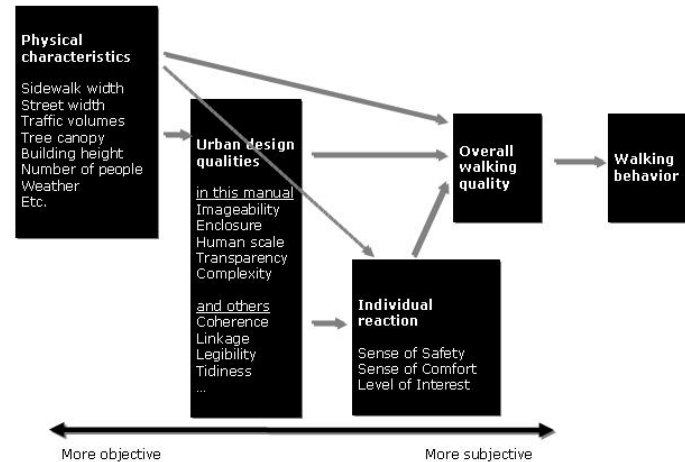
Getting Started

The purpose of this manual

This manual is the product of nearly a year and a half of research on urban design qualities related to walkability. It builds on a growing body of evidence that links the built environment to active living.

The measures used in previous studies to characterize the built environment have been mostly general qualities such as neighborhood density and street connectivity. What do these measures tell us about what it is like to walk down a street? Not much, that's why this manual is important.

Urban designers point to subtler qualities that may influence choices about active travel and active leisure time. These are sometimes referred to as urban design qualities. Urban designers presume that these qualities are important for active street life, but have little empirical evidence to back the claim. Until urban design qualities can be measured, and the propensity to walk can be related empirically to these measures, this presumption will remain untested.



The built environment and walking behavior

This manual will provide a qualitative introduction to several key urban design qualities from the urban design literature, and then will provide guidance on how to objectively measure each quality for a typical street. The urban design qualities operationalized in this manual are:

- imageability
- enclosure
- human scale
- transparency
- complexity

This by no means is an exhaustive list of urban design qualities potentially related to walkability. We considered many other qualities referenced in the

literature. We tried, unsuccessfully, to operationalize others.

Based on this research, the urban design qualities measured in this manual appear to have significant relationships to walkability and great potential to be measured objectively and reliably. For more information about urban design qualities and the research program that enabled us to measure them, you are referred to the final report for the Active Living Research project "Identifying and Measuring Urban Design Qualities Related to Walkability."

What are urban design qualities and why are they important?

How can urban design qualities influence your decision to walk? The figure on this page outlines the relationship between the built environment and walking behavior and illustrates where urban design qualities fall within the relationship. Urban design qualities depend on physical features but are distinct from them. They reflect the general way in which people **perceive** and interact with the environment.

These urban design qualities are different from qualities such as sense of comfort, sense of safety, and level of interest that reflect how an individual reacts to a place—how they assess the conditions there, given their own preferences and perspectives. Perceptions are just that, perceptions. They may produce different reactions in different people.

Physical features can be measured objectively. Perceptions may be assessed with a degree of objectivity by outside observers (though not with the objectivity of physical features). Reactions are purely subjective.

All of these factors—physical features, urban design qualities, and individual reactions— influence how an individual feels about the environment as a place to walk. By measuring these intervening variables, we can better understand the way physical features of the built environment affect walking behavior.

How to use the manual

Each urban design quality in the manual is presented with a set of instructions. All of the instructions follow the same format.

First page: get to know the urban design quality

The first page of instructions introduces you to the urban design quality.

(a) Urban design quality definition: A short and concise definition of the urban design quality is provided. This definition is based on the urban design literature and was refined with the help of an expert panel of urban designers and top professionals from related fields.

(b) Expert panel comments: Our research on urban design qualities included extensive interviews with and surveys of the expert panel. Find out what

they had to say about each quality here.

(c) Photographic examples: Two contrasting photos are shown to illustrate extreme examples of each urban design quality, as judged by the expert panel. Short descriptions are also provided pointing out the features that make each scene either high or low with respect to the quality.

Next pages: measure the urban design quality

Measuring urban design qualities involves visiting streets and being able to identify and count certain street features. You will also need to make educated estimates of other features. The pages following the introduction will outline with detailed illustrations each measurement you need to make to arrive at a value of the urban design quality.

(d) Steps and notes: The left panel for each measurement provides the ordered steps that must be followed to make the measurement. Notes are also provided to clarify steps and explain illustrations.

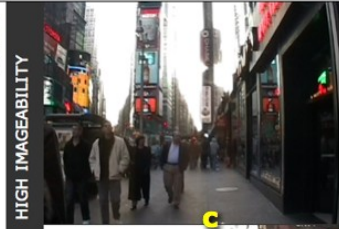
(e) Illustrations: Illustrations will help familiarize you with the concepts presented in the steps.

imageability

Imageability is the quality of a place that makes it distinct, recognizable, and memorable. A place has high imageability when specific physical elements and their arrangement capture attention, evoke feelings, and create a lasting impression.

a

Streets filled with people, many signs to draw pedestrians, and strong landmarks make Times Square in New York City a very imageable place.



c

What do the experts say?

"generic places with no character have no imageability"

"really imageable places are recognizable and memorable"

"distinct views can make an otherwise ordinary place very imageable"

"architecture that suggests importance, presence of historical buildings, and landmarks"

"is the place unique?"

b

Few pedestrians, no street activity like outdoor dining, and no features that serve as landmarks make this street hardly distinguishable from others and thus not that imageable.



HIGH IMAGEABILITY

LOW IMAGEABILITY

measuring imageability

Step 1
Walk entire length of study area

Step 2
As you walk, note the presence of courtyards, parks, or plazas on either side of the street that are accessible to you.

Step 3
Record the number of courtyards, plazas, or parks that you encountered within the study area.

Note: Be sure to count instances of parks and not the individual elements of a park. One large park occupying a whole block with many elements will still count as one instance of a park.


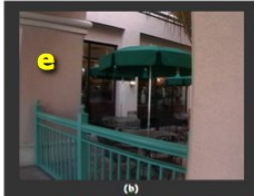

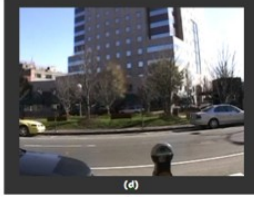
Notes:
Figures (a), (b), (c), and (d) show examples of courtyards, plazas, or parks.

(a) plaza between two buildings with public art across the street

(b) courtyard with tables and seating

(c) one plaza with flagpoles in the foreground and public art in the distance

(d) small park across the street with benches

1. count courtyards, plazas, and parks

In the back of the manual: score the urban design quality

Our research resulted in statistical models relating ratings of urban design qualities by the expert panel to our measurements of physical features. The scoring sheet at the end of the manual provides an easy way for you to summarize your field measurements and compute urban design quality scores.

(f) record measurements here: The scoring sheet lists each of the physical features you measured in the field. Record

your estimates here.
(g) apply multiplier to estimates: After recording your measurements, you will need to multiply each measurement by its corresponding multiplier and then add up the results.
(h) add the constant and compute the score: The final step in computing scores will require you to add a constant unique to each urban design quality. The constants and multipliers come from statistical models we estimated in our research, and place urban design qualities on the same 1 to 5 scales used in our surveys of the expert panel.

measuring urban design qualities scoring sheet		auditor	
street		date & time	
step	recorded value	multiplier	(multiplier) x (recorded value)
imageability			
1. number of courtyards, plazas, and parks (both sides, within study area)		0.41	
2. number of major landscape features (both sides, beyond study area)		0.72	
3. proportion historic building frontage (both sides, within study area)		0.97	
4. number of buildings with identifiers (both sides, within study area)	f	0.11	
5. number of buildings with non-rectangular shapes (both sides, within study area)		0.6	
6. presence of outdoor dining (your side, within study area)		0.64	
7. number of people (your side, within study area)		0.02	
8. noise level (both sides, within study area)		-0.18	
add constant			+2.44
imageability score			h
enclosure			
1. number of long sight lines (both sides, beyond study area)		-0.31	
2a. proportion street wall (your side, beyond study area)		0.72	
2b. proportion street wall (opposite side, beyond study area)		0.94	
3a. proportion sky (ahead, beyond study area)		-1.42	
3b. proportion sky (across, beyond study area)		-2.19	
add constant			+2.57
enclosure score			
human scale			
1. number of long sight lines (both sides, beyond study area)		-0.74	
2. proportion windows at street level (your side, within study area)		1.10	
3. average building heights (your side, within study area)		-0.003	
4. number of small planters (your side, within study area)		0.05	
5. number of pieces of street furniture and other street items (your side, within study area)		0.04	
add constant			+2.61
human scale score			
transparency			
1. proportion windows at street level (your side, within study area)		1.22	

Before you go out measuring...

Before you go out to your favorite street and begin counting windows and doors, keep the following helpful hints in mind.

Things to bring along

This field manual will provide you with all necessary guidance to measure urban design qualities, so make sure to **bring the manual with you** when you go out. You may find the following additional items useful too.

Make copies of the scoring sheet to take out in the field. A **clipboard** will probably also be useful to keep scoring sheets together and to give you a writing surface. **Chalk** can also be useful for marking the bounds of your study area.

What is your study area?

Urban design qualities are observed at a human scale. They are measured over the length of an average city block or a portion of a block you might find in the suburbs. Although you can apply this manual to almost any street, our methodology has been tested and refined on urban streets, and therefore works best on urban streets that have at

least some commercial uses. A street with soaring skyscrapers in downtown works with this manual and so does a street going through a small village center with a coffee shop and drug store.

After you pick the street you want to assess, you then need to establish the boundaries of the study area. Typically **your study area will be one block in length**. In some cases, if you are assessing a **long block**, walk about **120 paces**. This is about 300 feet or the size of a small city block. In these cases, where you will not walk the entire block, marking off 120 paces with a piece of chalk will help. Remember, you will be walking the study area several times to make measurements.

Knowing what to count

Some urban design qualities are related primarily to what is in your immediate surroundings while other urban design qualities depend more on the entire environment you can see. Consequently, for some measurements, you will be instructed to count elements only on the same side of the street, and for others, you will count on both sides of the street. Sometimes you will be instructed to count only elements that are physically located within the study area, and sometimes

elements that you can see from the study area.

Pay close attention to the specific instructions for each element. Instructions and scoring sheets will indicate which sides of the street you should measure (**your side or both sides**) and also whether you should consider objects beyond the space you walked (**within study area or beyond study area**). Consider “within your study area” to be anything within the area you walked or anything that is no more than **50 feet** ahead of the area you walked. Consider “beyond your study area” to be anything that is no more than **500 feet** from the area you walked.

But I don't know what or how to measure!

The purpose of this manual is to make measuring urban design qualities a simple task. The illustrations throughout will help you to make rough measurements, which is all that is needed. Our research has shown that simple observations like the ones you will be making are sufficient to make valid and reliable assessments of urban design qualities. Do not become frustrated if you fail to count an object or cannot measure the exact dimensions of a feature. Just make sure your estimates seem **reasonable and consistent with the other measurements you make!**



imageability

Imageability is the quality of a place that makes it distinct, recognizable, and memorable. A place has high imageability when specific physical elements and their arrangement capture attention, evoke feelings, and create a lasting impression.

What do the experts say?

“generic places with no character have no imageability”

“really imageable places are recognizable and memorable”

“distinct views can make an otherwise ordinary place very imageable”

“architecture that suggests importance, presence of historical buildings, and landmarks” are imageable

ask yourself “is the place unique?”

Streets filled with people, many signs, and strong landmarks make Times Square in New York City a very imageable place.

HIGH IMAGEABILITY



Few pedestrians, no street activity like outdoor dining, and no features that serve as landmarks make this street hardly distinguishable from others and thus not imageable.

LOW IMAGEABILITY



measuring imageability

1. number of courtyards, plazas, and parks both sides, within study area

1. count courtyards, plazas, and parks

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps), starting at the end of the block that puts buildings on your right.

Step 2

As you walk, note the presence of courtyards, parks, or plazas on either side of the street that are accessible to you.

Step 3

Record the number of courtyards, plazas, or parks that you encountered within the study area.

Note: Be sure to count instances of parks and not the individual elements of a park. One large park occupying a whole block with many elements will still count as one instance of a park.

Note:

Figures (a), (b), (c), and (d) show examples of courtyards, plazas, or parks.

(a) plaza between two buildings with public art across the street

(b) courtyard with tables and seating

(c) plaza with flagpoles in the foreground and public art in the distance

(d) small park across the street with benches



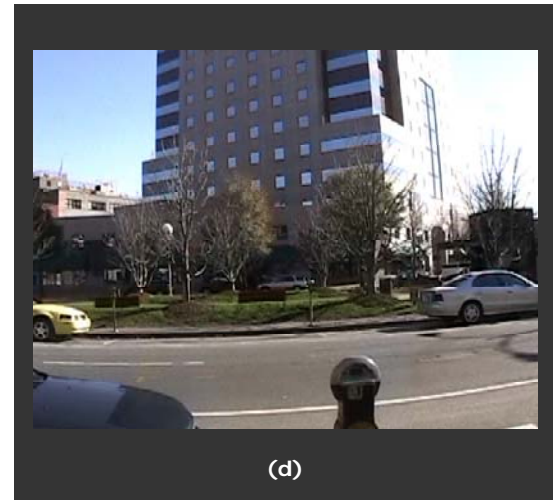
(a)



(b)



(c)



(d)

measuring imageability

2. number of major landscape features both sides, beyond study area

2. count major landscape features

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk note if there are any prominent landscape views such as bodies of water, or man-made features that incorporate the surrounding natural environment.

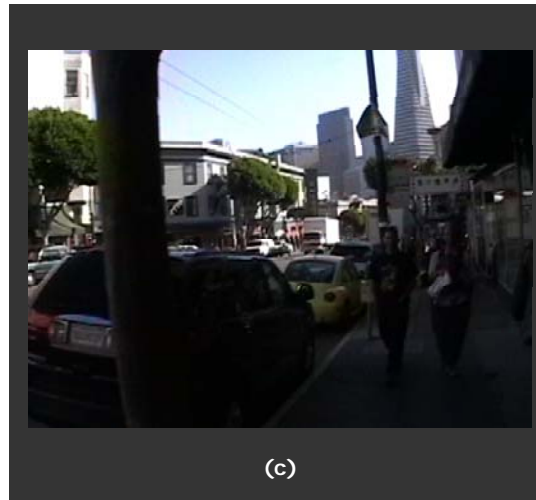
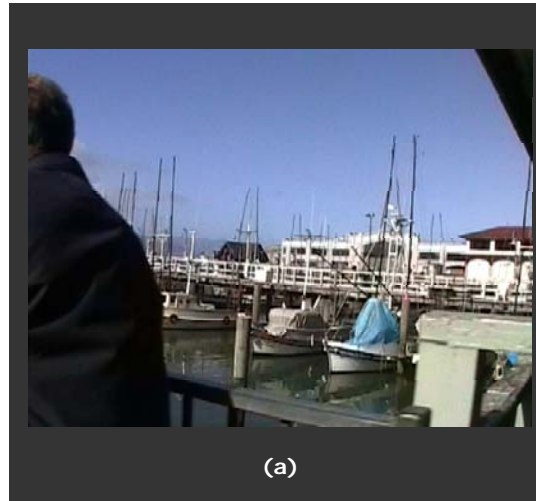
Note: A major landscape feature serves as a natural landmark. Therefore, when counting, consider whether the view is prominent and/or well known, such that it could be used as a reference point for orientation or for providing directions to visitors.

Step 3

Record the number of distinct landscape features you encountered within the study area.

Note:

Figures (a) and (b) show examples of what can be considered major landscape features on the street, and (c) shows an example of what cannot. Use the figures to familiarize yourself with the scope of features that may count as major landscape features.



(a) marina - YES

A marina is a man-made feature that incorporates a natural landscape feature (water) and therefore would count as a major landscape feature.

(b) harbor - YES

The harbor shown although mostly developed still incorporates the natural environment and would count as a major landscape feature.

(c) skyline - NO

A view of a city skyline may be quite prominent. However since it does not incorporate natural elements, it would not count as a major landscape feature.

measuring imageability

3. estimate proportion historic buildings

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note the approximate age of buildings fronting along both sides of the street.

Step 3

For the portion of the street with buildings fronting the sidewalk, estimate the proportion that is fronted by historic buildings—on both sides of the street. Record your estimate as a decimal. Use increments of tenths (.10).

Note:

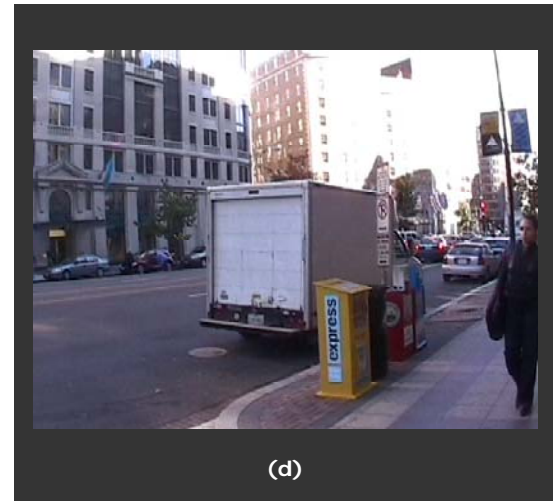
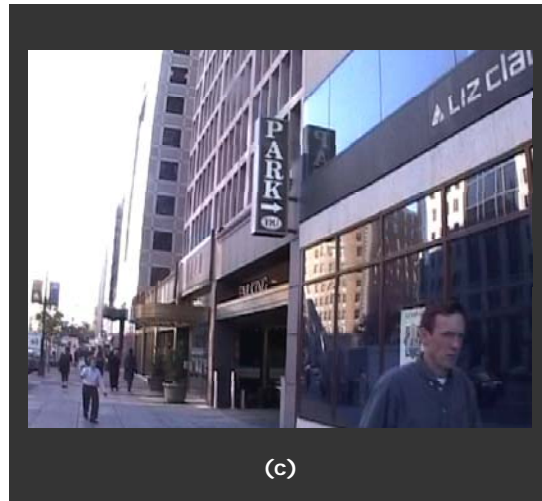
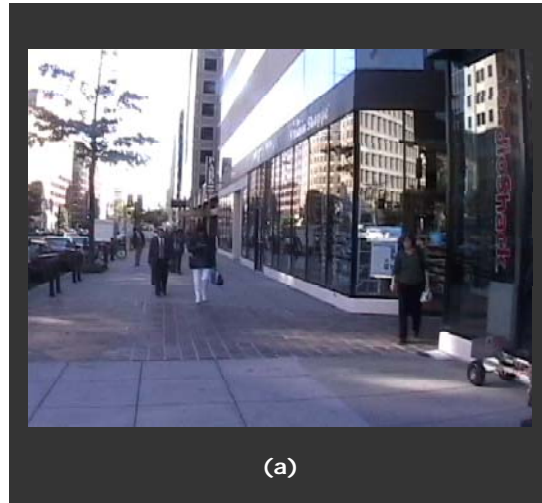
Architecture that can be determined to have originated before World War II will be considered historic.

Figures (a), (b), (c), and (d) show a progression of views down both sides of one street.

(a) and (c): The right side of the street is entirely made up of modern glass and concrete structures.

(b) and (d): The left side of the street is entirely occupied with older buildings made of brick and stone.

This street has approximately 50% of its building frontage, on the two sides, occupied by historic structures.



3. proportion historic building frontage both sides, within study area

measuring imageability

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note buildings whose uses can be identified by building features.

Note:

For example, a church can be identified by a steeple. Stores can be identified by signs that can be easily read.

Step 3

Record the number of buildings that have identifying features within the study area. If a single building appears to have several occupants at street level, only count the building as identifiable if a majority of the occupants can be determined by building features.

Note:

Figures (a), (b), and (c) show different examples of buildings with identifiers.



4. number of buildings with identifiers both sides, within study area

(a) large building with several occupants with identifiable uses

The building in this figure will count as one building with identifiers since it is one building with many uses that can be identified by business signs.

(b) three buildings with identifiers

The three buildings across the street are all identified by storefront signs that can be read.

(c) church steeple in distance

The steeple in the distance indicates the presence of a church therefore the church can count as a building with an identifier if it is within the study area.

measuring imageability

5. number of buildings with non-rectangular shapes both sides, within study area

5. count buildings with non-rectangular shapes

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note buildings on either side of the street whose shape is not a simple rectangular box. Count buildings that are within the study area or that make up more than 20% of your field of vision.

Note: Consider a non-rectangular building to be any building that, from any angle, is not a simple rectangle. A building with a basically rectangular shape but with a pitched roof or ornamental trim will be considered non-rectangular. Use the figures to familiarize yourself with the concept.

Step 3

Record the number of buildings that have non-rectangular shapes.

(a) 1 non-rectangular building

The building trim on the right-most building deviates enough from an otherwise rectangular shape to be considered non-rectangular.

(b) 2 non-rectangular buildings

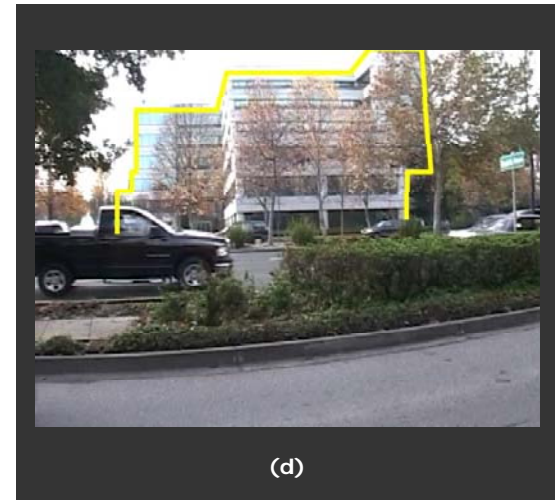
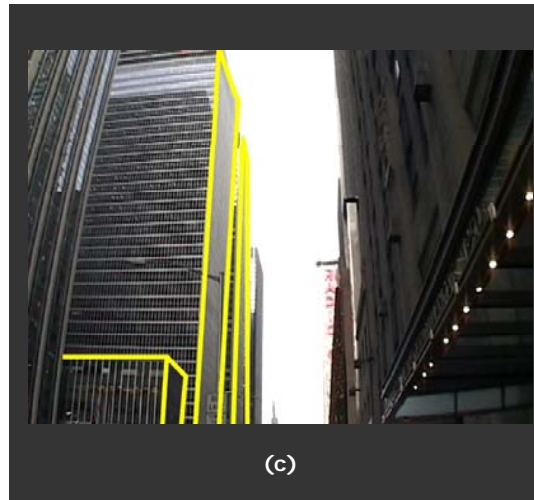
The pitched roofs and chimneys make the two right-most buildings non-rectangular.

(c) 3 rectangular buildings

These modern skyscrapers all have simple rectangular shapes.

(d) 1 non-rectangular building

While the office building shown does not have any curved edges and is comprised of all right angles, it does not have a simple box shape.



measuring imageability

6. presence of outdoor dining your side, within study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street instances where outdoor dining is provided.

Note:

Consider a place as having outdoor dining even if there are no people currently utilizing it. However, if a place has outdoor dining but appears to be closed (folded chairs and umbrellas), do not consider it an instance of outdoor dining. The outdoor dining must appear to be open to be counted.

Step 3

Record the presence of outdoor dining—1 for yes, 0 for no.

Note:

Figures (a), (b), (c), and (d) show examples of what can and cannot be considered outdoor dining.

(a) open outdoor dining with no patrons - YES

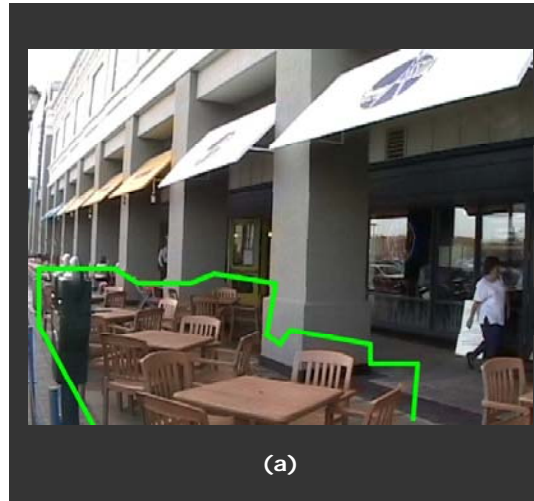
Although the tables are not being utilized, this place would be considered outdoor dining.

(b) closed outdoor dining - NO

The outdoor dining shown here has closed umbrellas and chairs on top of tables. This would not be considered outdoor dining.

(c) and (d) open outdoor dining with patrons - YES

These two places have outdoor dining with patrons. Count each even though one is partially enclosed.



(a)



(b)



(c)



(d)

measuring imageability

7. number of people: your side, within study area

8. noise level: both sides, within study area

7. count people

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street when you encounter walking, standing, or sitting pedestrians; do not include people sitting at outdoor eating areas.

Note: Count pedestrians that you pass and any pedestrian that is no more than 50 feet ahead of you.

Step 3

Record the number of walking, standing, or sitting pedestrians you encountered on one walk through the study area.

Step 4

Repeat steps 1-3 another 3 times recording the number of people each time.

Step 5

Compute the average number of people encountered from the four instances of walking the study area.

8. estimate noise level

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note the amount of noise made by traffic, pedestrians, and any other ambient sources.

Step 3

Rate the noise level using the following scale:

(1) very quiet

(2) quiet

(3) normal

(4) loud

(5) very loud

Step 4

Repeat steps 1-3 another 3 times making a noise level rating each time.

Step 5

Compute the average noise level from the four instances of walking the study area.

enclosure

Enclosure refers to the degree to which streets and other public spaces are visually defined by buildings, walls, trees, and other elements. Spaces where the height of vertical elements is proportionally related to the width of the space between them have a room-like quality.

What do the experts say?

“Different building heights and levels don’t provide the same enclosure as continuous edges”

“old trees with large canopies can make otherwise low enclosed places more enclosed”

“is the space well defined?”

A continuous street wall on both sides of the street gives this scene high enclosure.

The buildings and uniform street trees create a room-like effect by limiting long sight lines and views of open sky.

HIGH ENCLOSURE



This scene has low enclosure because the arrangement of buildings does not provide a well-defined street wall. The scene feels open, with the ability to see far into the distance with large amounts of open sky.

LOW ENCLOSURE



measuring enclosure

1. number of long sight lines both sides, beyond study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

While walking, can you see far in front of you? Record a 1 if at any time during the walk you were able to see far in front.

Note:

Consider far ahead being approximately 1000 feet, or three short city blocks. Refer to the examples on the right to help you assess long sight lines.

Step 3

While walking, can you see far to your right? Record a 1 if at any time during the walk you were able to see far to your right. Do not count views down cross-streets when you are at either end of the block.

Step 4

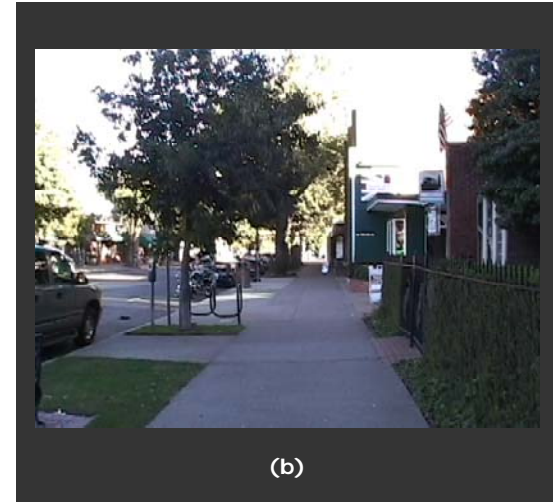
While walking, can you see far to your left? Record a 1 if at any time during the walk you were able to see far to your left. Do not count views down cross-streets when you are at either end of the block.

Step 5

Record a 0 otherwise for steps 2-4.

Step 6

Sum your scores from the previous steps. You should have a value between 0 and 3.



(a) long sight line down street - 1

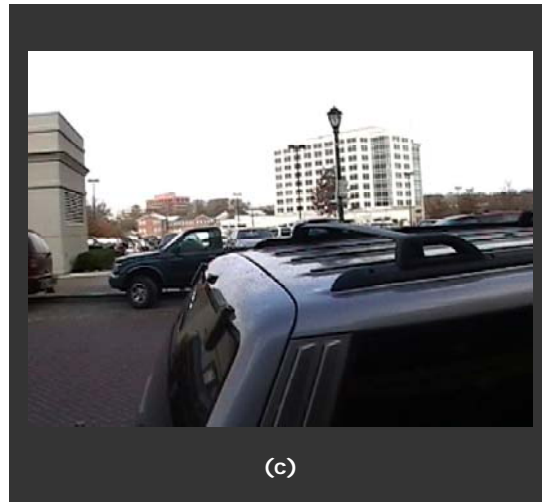
The lack of an enclosed environment where this shot was taken (low rise buildings, open plaza on right, wide avenue) allows you to see far ahead.

(b) sight lines blocked - 0

The regular spacing of mature street trees blocks your view of the block ahead.

(c) long sight line across street - 1

The ill-defined street wall across the street allows you to see buildings far into the distance.



1. count long sight lines

measuring enclosure

2. proportion street wall both sides, beyond study area

2. estimate proportion street wall

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

While walking, note where building facades or walls do and do not front along the sidewalk. Do this for the side of the street you are walking along as well as the opposite side of the street.

Note:

Consider the “street wall” as portions of the block that are occupied by continuous facades or walls adjacent to the sidewalk. If a façade or wall is set back from the sidewalk (by a lawn, parking lot, etc.) by less than 10 feet, then that façade or wall contributes to the street wall; if it is set back more than 10 feet, then it does not contribute to the street wall.

Step 3

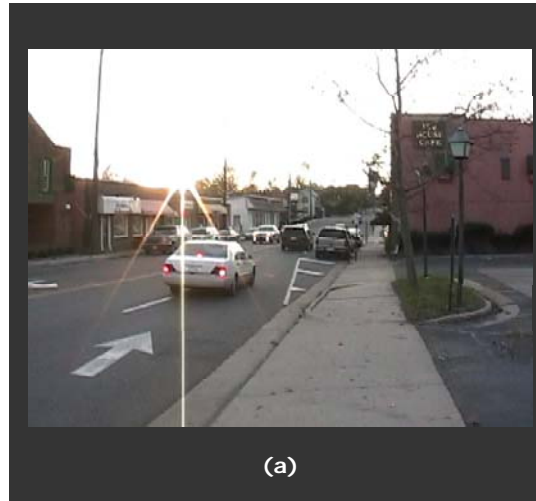
Estimate the proportion of the length of the street on your side made up of street wall. Record as a decimal. Use increments of tenths (.10).

Step 4

Estimate the proportion of the block on the opposite side of the street made up of street wall. Record as a decimal. Use increments of tenths (.10).

Note:

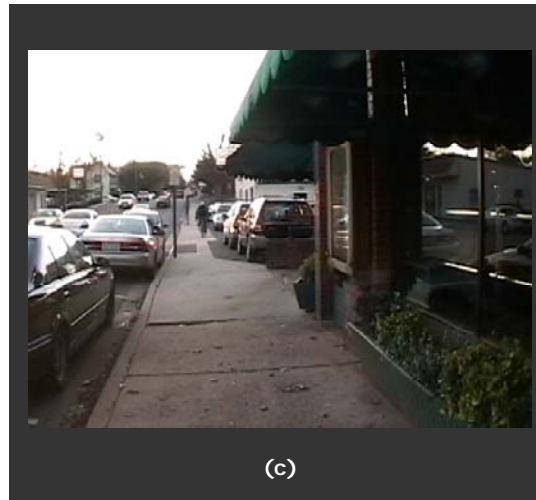
Figures (a), (b), and (c) show a progression of views down one street. Use the figures to assist you in estimating the proportion street wall.



(a)



(b)



(c)

(a) no street wall

The parking lot on the right side of the street does not provide a defined edge to the street and therefore does not contribute to the street wall.

(b) transition to a street wall

As you walk farther down the street, the building ahead fronts along the sidewalk and provides a defined street edge.

(c) transition back to ill-defined edge

Past the building, the street wall again deteriorates into a parking lot.

The estimated street wall for the right side of this street would be **20%**. In other words, 20% of the street length has buildings fronting the sidewalk with setbacks of less than 10 feet.

measuring enclosure

3. proportion sky both sides, beyond study area

Step 1

Stand at beginning point of street to be assessed, with the buildings on your right. Be sure to stand beyond the sidewalk for the cross street. Look straight ahead parallel to the street.

Step 2

Estimate the proportion of your field of vision straight ahead that is sky. If provided, use the cardboard frame to define the field of vision. Record your estimate as a decimal. Use increments of twentieths (.05).

Step 3

Turn to your left 90 degrees so that you are now facing perpendicular to the street being assessed.

Step 4

Estimate the proportion of your field of vision across the street that is sky. If provided, use the cardboard frame to define the field of vision. Record your estimate as decimal. Use increments of twentieths (.05).

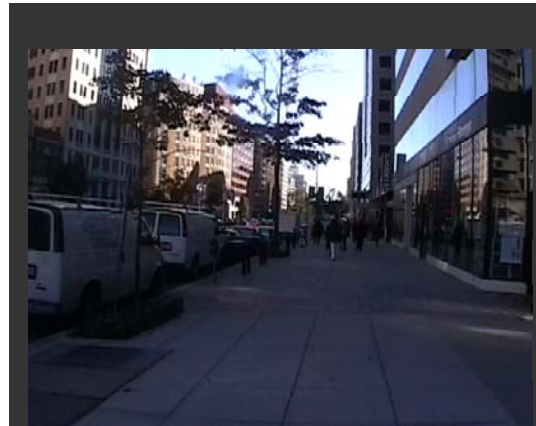
Note: The figures to the right will help you visualize different proportions of sky ahead and across the street.

(a) 10% sky ahead

(b) 20% sky across

(c) 30% sky ahead

(d) 40% sky across



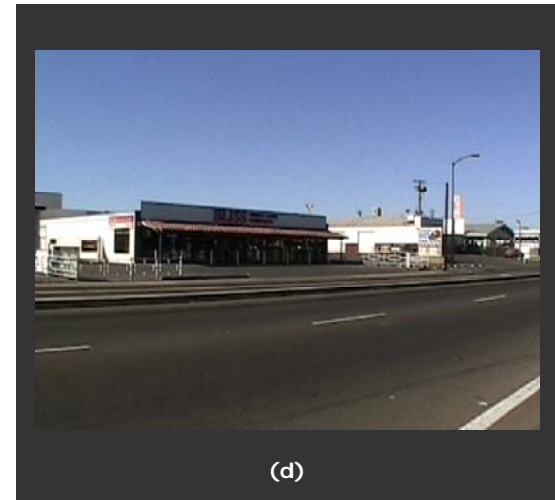
(a)



(b)



(c)



(d)

3. estimate proportion sky

human scale

Human scale refers to the size, texture, and articulation of physical elements that match the size and proportions of humans and, equally important, correspond to the speed at which humans walk. Building details, pavement texture, street trees, and street furniture are all physical elements contributing to human scale.

What do the experts say?

“presence of street furniture, protection from traffic; focus on street level;”

“sidewalk cafes on both sides of sidewalk increase human scale”

“presence of stores and activity that invite you in”

“presence of people plays a big role”

Continuous active uses at street level, restricted sight lines that create a room-like feeling, small buildings, a narrow street, and ample street furniture give this street human scale.

HIGH HUMAN SCALE



This street has no active uses or street furniture that would engage pedestrians. Long sight lines into the distance also contribute to this street having low human scale.

LOW HUMAN SCALE



measuring human scale

1. number of long sight lines both sides, beyond study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

While walking, can you see far in front of you? Record a 1 if at any time during the walk you were able to see far in front.

Note:

Consider far ahead being approximately 1000 feet, or three short city blocks. Refer to the examples on the right to help you assess long sight lines.

Step 3

While walking, can you see far to your right? Record a 1 if at any time during the walk you were able to see far to your right. Do not count views down cross-streets when you are at either end of the block.

Step 4

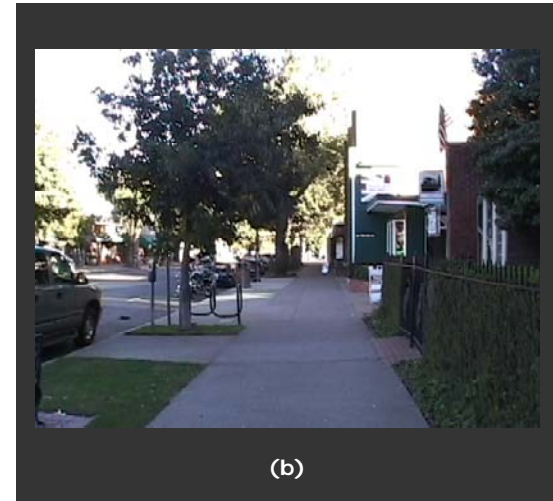
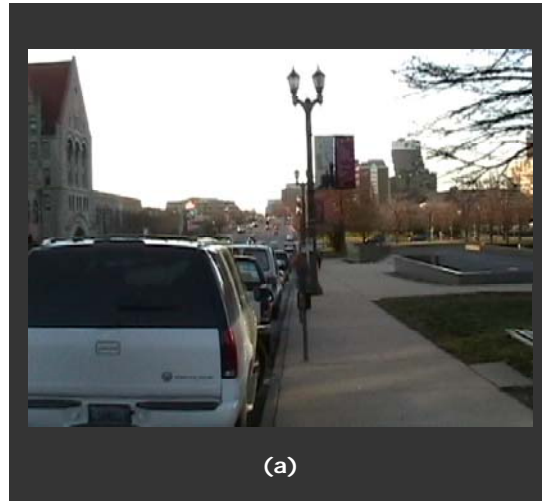
While walking, can you see far to your left? Record a 1 if at any time during the walk you were able to see far to your left. Do not count views down cross-streets when you are at either end of the block.

Step 5

Record a 0 otherwise for steps 2-4.

Step 6

Sum your scores from the previous steps. You should have a value between 0 and 3.



(a) long sight line down street - 1

The lack of an enclosed environment where this shot was taken (low rise buildings, open plaza on right, wide avenue) allows you to see far ahead.

(b) sight lines blocked - 0

The regular spacing of mature street trees blocks your view of the block ahead.

(c) long sight line across street - 1

The ill-defined street wall across the street allows you to see buildings far into the distance.



1. identify long sight lines

measuring human scale

2. proportion windows at street level your side, within study area

2. estimate proportion windows at street level

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street where buildings front along the sidewalk.

Step 3

Of those buildings that front along the sidewalk note where there are windows at street level.

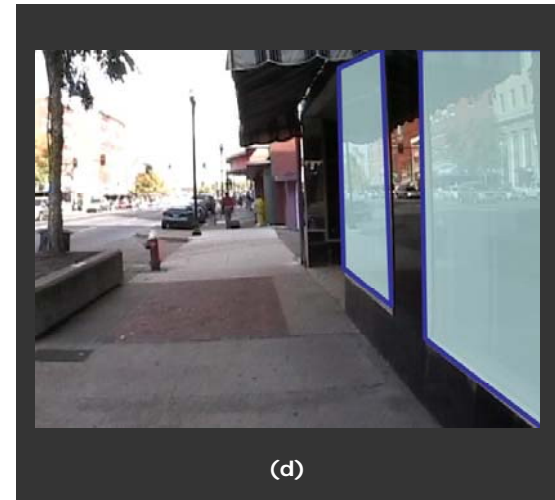
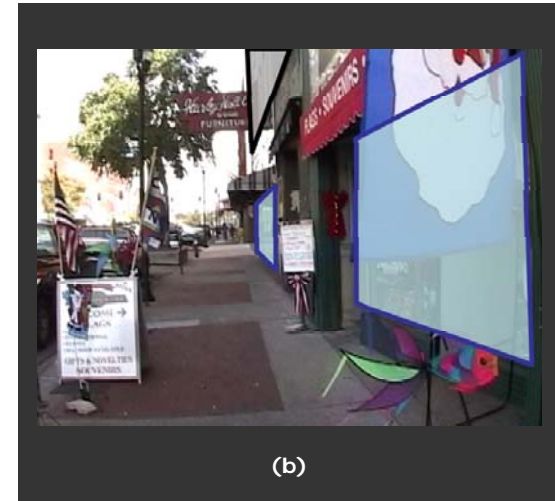
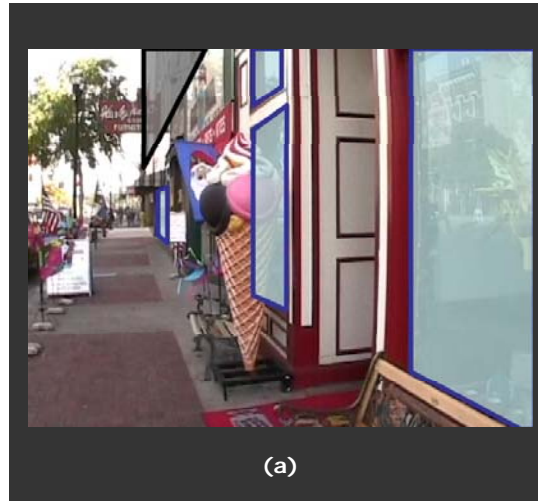
Step 4

Estimate the proportion of the surface area of the first floor (street level) of buildings that front along the sidewalk made up of windows. Record as a decimal. Use increments of tenths (.10).

Note:

Figures (a), (b), (c), and (d) show a progression of views down one street. Blue highlighted areas indicate where windows are present. Grey highlighted areas indicate portions of buildings that are not at street level.

Overall, this street has an estimated **70%** of street level building surface area made up of windows.



measuring human scale

3. average building height your side, within study area

3. estimate average building height

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note the height of buildings on your side of the street

Step 3

Estimate the average height of buildings in feet on your side of the street taking into account the proportion of street where buildings front the sidewalk.

Note: Assume one typical building story to be approximately 10 feet. When estimating the average building height for the length of the study area be sure to note not only building heights but also how much of the street the building occupies lengthwise.

Figures (a), (b), (c), and (d) show a progression of views down one street. Use the figures to assist you in estimating average building height.

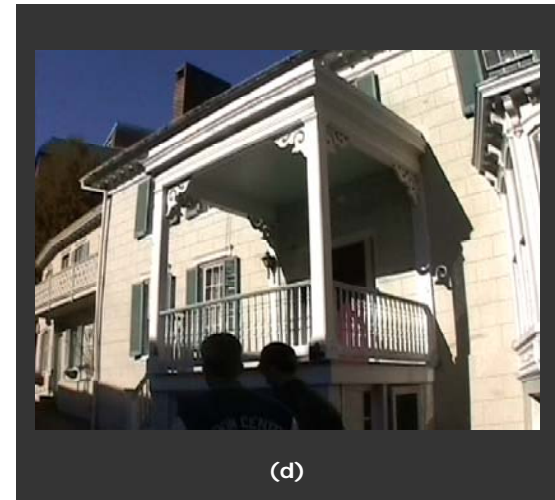
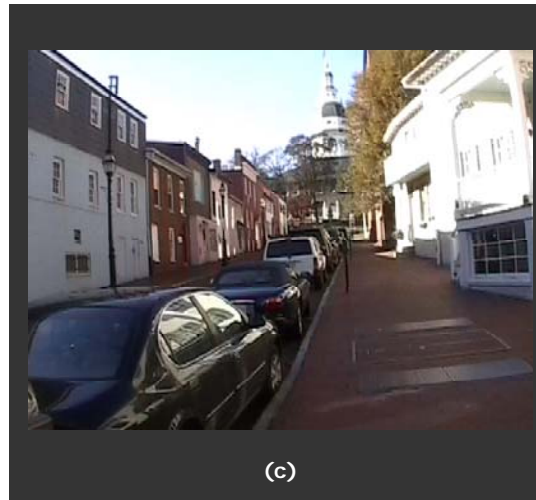
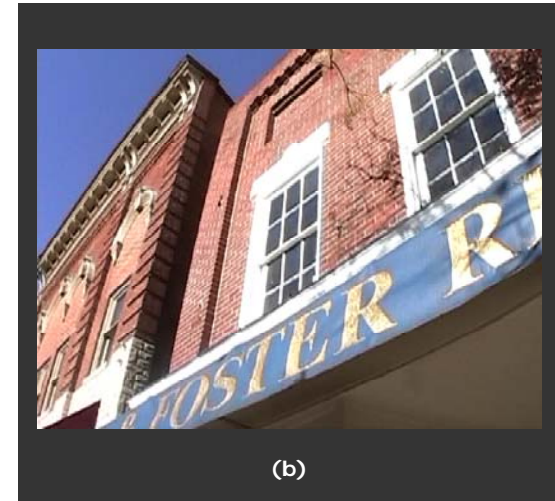
(a) **First floor retail** occupies the bottom levels of the first two buildings. The first floors are approximately **10 feet**.

(b) **Taller second stories** are found on the first two buildings. These floors are about **15 feet**. The total height for the first two buildings is about **25 feet**.

(c) A **two story residential building w/ basement** occupies the remainder of the street on our side.

(d) A **closer view of the residential building** reveals that the two levels are partially above street level (approximately **4 feet**). The two residential floors are approximately **8 feet** each. The total height is approximately **20 feet**.

The average building height is approximately 24 feet.



measuring human scale

4. number of small planters your side, within study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street any small planters.

Note:

Consider a small planter to be any potted arrangement of shrubs or flowers that is less than 10 square feet at the base. The planter should be a permanent fixture of the streetscape and not a potted plant that is easily taken indoors at the end of the day. Do not count in-ground planters or trees.

Step 3

Record the number of small planters encountered within the study area.

Note:

Figures (a), (b), (c), and (d) show examples of what can and cannot be considered small planters.

(a) small flowerbed next to window

A small planter can be a part of the buildings so long as the flowerbed appears to be less than 10 square feet.

(b) two small planters by a large planting bed

The two small planters are large enough that they are permanent aspects of the streetscape. The planting bed in the background is too large to be considered.

(c) small planter behind a streetlight

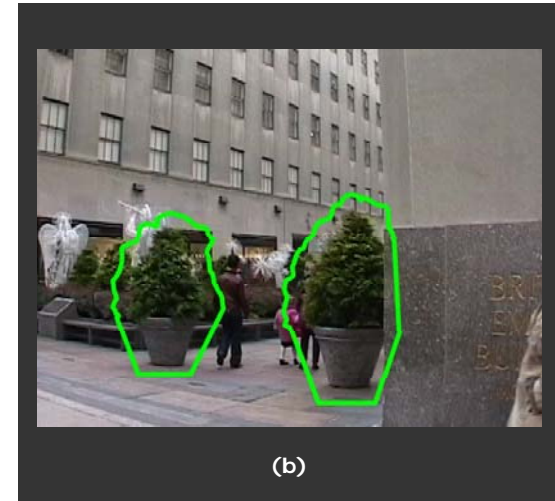
This small planter appears just large enough that it is probably a permanent fixture of the streetscape.

(d) flower pots are too small

The pots along the storefront can be easily taken indoors anytime, therefore, they will not be considered small planters.



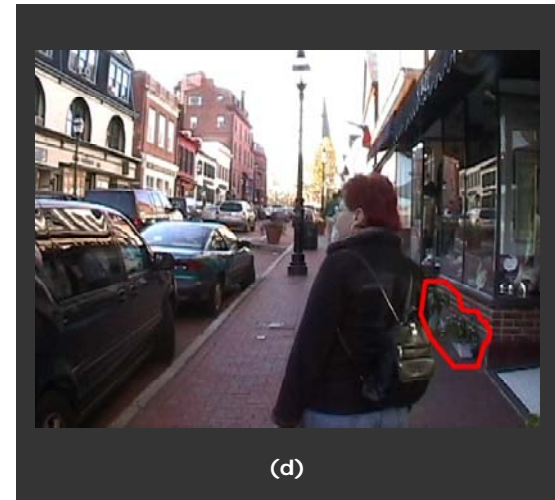
(a)



(b)



(c)



(d)

measuring human scale

5. number of pieces of street furniture and other street items your side, within study area

5. count street furniture and other street items

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street the presence of street furniture (benches, lamp posts, etc...) and other street items (newspaper boxes, parking meters, etc...).

Note:

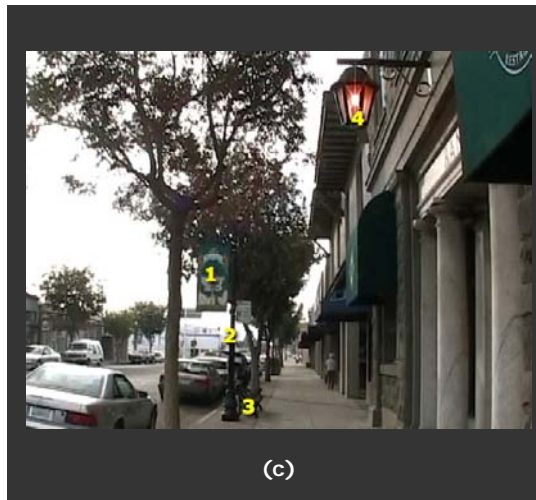
Use the list and figures on this page to see what types of items will count. Do not count items at the corner that are also in the path of the sidewalk for the cross-street.

Step 3

Record the number of pieces of street furniture and other street items encountered within the study area.

Examples of items that can count as street furniture or other street items:

- | | |
|--------------------------------|----------------|
| tables | ATM's |
| chairs | hanging plants |
| benches | flower pots |
| parking meters | umbrellas |
| trash cans | |
| newspaper boxes | |
| mail boxes | |
| bike racks | |
| bollards | |
| hydrants | |
| flags | |
| banners | |
| merchandise stands | |
| street vendors | |
| pedestrian-scale street lights | |
| other street lights | |



Figures (a), (b), and (c) show examples of what can be considered as street furniture and other street items.

(a) 14 street items

- 1-8: chairs
- 9-11: tables
- 12: balloons
- 13. grouping of small flowerpots that are too small to be counted as small planters.
- 14. trash can

(b) 7 street items

- 1: ATM
- 2: lantern attached to building
- 3: trash can
- 4: pedestrian scale street light
- 5-7: parking meters

(c) 4 street items

- 1: street banner
- 2: pedestrian scale street light
- 3: bench
- 4: antique lantern attached to building

transparency

Transparency refers to the degree to which people can see or perceive what lies beyond the edge of a street or other public space and, more specifically, the degree to which people can see or perceive human activity beyond the edge of a street or other public space. Physical elements that influence transparency include walls, windows, doors, fences, landscaping, and openings into midblock spaces.

What do the experts say?

“it's more than just glass but the sense of what's going on”

“can't have transparency if buildings are so far back from street edge”

“continuous exposure to uses that are clear and accessible”

A continuous street wall with active uses and many windows at street level make this scene very transparent.

HIGH TRANSPARENCY



Transparency is low in this scene since there are few windows at street level, much reflective glass and concrete, and no active building uses that are inviting to pedestrians.

LOW TRANSPARENCY



measuring transparency

1. proportion windows at street level your side, within study area

1. estimate proportion windows at street level

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street where buildings front along the sidewalk.

Step 3

Of those buildings that front along the sidewalk note where there are windows at street level.

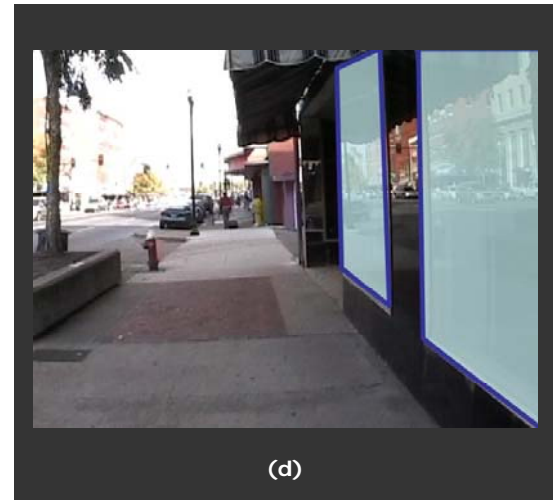
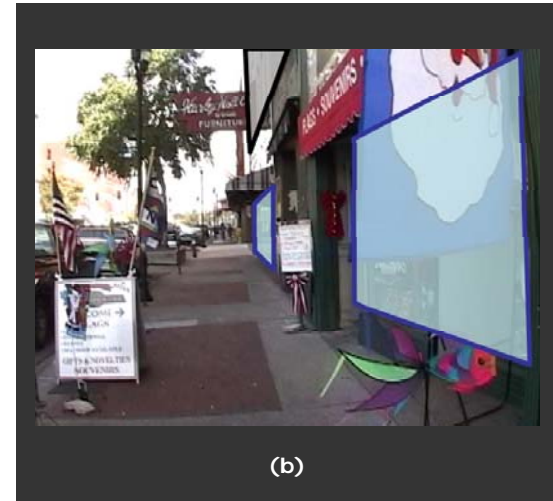
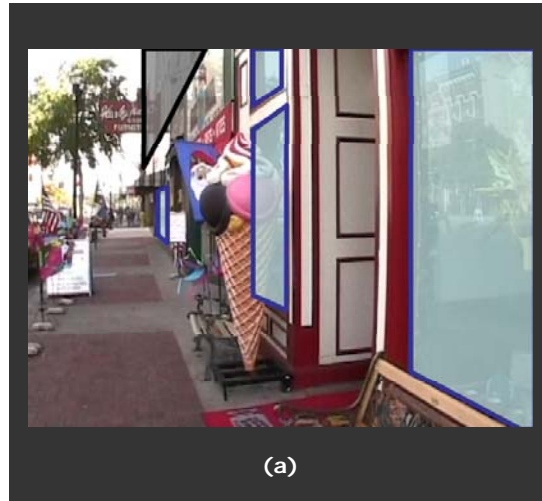
Step 4

Estimate the proportion of the surface area of the first floor (street level) of buildings that front along the sidewalk that is window. Record as a decimal. Use increments of tenths (.10).

Note:

Figures (a), (b), (c), and (d) show a progression of views down one street. Blue highlighted areas indicate where windows are present. Grey highlighted areas indicate portions of buildings that are not at street level.

Overall, this street has an estimated **70%** of street level building surface area made up of windows.



measuring transparency

2. proportion street wall your side, beyond study area

2. estimate proportion street wall

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

While walking, note where building facades or walls do and do not front along the sidewalk. Do this for the side of the street you are walking along.

Note:

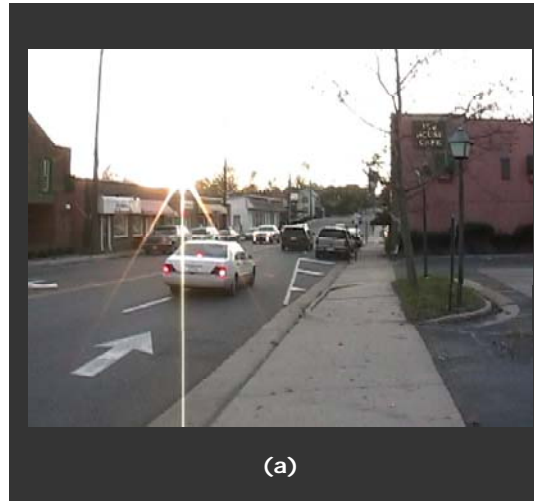
Consider the “street wall” as portions of the block that are occupied by continuous facades or walls adjacent to the sidewalk. If a façade or wall is set back from the sidewalk (by a lawn, driveway, parking lot, etc.) by less than 10 feet, then that façade or wall contributes to the street wall; if it is set back more than 10 feet, then it does not contribute to the street wall.

Step 3

Estimate the proportion of the length of the street on your side made up of street wall. Record as a decimal. Use increments of tenths (.10).

Note:

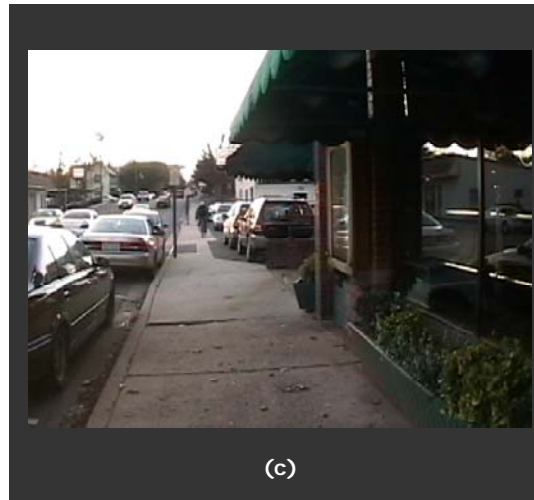
Figures (a), (b), and (c) show a progression of views down one street. Use the figures to assist you in estimating street wall.



(a)



(b)



(c)

(a) no street wall

The parking lot on the right side of the street does not provide a defined edge to the street and therefore does not contribute to the street wall.

(b) transition to a street wall

As you walk farther down the street, the building ahead fronts along the sidewalk and provides a defined street edge.

(c) transition back to ill-defined edge

Past the building, the street wall again deteriorates into a parking lot.

The estimated street wall for the right side of this street would be **20%**. In other words, 20% of the street length has buildings fronting the sidewalk with setbacks of less than 10 feet.

measuring transparency

3. proportion active uses your side, within study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street where buildings front along the sidewalk.

Step 3

Of those buildings that front along the sidewalk note which buildings have active uses on the ground floor.

Step 4

Estimate the proportion of the street with buildings fronting the sidewalk that have active uses. Record as a decimal. Use increments of tenths (.10).

Note: Active uses are defined as shops, restaurants, public parks, and other uses that generate significant pedestrian traffic. Inactive uses include blank walls, parking lots, vacant lots, abandoned buildings, and offices with no foot traffic. For residential uses, assume apartments and attached housing units (town homes, row homes, etc.) to be active.

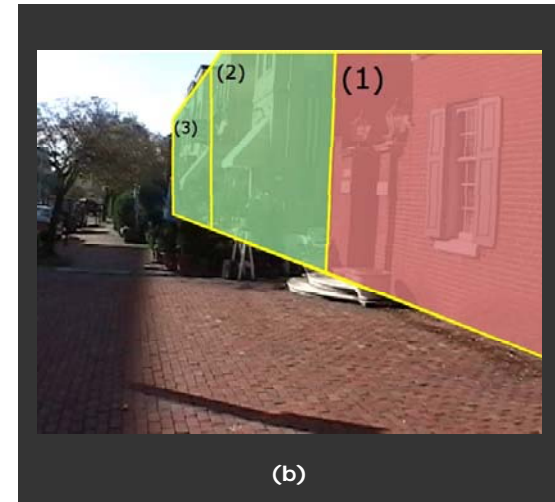
Figures (a), (b), (c), and (d) show a progression views down one street. Green highlighted areas indicate active uses while red highlighted areas indicate inactive uses.

(1) inactive use – office with no apparent activity, (2) active use – restaurant with on street dining, (3) active use – street oriented retail.

This street has approximately **60%** of its street frontage devoted to active uses.



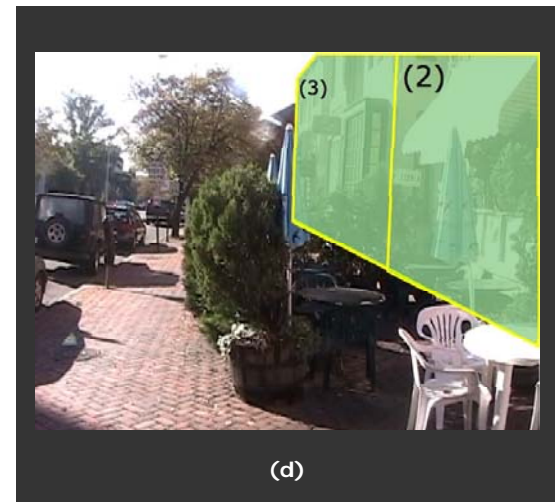
(a)



(b)



(c)



(d)

complexity

Complexity refers to the visual richness of a place. The complexity of a place depends on the variety of the physical environment, specifically the numbers and kinds of buildings, architectural diversity and ornamentation, landscape elements, street furniture, signage, and human activity.

What do the experts say?

“many people add to complexity”

“overly controlled design makes a place less complex; you lose complexity with predictability”

“a block with one building is less complex than a block made of several buildings”

“also need complex activity - social complexity”

This street is visually complex with many different building and accent colors, places to dine on the street, and many pedestrians.

HIGH COMPLEXITY



Few colors, few buildings, and a lack of pedestrians make this street scene very low in complexity

LOW COMPLEXITY



measuring complexity

1. number of buildings
both sides, beyond study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps), starting at the end of the block that puts buildings on your right.

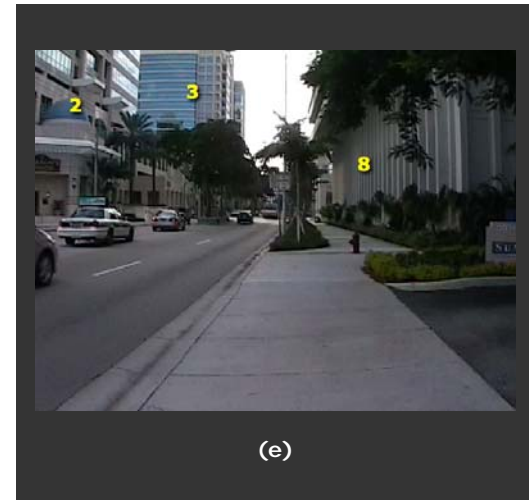
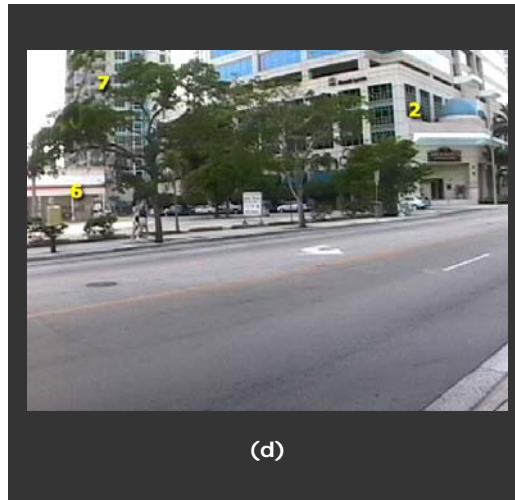
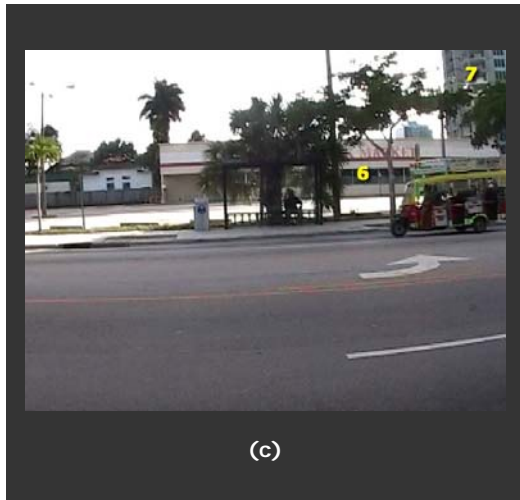
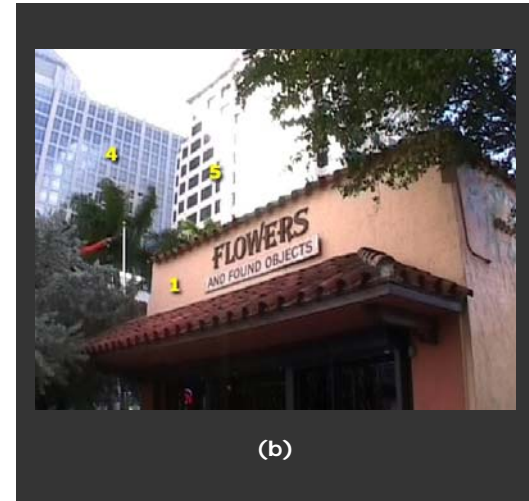
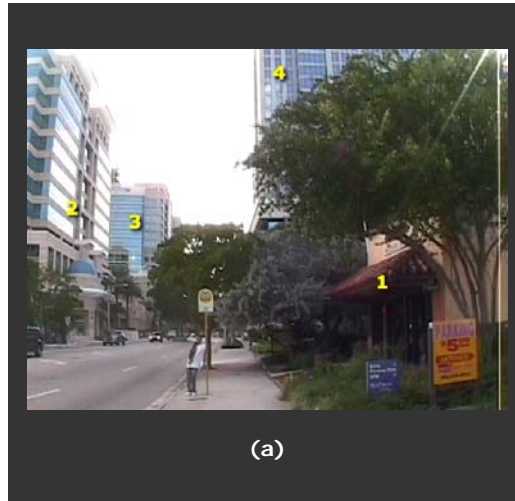
Step 2

While walking, count the number of buildings in the study area or that are in the distance but still prominent.

Note:

Count buildings that are either on the street within your study area or buildings that are outside the study area but occupy at least 20% of the height of your field of vision as you walk with the buildings on your right.

Figures (a), (b), (c), (d), and (e) show a progression of views down one street. Use the figures to help you determine which buildings are within your immediate area or are prominent enough to be counted.



1. count buildings

measuring complexity

2. number of colors both sides, beyond study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on both sides of the street the different colors present on buildings and other street items.

Step 3

Group the colors you observe into two types: basic building colors and accent colors.

Note:

Basic building colors are the primary colors of buildings that have been counted in the previous step.

Accent colors contrast with basic building colors and can be used on building trim, street furniture, awnings, and signs.

When counting colors, do not distinguish between several shades of the same color. Try to count only basic colors.

Step 4

Record the number of unique basic building colors present on counted buildings.

Step 5

Record the number of unique accent colors present within the study area.

Note:

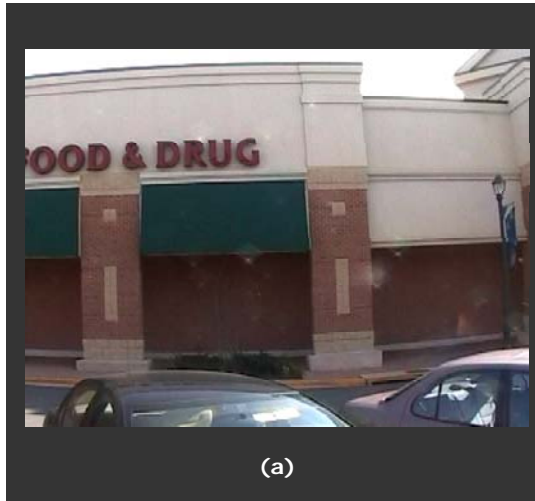
Figures (a), (b), (c), and (d) show street scenes with different numbers of accent and building colors.

(a) basic building colors: 2 (tan, red brick); accent colors: 2 (red, green)

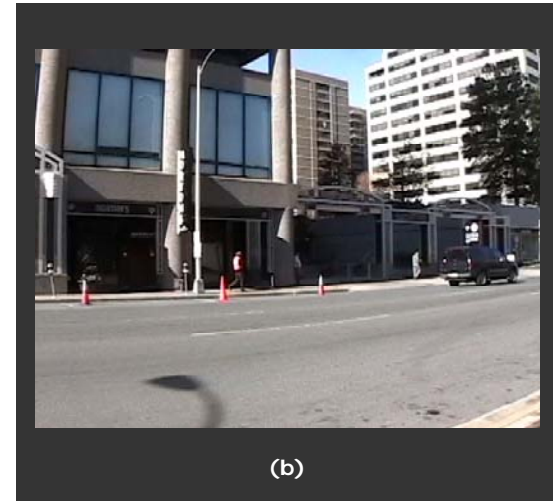
(b) basic building colors: 1 (off-white); no accent colors

(c) basic building colors: 1 (orange); accent colors: 2 (tan, green)

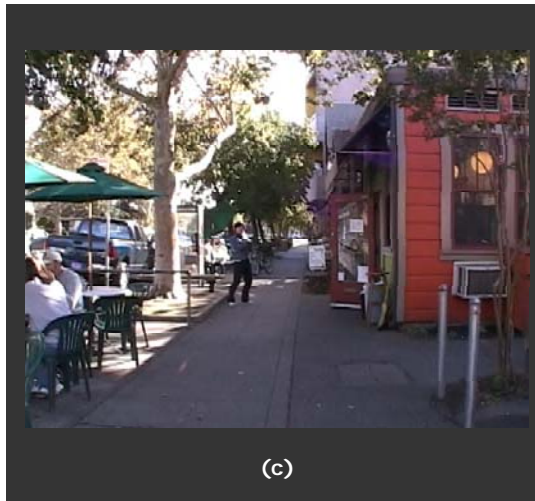
(d) basic building colors: 3 (brown, white, red brick); accent colors: 2 (green, brown)



(a)



(b)



(c)



(d)

2. count colors

measuring complexity

3. presence of outdoor dining your side, within study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street instances where outdoor dining is provided.

Note:

Consider a place as having outdoor dining even if there are no people currently utilizing it. However, if a place has outdoor dining but appears to be closed (folded chairs and umbrellas), do not consider it an instance of outdoor dining. The outdoor dining must appear to be open to be counted.

Step 3

Record the presence of outdoor dining – 1 for yes, 0 for no.

Note:

Figures (a), (b), (c), and (d) show examples of what can and cannot be considered outdoor dining.

(a) open outdoor dining with no patrons - YES

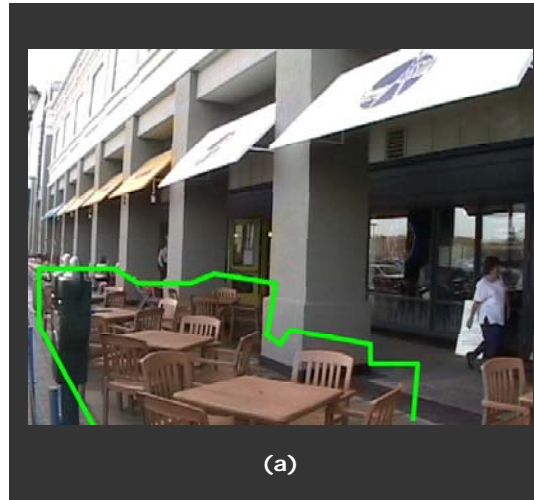
Although the tables are not being utilized, this place would be considered outdoor dining.

(b) closed outdoor dining - NO

The outdoor dining shown here has closed umbrellas and chairs on top of tables. This would not be considered outdoor dining.

(c) and (d) open outdoor dining with patrons - YES

These two places have outdoor dining with patrons. Count each even though one is partially enclosed.



(a)



(b)



(c)



(d)

measuring complexity

4. number of pieces of public art both sides, within study area

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on either side of the street pieces of public art.

Note:

Consider public art to be monuments, sculptures, murals, and any other artistic display that has free access.

Step 3

Record the number of distinct pieces of public art present within the study area.

Note:

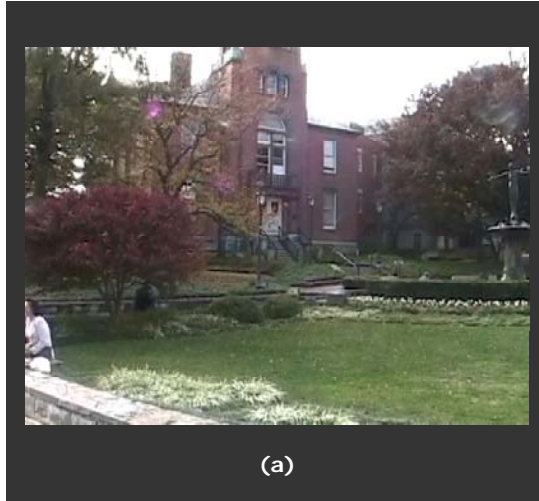
Figures (a), (b), (c), and (d) show examples of public art.

(a) sculpture fountain

(b) stone monument

(c) sculpted figure

(d) piece of modern art



4. count public art

measuring complexity

5. number of people your side, within study area

5. count walking pedestrians

Step 1

Walk entire length of study area (one block length or roughly 300 feet—120 steps).

Step 2

As you walk, note on your side of the street when you encounter walking pedestrians.

Note: Count pedestrians that you pass and any pedestrian that is no more than 50 feet ahead of you.

Step 3

Record the number of walking pedestrians you encountered on one walk through the study area.

Step 4

Repeat steps 1-3 another 3 times recording the number of people each time.

Step 5

Compute the average number of walking pedestrians encountered from the four instances of walking the study area.

measuring urban design qualities scoring sheet		auditor	
street	from	date & time	
step		recorded value	(multiplier) x (recorded value)
imageability			
1. number of courtyards, plazas, and parks (both sides, within study area)		0.41	
2. number of major landscape features (both sides, beyond study area)		0.72	
3. proportion historic building frontage (both sides, within study area)		0.97	
4. number of buildings with identifiers (both sides, within study area)		0.11	
5. number of buildings with non-rectangular shapes (both sides, within study area)		0.08	
6. presence of outdoor dining (your side, within study area)		0.64	
7. number of people (your side, within study area)	Walk through 1		
	Walk through 2		
	Walk through 3		
	Walk through 4		
	Total		
	Total divided by 4	0.02	
8. noise level (both sides, within study area)	Walk through 1		
	Walk through 2		
	Walk through 3		
	Walk through 4		
	Total		
	Total divided by 4	-0.18	
		add constant	+2.44
		imageability score	
enclosure			
1. number of long sight lines (both sides, beyond study area)		-0.31	
2a. proportion street wall (your side, within study area)		0.72	
2b. proportion street wall (opposite side, within study area)		0.94	
3a. proportion sky (ahead, beyond study area)		-1.42	
3b. proportion sky (across, beyond study area)		-2.19	
		add constant	+2.57
		enclosure score	
human scale			
1. number of long sight lines (both sides, beyond study area) *from above		-0.74	
2. proportion windows at street level (your side, within study area)		1.10	
3. average building height (your side, within study area)		-0.003	
4. number of small planters (your side, within study area)		0.05	
5. number of pieces of street furniture and other street items (your side, within study area)		0.04	
		add constant	+2.61
		human scale score	
transparency			
1. proportion windows at street level (your side, within study area)		1.22	
2. proportion street wall (your side, beyond study area) *from above		0.67	
3. proportion active uses (your side, within study area)		0.53	
		add constant	+1.71
		transparency score	
complexity			
1. number of buildings (both sides, beyond study area)		0.05	
2a. number of basic building colors (both sides, beyond study area)		0.23	
2b. number of basic accent colors (both sides, beyond study area)		0.12	
3. presence of outdoor dining (your side, within study area) *from above		0.42	
4. number of pieces of public art (both sides, within study area)		0.29	
5. number of walking pedestrians (your side, within study area)	Walk through 1		
	Walk through 2		
	Walk through 3		
	Walk through 4		
	Total		
	Total divided by 4	0.03	
		add constant	+2.61
		complexity score	