

# Arch 125: Intro to Environmental Design

## Interstitial Space



## *Thinking about settlement patterns*

- Our integration with the landscape and natural landforms
- Issues of Density
- Relationships to water
- The spaces between buildings
- Access to sunlight/passive heating/daylight and air/natural ventilation
- How architecture impacts feelings of community and safety
- The historical progression of settlement patterns and city/town planning

# Topics:

- Settlement patterns
- Urban density
- Public and private space
- Creating vital environments
- The spaces between buildings
- Cultural influences
- Environmental influences
- Sustainability

# Settlement Patterns

Affected by:

- Culture
- Environment / climate
- Required densities

# Southern Alberta

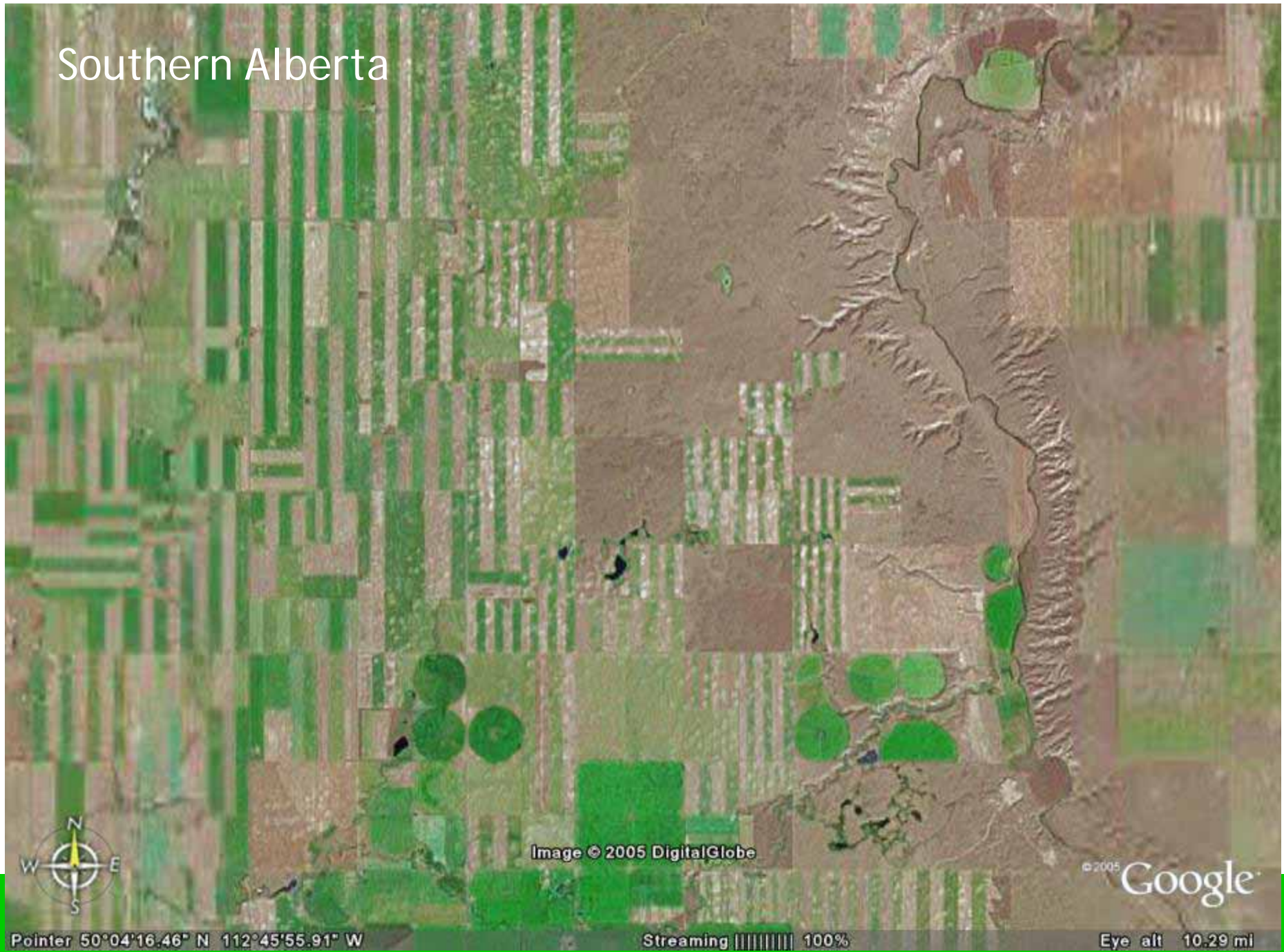


Image © 2005 DigitalGlobe

© 2005 Google

Pointer 50°04'16.46" N 112°45'55.91" W

Streaming ||||| 100%

Eye alt 10.29 mi



# Lethbridge, Alberta

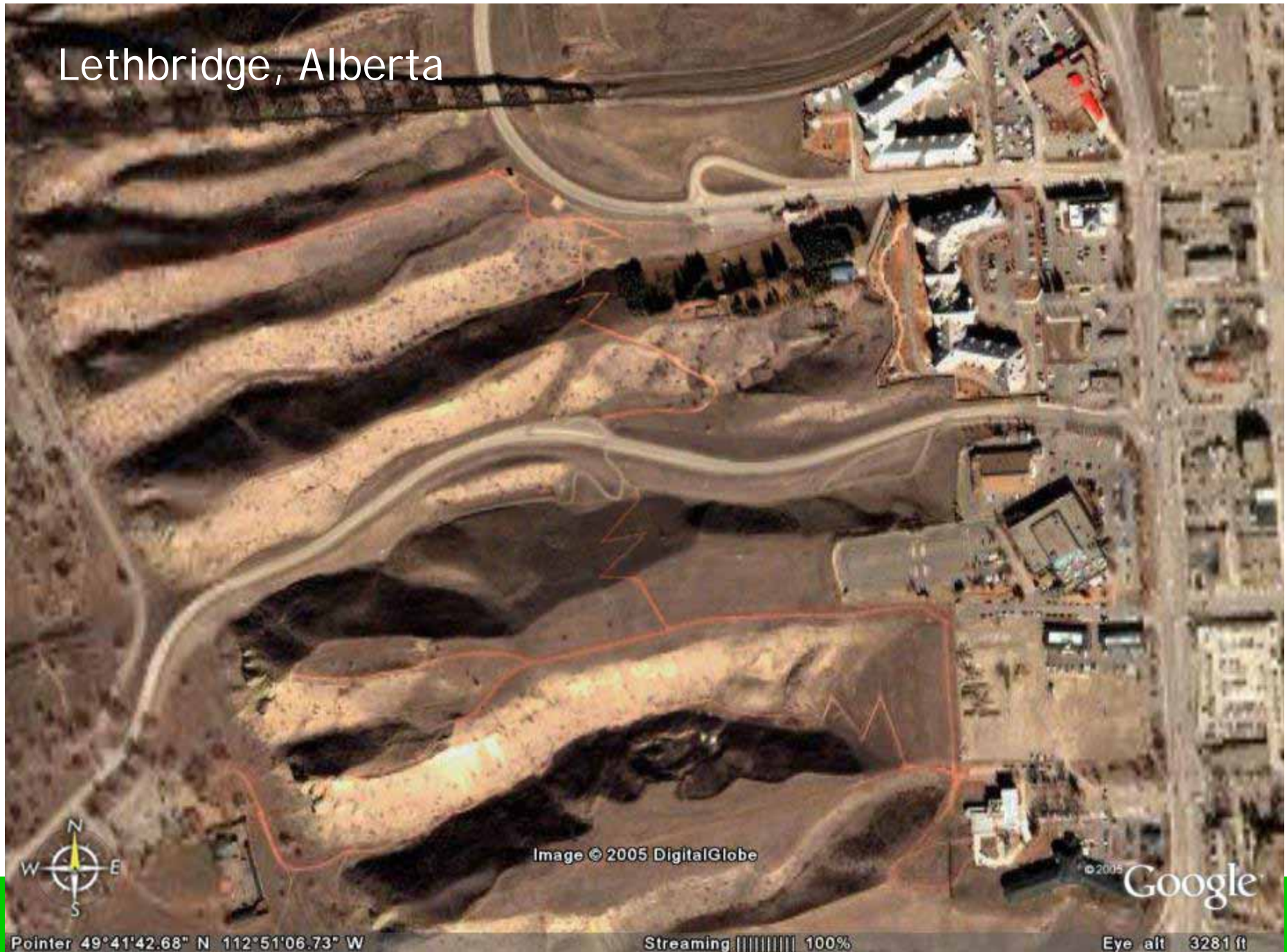


Image © 2005 DigitalGlobe

© 2005 Google



Pointer 49°41'42.68" N 112°51'06.73" W

Streaming ||||| 100%

Eye alt 3281 ft



# Calgary, Alberta

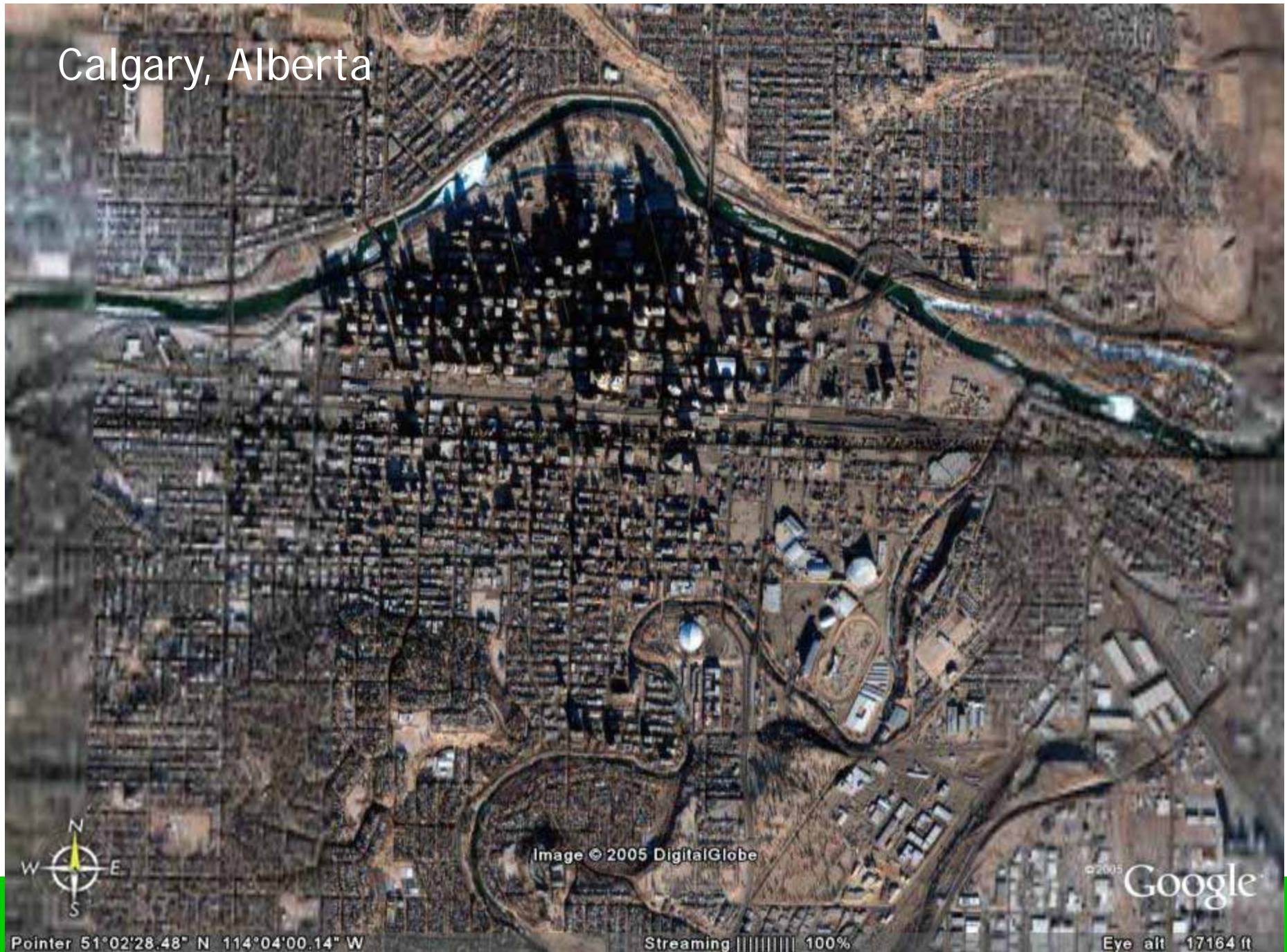


Image © 2005 DigitalGlobe

© 2005 Google

Pointer 51°02'28.48" N 114°04'00.14" W

Streaming ||||| 100%

Eye alt 17164 ft



# Bayview and 401



Image © 2008 First Base Solutions

©2007 Google™

Pointer 43°45'54.78" N 79°23'00.66" W elev 569 ft Streaming 100%

Eye alt 2639 ft



# Yonge and 401

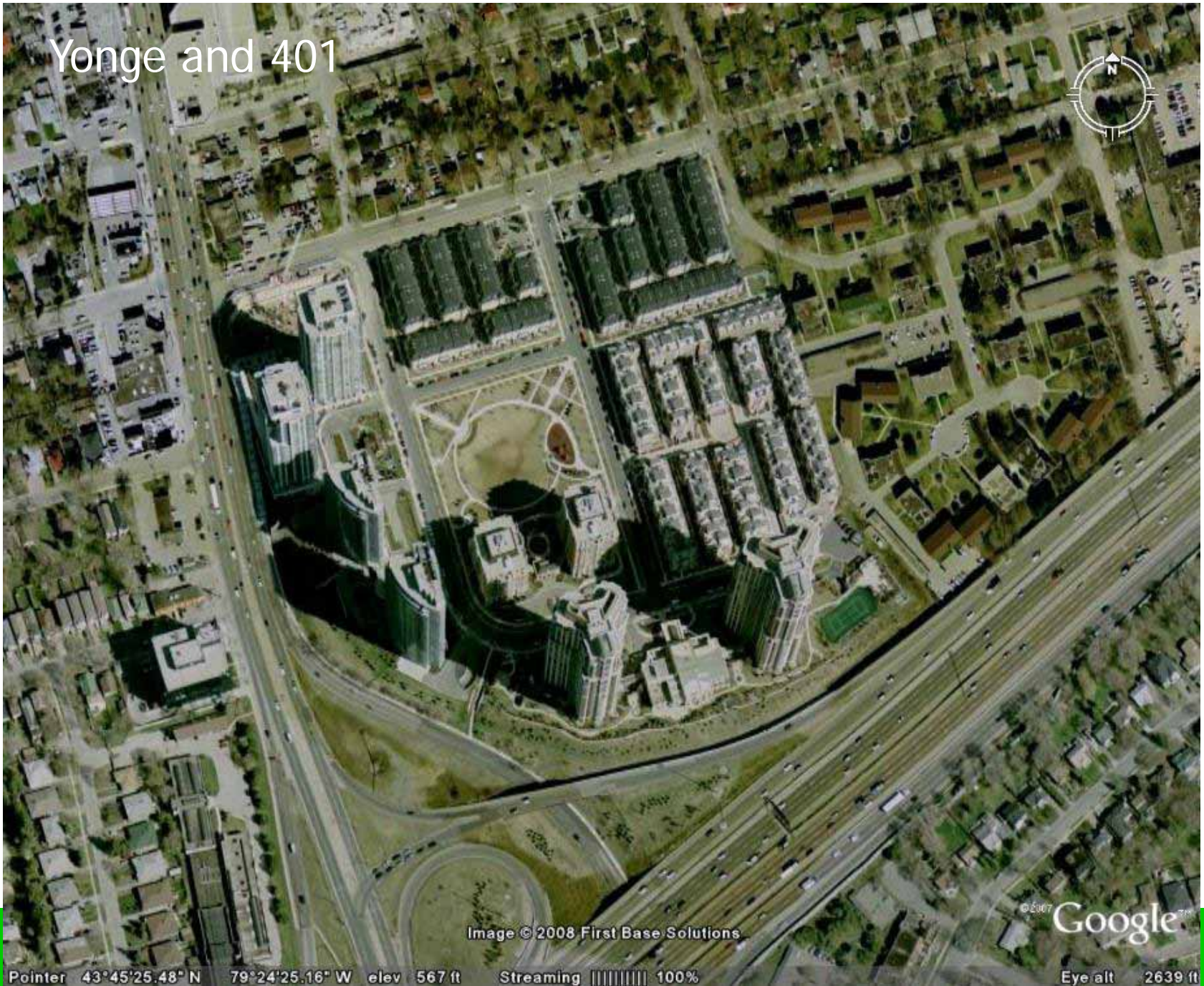


Image © 2008 First Base Solutions

© 2007 Google™



# Montreal, Quebec



Image © 2005 DigitalGlobe

© 2005 Google



Pointer 45°32'44.73" N 73°36'47.18" W

Streaming ||||| 100%

Eye alt 1610 ft



# Detroit, Michigan



Pointer 42°20'07.34" N 83°03'49.47" W

Streaming ||||| 100%

Eye alt 3304 ft

© 2005 Google



# Detroit, Michigan



© 2005 Google

Pointer 42°20'50.85" N 83°01'29.68" W

Streaming ||||| 100%

Eye alt 2030 ft



# Manhattan, NY

Pond, The



Image © 2005 State of New Jersey

© 2005 Google

Pointer 40°45'58.69" N 73°58'31.12" W

Streaming ||||| 100%

Eye alt 3296 ft



Manhattan, NY



Image © 2005 State of New Jersey

© 2005 Google

Pointer 40°48'49.42" N 73°57'27.20" W

Streaming ||||| 100%

Eye alt 1187 ft



# Manhattan, NY



Image © 2005 State of New Jersey

© 2005 Google

Pointer 40°49'14.17" N 73°57'17.61" W

Streaming ||||| 100%

Eye alt 1187 ft



Phoenix, Arizona



Image © 2005 Sanborn

© 2005 Google

Pointer 33°28'06.95" N 112°05'14.14" W

Streaming ||||| 100%

Eye all 1049 ft



Phoenix, Arizona

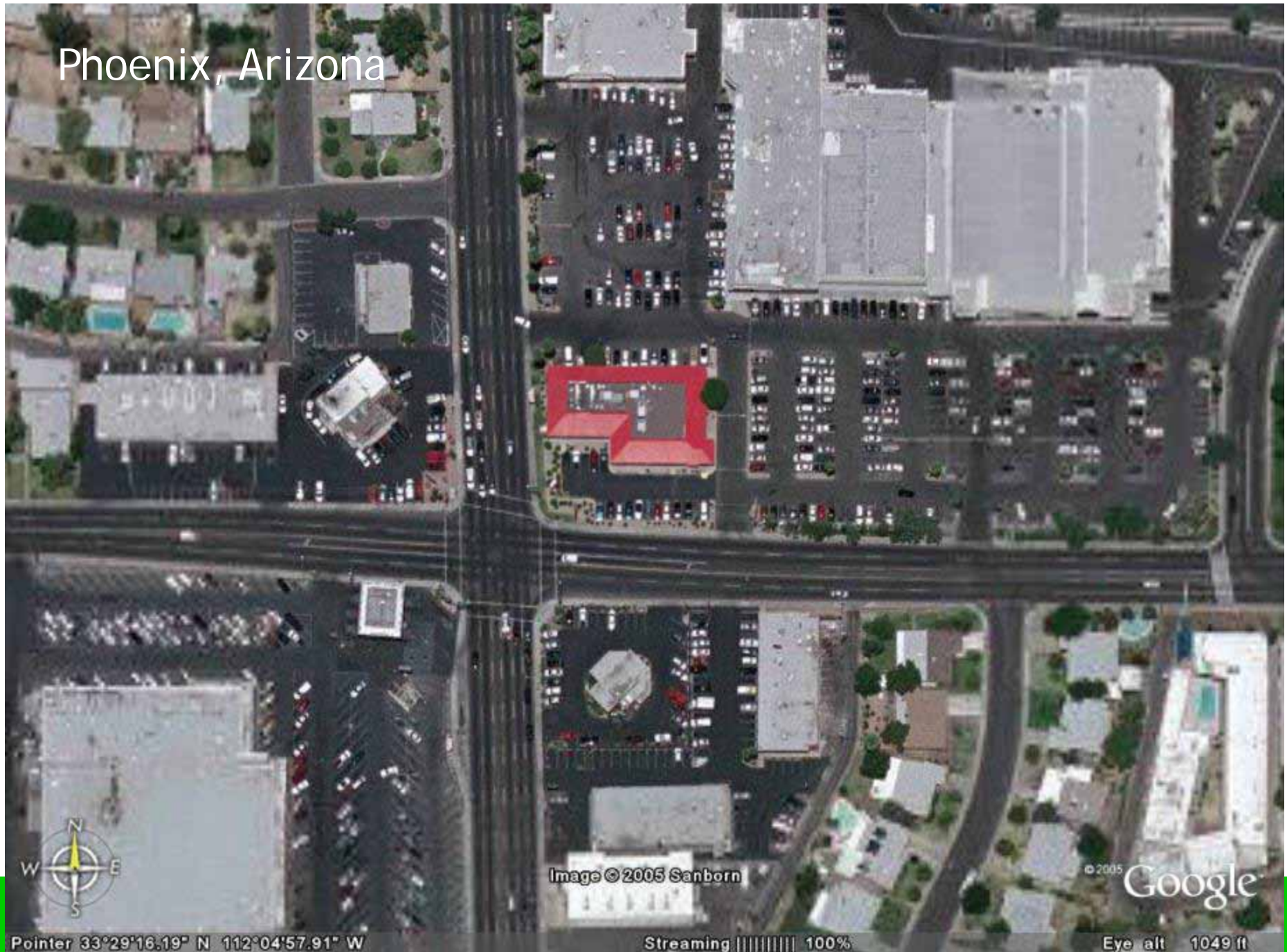


Image © 2005 Sanborn

© 2005 Google

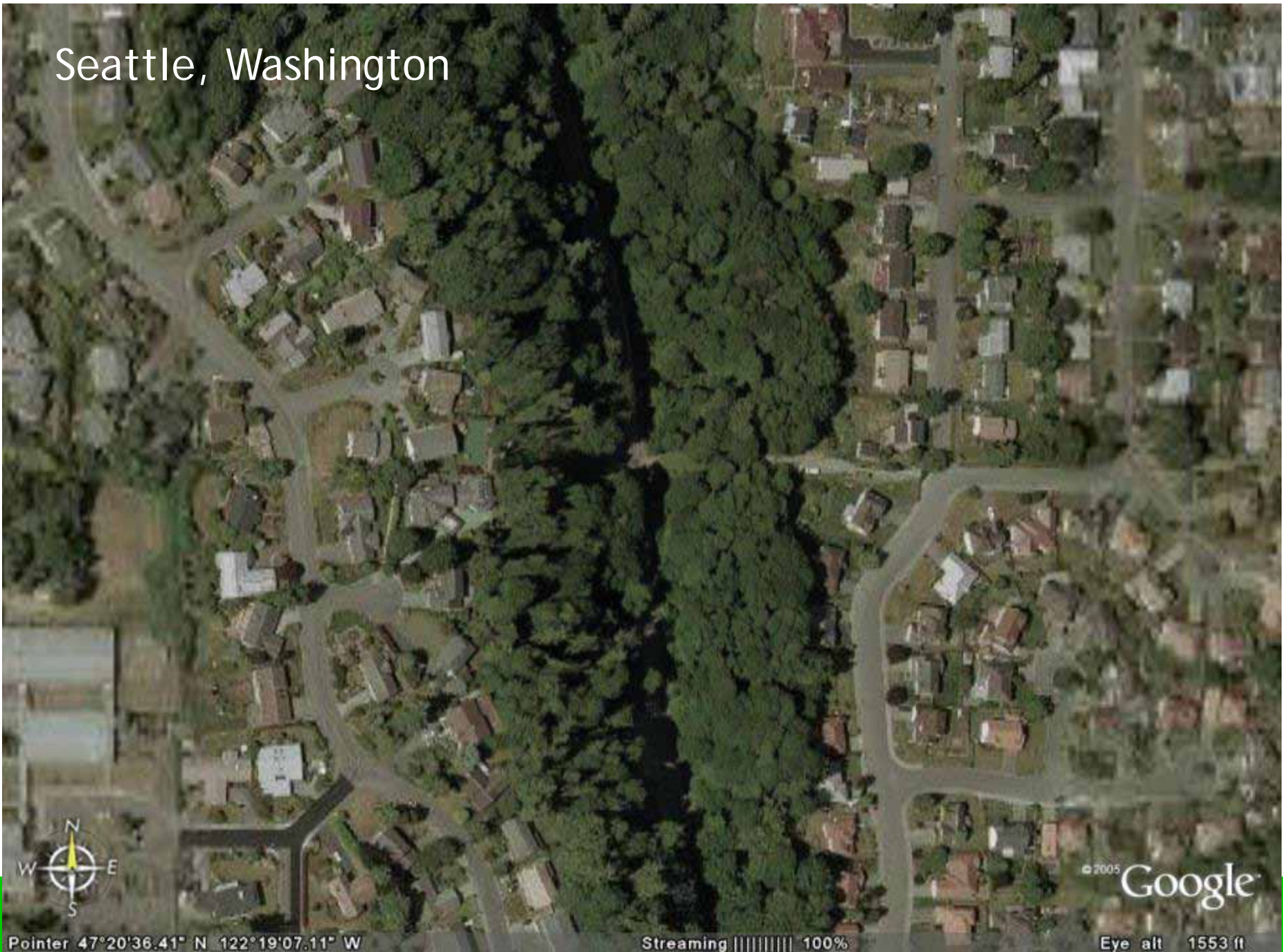
Pointer 33°29'16.19" N 112°04'57.91" W

Streaming ||||| 100%

Eye alt 1049 ft



# Seattle, Washington



Pointer 47°20'36.41" N 122°19'07.11" W

Streaming ||||| 100%

© 2005 Google

Eye alt 1553 ft



# Hong Kong



hong kong



Image © 2005 DigitalGlobe

© 2005 Google

Pointer 22°16'59.25" N 114°08'40.56" E

Streaming ||||| 100%

Eye alt 6929 ft



# Beijing, China



Image © 2005 DigitalGlobe

© 2005 Google

Pointer 39°56'18.59" N 116°24'23.47" E

Streaming ||||| 100%

Eye alt 2468 ft



# Rome, Italy



rome, italy

Image © 2005 DigitalGlobe

© 2005 Google

Pointer 41°54'00.00" N 12°29'00.00" E

Streaming ||||| 100%

Eye alt 17624 ft



Rome, Italy



Image © 2005 DigitalGlobe

© 2005 Google

Pointer 41°53'21.21" N 12°28'16.10" E

Streaming ||||| 100%

Eye alt 2329 ft



# Bombay, India



Image © 2005 DigitalGlobe

© 2005 Google

Pointer 18°58'01.01" N 72°49'35.26" E

Streaming ||||| 100%

Eye alt 3678 ft



# Classes of Interstitial Spaces

## Urban: Commercial

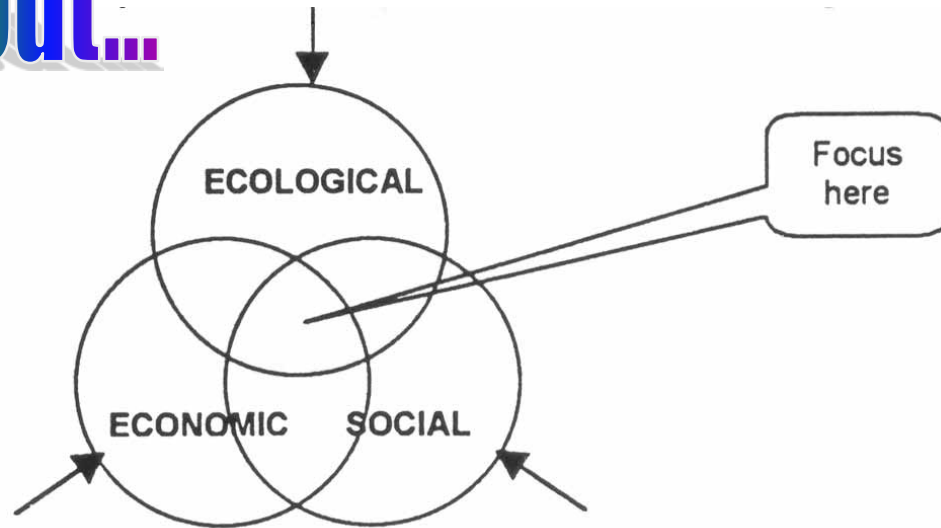
- Car dominated streets
- Pedestrian dominated streets
- Urban squares or piazzas

## Residential

- High density residential
- Medium density residential
- Low density residential
- Semi-private space
- Private space
- Spaces between buildings



think about...



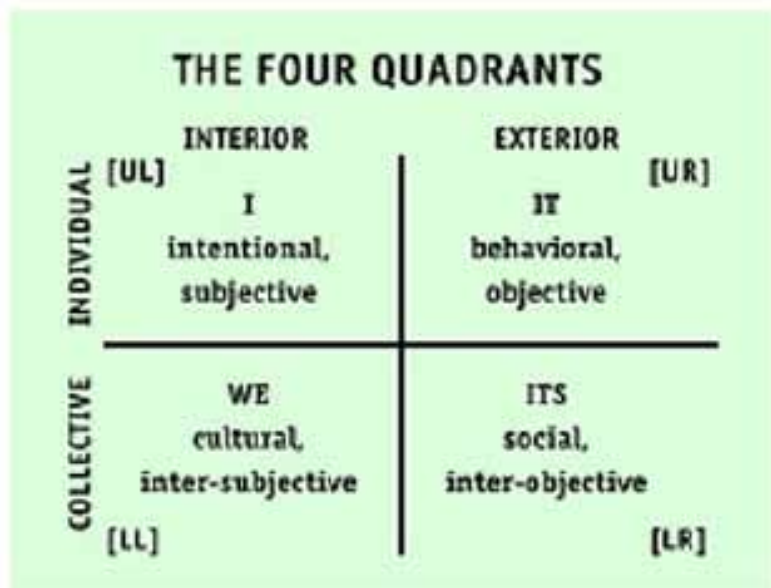
- *Life* Between Buildings
- Solar Access
- Section Dimensions
- Shadows/overshadowing



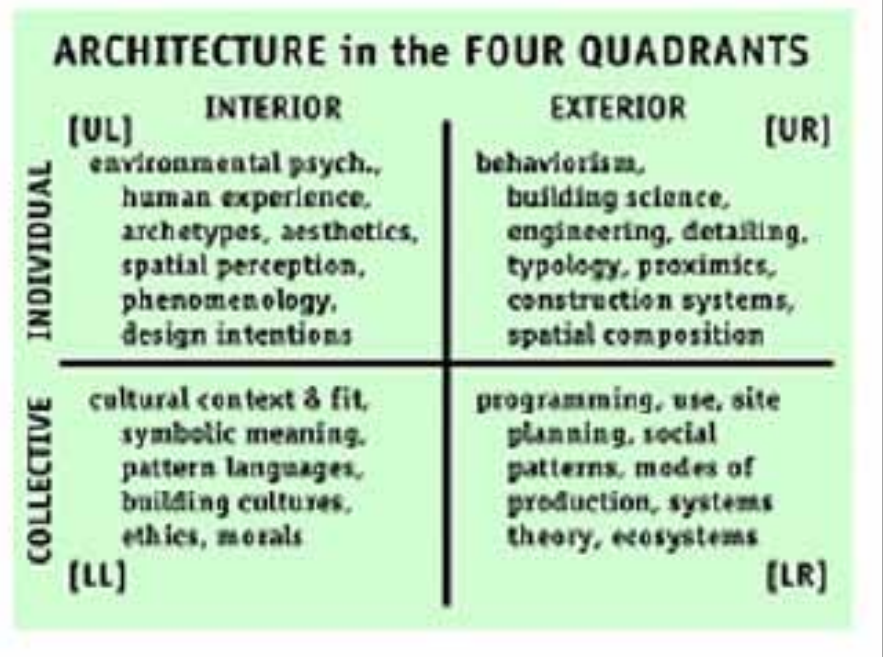
Environmental issues, microclimates and cultural differences can impact the quality of LIFE in the spaces between buildings.

For environments to be “alive” and “safe” a reasonable level of activity needs to be maintained.

We need to INTEGRATE many aspects of design to achieve successful interstitial spaces: microclimate, look good, healthy, safe, vital.



*The quadrants of Integral Theory.*





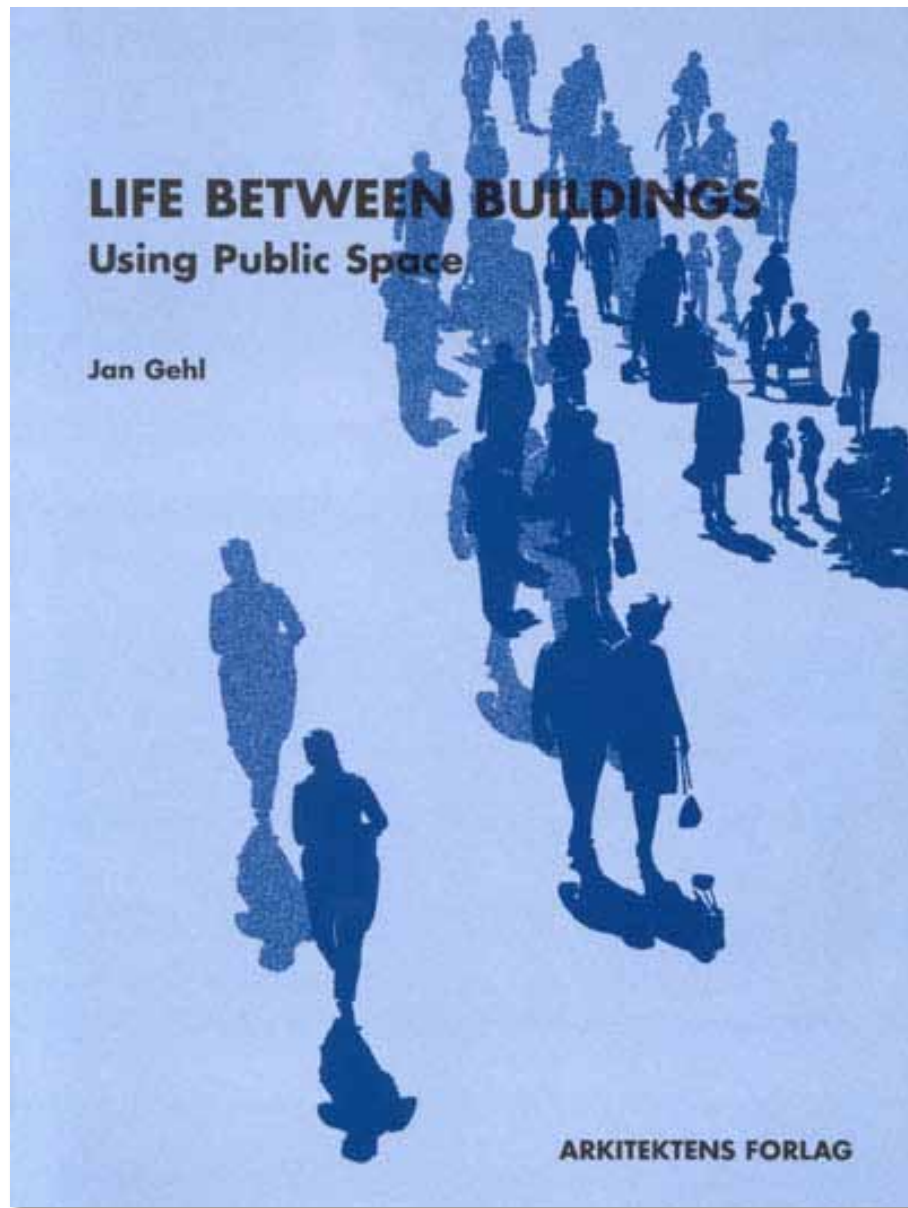
# Life Between Buildings



# Life Between Buildings

The first Danish language version of this book, published in 1971, was very much a protest against the functionalistic principles for planning cities and residential areas of that period.

The book carried an appeal to show concern for the people who were to move about between buildings, and it urged an understanding of the subtle, almost undefinable - but definite - qualities, which had always been related to the meetings of people in public spaces, and it pointed to the life between buildings as a dimension of architecture to be carefully treated.





# Life Between Buildings:



*Necessary activities* - under all conditions - includes those that are more or less compulsory - going to school or to work, shopping, waiting for a bus or a person, running errands, distributing mail



*Optional activities* - only under favorable exterior conditions -







includes such activities as taking a walk to get a breath of fresh air, standing around enjoying life, or sitting and sunbathing .



*“Resultant” Social activities* - include children at play, greetings and conversations, communal activities of various kinds, and finally - as the most widespread social activity - passive contacts, that is, simply seeing and hearing other people.



# Life Between Buildings:

	Quality of the physical environment	
	Poor	Good
Necessary activities		
Optional activities		
"Resultant" activities (Social activities)		

Graphic representation of the relationship between the quality of outdoor spaces and the rate of occurrence of outdoor activities.

When the quality of outdoor areas is good, optional activities occur with increasing frequency.

As levels of optional activity rises, the number of social activities usually increases substantially.



# Life Between Buildings:

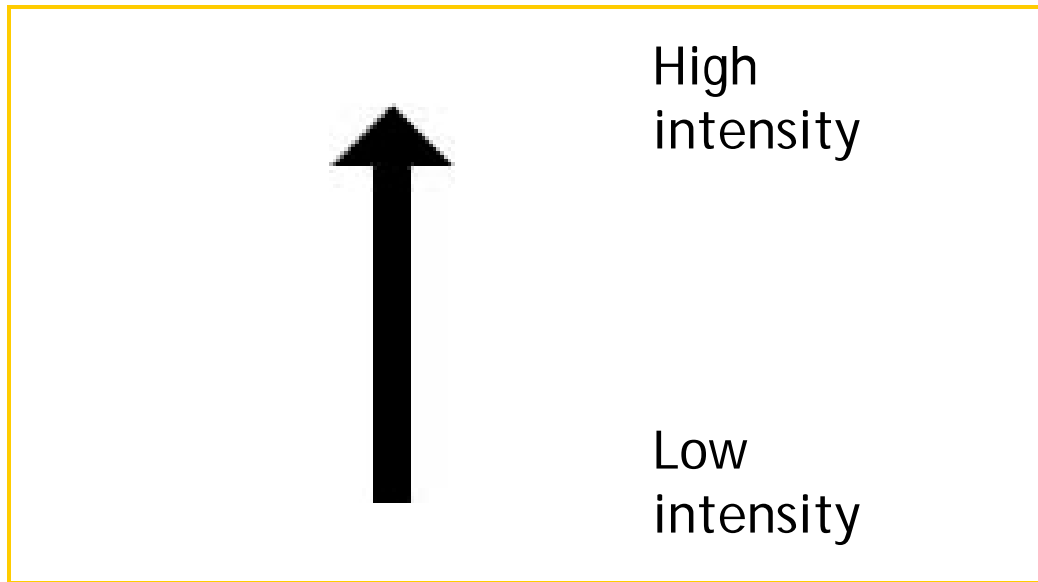
...architects and planners can affect the possibilities for meeting, seeing, and hearing people - possibilities that both take on a quality of their own and become important as background and starting point for other forms of contact .

Life between buildings is not merely pedestrian traffic or recreational or social activities. Life between buildings comprises the entire spectrum of activities, which combine to make communal spaces in cities and residential areas meaningful and attractive.





# Life Between Buildings:



*Life between buildings represents primarily the low-intensity contacts.*

If activity between buildings is missing, the lower end of the contact scale also disappears.





## High Intensity



Close friendships  
Friends  
Acquaintances  
Chance contacts  
Passive contacts ("see and hear"  
contacts)

## Low Intensity

contact at a modest level:  
a possible beginning for  
contacts at other levels



# Life Between Buildings: *activity as attraction*

People are attracted to other people.  
It is generally true that people and human activities attract other people.

If given a choice between walking on a deserted or a lively street, most people in most situations will choose the lively street.

If the choice is between sitting in a private backyard or in a semiprivate front yard with a view of the street, people will often choose the front of the house where there is more to see.

In Scandinavia an old proverb tells it all:  
"people come where people are."





# Life Between Buildings:

Children tend to play more on the streets, in parking areas, and near the entrances of dwellings than in the play areas designed for that purpose but located in backyards of single-family houses or on the sunny side of multi-story buildings, where there are neither traffic nor people to look at.

Sidewalks are, not unexpectedly, the very reason for creating sidewalk cafés . All over the world sidewalk café cafe chairs face the street life.



# Life Between Buildings:

A summary of observations and investigations shows that people and human activity are the greatest object of attention and interest.

*Life in buildings and between buildings seems in nearly all situations to rank as more essential and more relevant than the spaces and buildings themselves.*





# Life Between Buildings: Physical Planning Extremes

One extreme is the city with multistory buildings, underground parking facilities, extensive automobile traffic, and long distances between buildings and functions.

In such cities one sees buildings and cars, but few people, if any, because pedestrian traffic is more or less impossible, and because conditions for outdoor stays in the public areas near buildings are very poor. Outdoor spaces are large and impersonal.

Under these conditions most residents prefer to remain indoors in front of the television or in other comparably private outdoor spaces



# Life Between Buildings: Physical Planning Extremes

Another extreme is the city with reasonably low, closely spaced buildings, accommodation for foot traffic, and good areas for outdoor stays along the streets and in direct relation to residences, public buildings, places of work, and so forth.

This city is a living city, one in which spaces inside buildings are supplemented with usable outdoor areas, and where public spaces are allowed to function.





# Life Between Buildings:

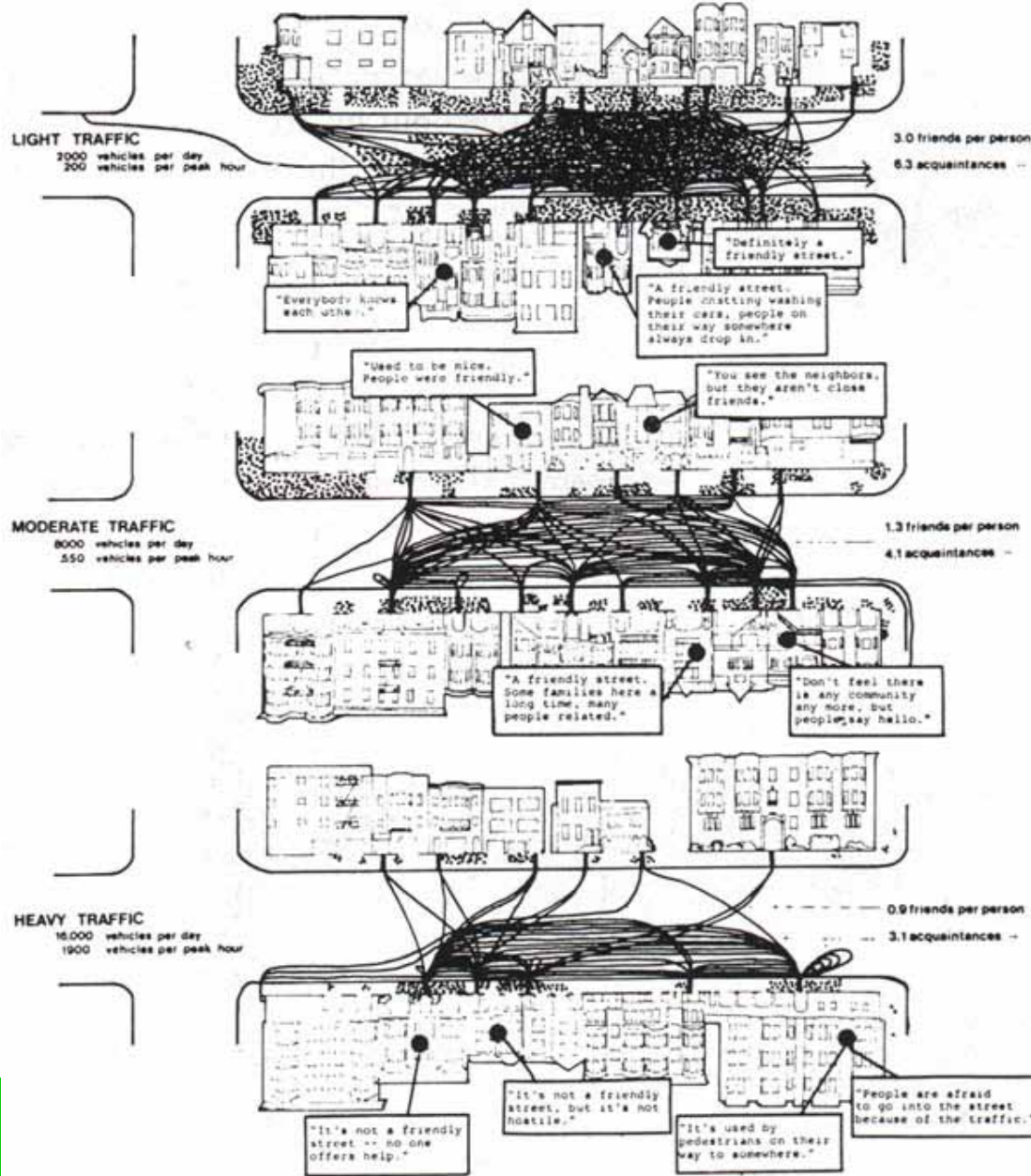
how many, how long, and which activity ???

...it appears possible, in part through the design of the physical environment, to influence the activity patterns in public spaces in cities and residential areas.

Within certain limits - regional, climatic, societal - it is possible to influence how many people and events use the public spaces, how long the individual activities last, and which activity types can develop.



# Life Between Buildings:



# Traffic considerations:

Registration of frequency of occurrence of outdoor activities (dots) and contacts between friends and acquaintances (lines) in three parallel streets in San Francisco.

Top: *Street with light traffic*

Center: *Street with moderate traffic.*

Bottom: *Street with heavy traffic. Almost no outdoor activities and few friendships and acquaintances among the residents.*





European streets often separate pedestrian and vehicular traffic to improve the quality of the urban street life.





Chicago, Illinois:

The "art object" as the attractor for urban spaces.





Often cold climate public spaces are lacking in warmth, intimacy and are dominated by vehicular traffic.





That is not to say that all car dominated urban spaces are unsuccessful.





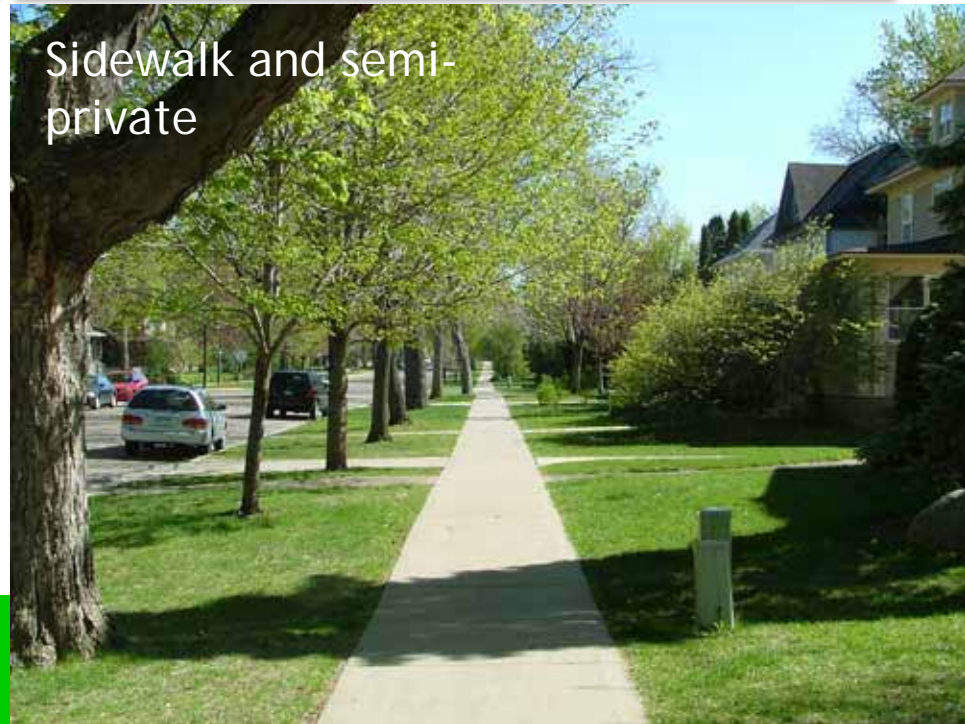
Sidewalk, no semi-private



No sidewalk

In many situations, sidewalks provide a “public zone” for pedestrians to pass in front of private buildings.

In some cases there is also a semi-private/semi-public zone between the sidewalk and the building.



Sidewalk and semi-private





Maintaining public life in interstitial spaces in the winter has inherent problems.



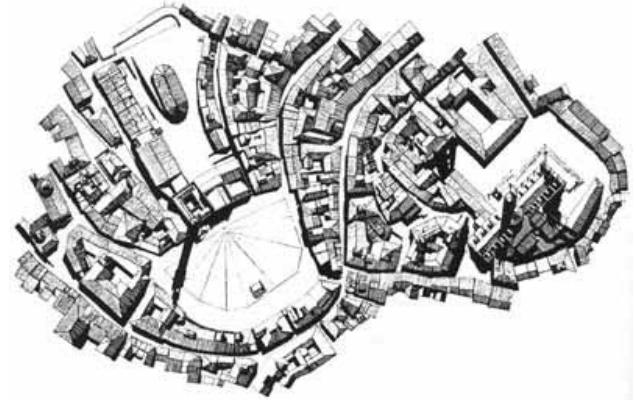


# Life Between Buildings:

## Outdoor Activities and Architectural Trends

### The Middle Ages - physical and social aspects

Planning and planners did exist in earlier periods. The cities that grew up in the period from around AD 500 to AD 1500 were not planned in the true sense. They developed where there was a need for them, shaped by the residents of the city in a direct city-building process. The city was not a goal in itself, but a tool formed by use.



# Life Between Buildings:

## Outdoor Activities and Architectural Trends

### The Renaissance - the visual aspects

Since the Middle Ages has the basis for city planning been radically changed.

The first radical change took place during the Renaissance and has direct relation to the transition from freely evolved to planned cities. The city was no longer merely a tool but became to a greater degree a work of art, conceived, perceived, and executed as a whole.



*Palmanova, Italy (1593).*



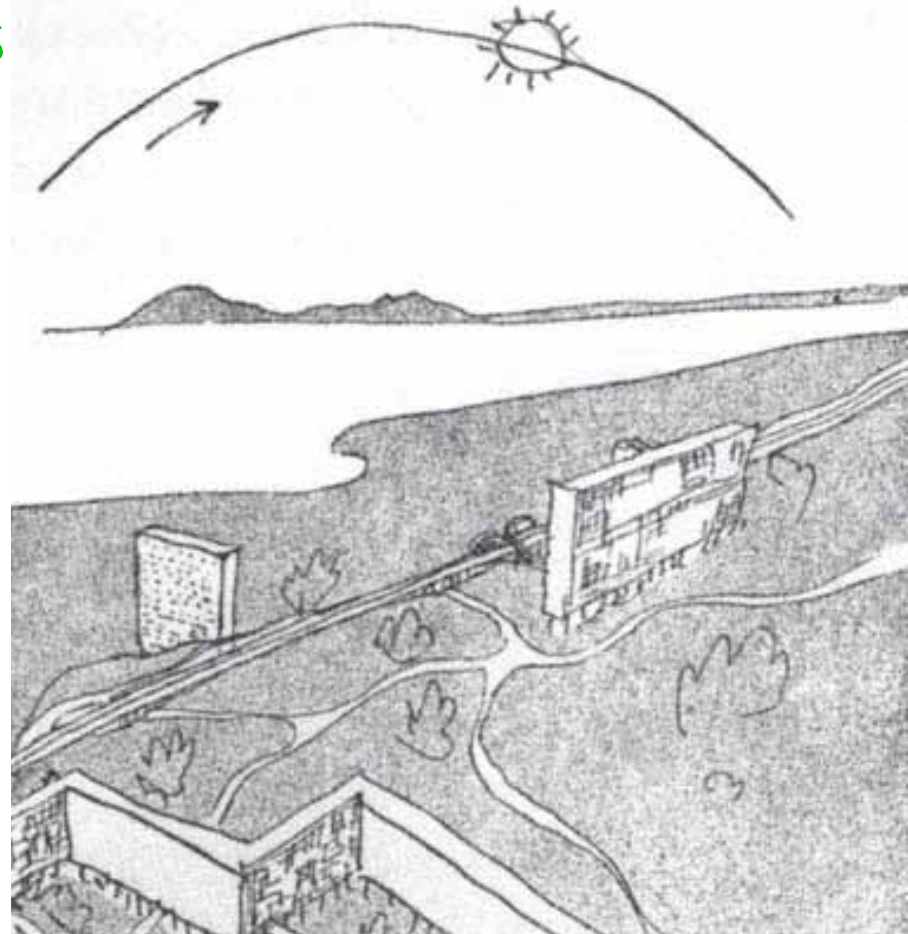
## Life Between Buildings:

The second important development of the basis for planning took place around 1930 under the name of '*functionalism*'.

The basis for functionalism was primarily the medical knowledge that had been developed during the 1800s and the first decades of the 1900s. This new and extensive medical knowledge was the background for a number of criteria for **healthy** and **physiologically suitable** architecture around 1930. Dwellings were to have **light, air, sun,** and **ventilation,** and the residents were to be assured access to open spaces.

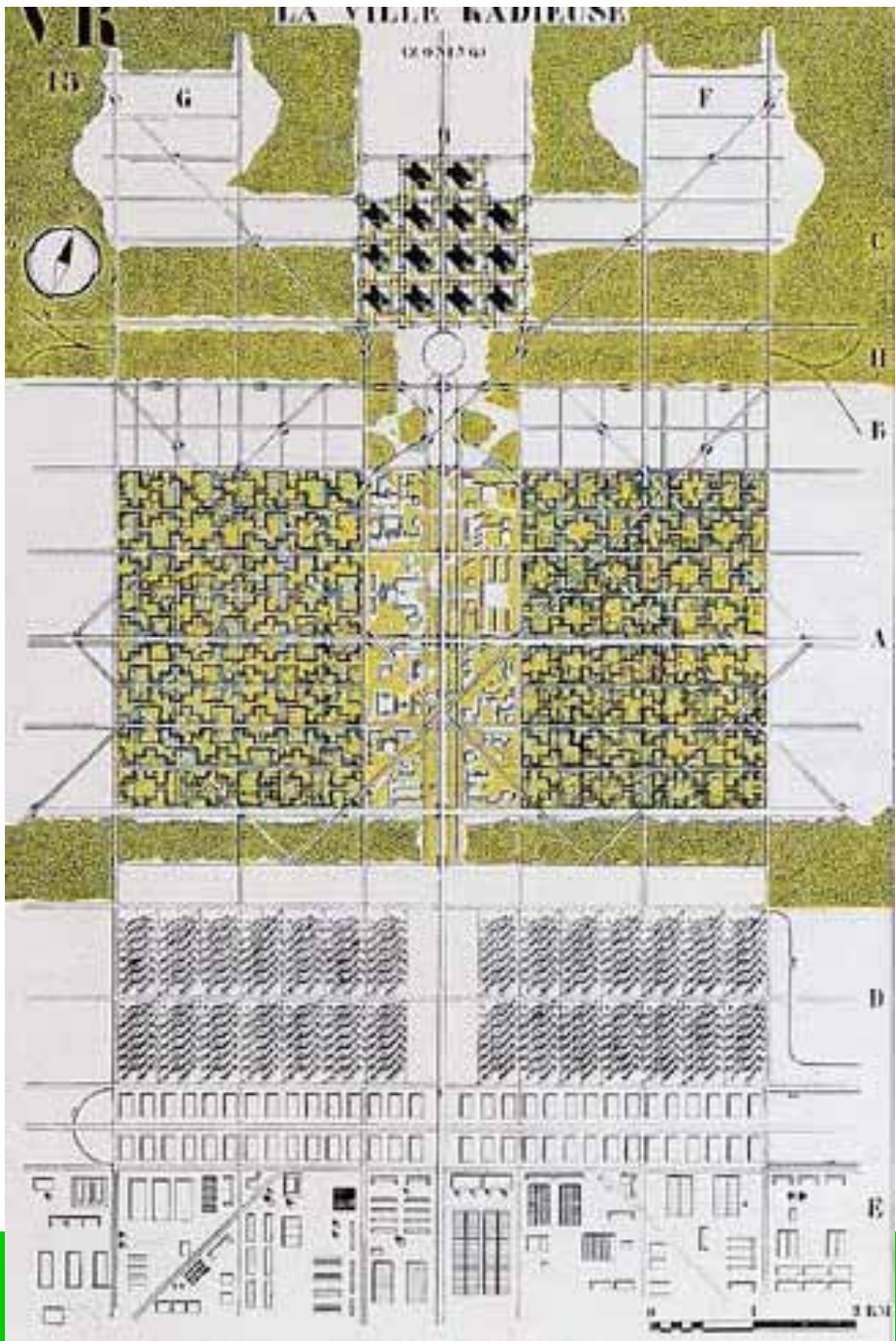
# Life Between Buildings

The requirements for detached buildings oriented toward the sun and not, as they had been previously, toward the street, and the requirement for separation of residential and work areas were formulated during this period in order to assure the individual healthy living conditions and to distribute the physical benefits more fairly.

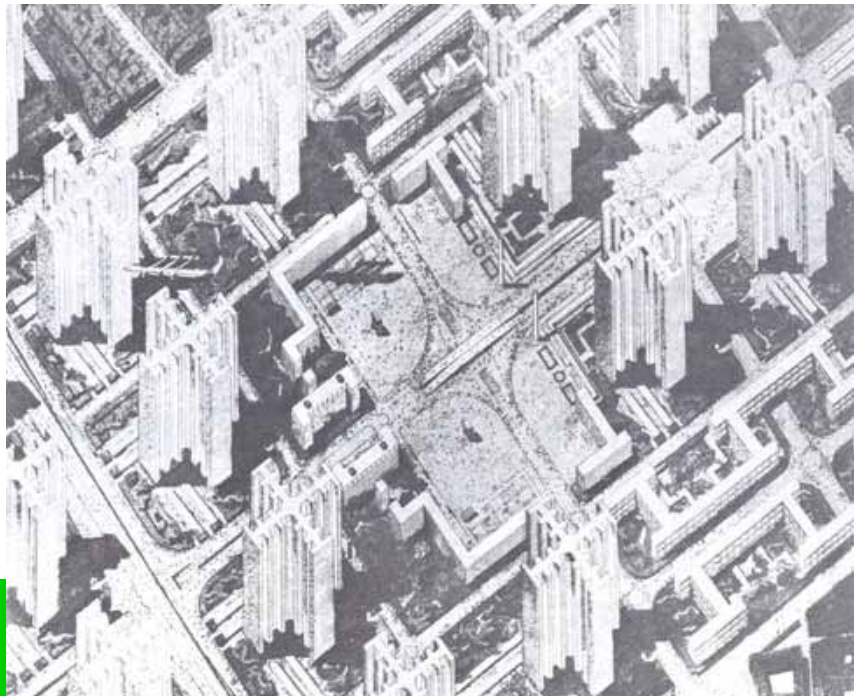


*Emphasis on sun, light, and open spaces and the elimination of public urban spaces are clearly expressed in the illustrations accompanying the functionalistic manifesto of Le Corbusier. ("Concerning Town Planning" )*

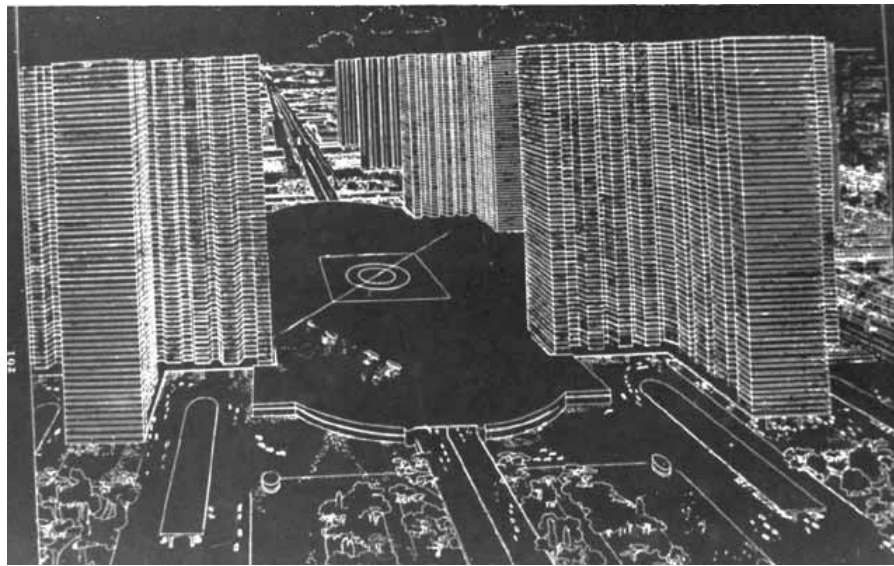




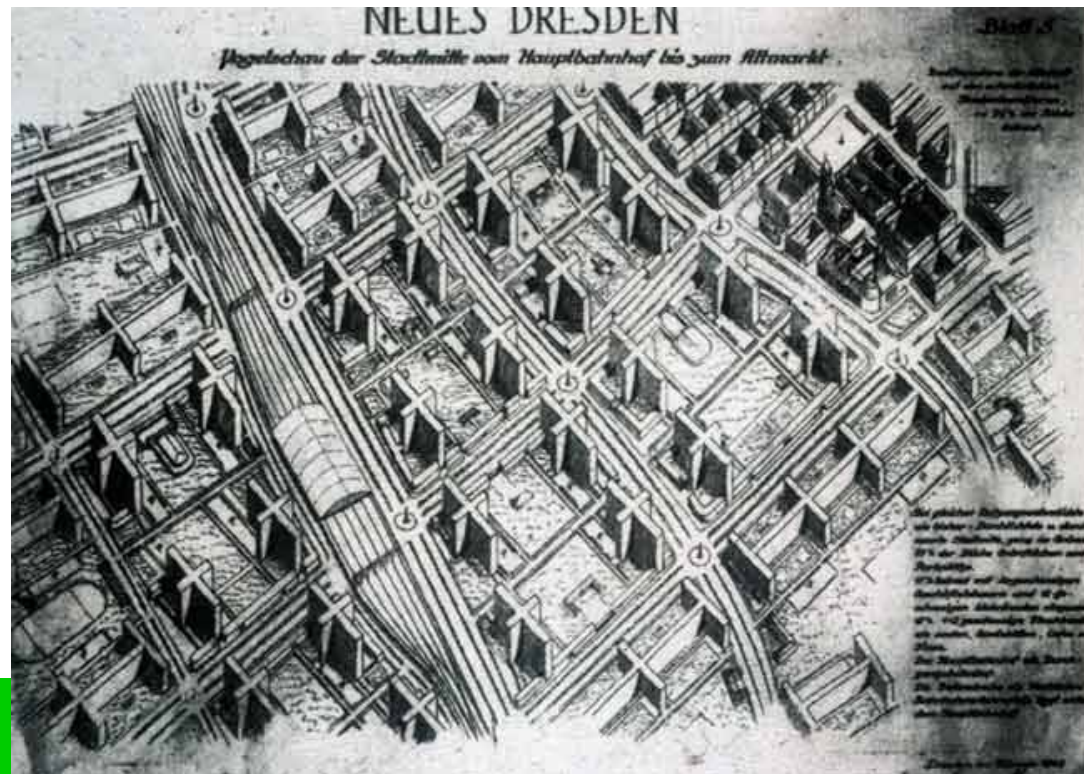
Le Corbusier: Plan Voisin 1926,  
La Ville Radieuse 1930







(C) FLC



In this case the dispersal of buildings to allow light to enter was well intentioned, but killed activity.



# Life Between Buildings:

## The streets that disappeared...

The functionalists made no mention of the psychological and social aspects of the design of buildings or public spaces.

This lack of interest is also evident regarding the public spaces. That building design could influence play activities, contact patterns, and meeting possibilities, to name a few examples, was not considered.

With the advent of functionalism, streets and squares were literally declared unwanted. Instead, they were replaced by roads, paths, and endless grass lawns.



*Condominiums in Toronto*



*Public housing in Berlin*

# Life Between Buildings:

The "late modern" planning basis:

As an alternative to the existing dark, overpopulated, and unhealthy workers' housing, the new, light multistory blocks offered many obvious advantages, and it was easy to argue in their favor.

The consequences for the social environment were not discussed, because it was not recognized that buildings also had great influence on outdoor activities and consequently on a number of social possibilities.

Not until twenty to thirty years later, in the 1950s and 1960s, when the big functionalistic multistory residential cities had been built, was it possible to evaluate the consequences of a one-sided physical-functional planning basis.

[http://www.youtube.com/watch?v=opqn-w\\_4DgA](http://www.youtube.com/watch?v=opqn-w_4DgA)



Pruitt Igoe Housing development.



# Life Between Buildings:

## Functionalistic Planning versus Life Between Buildings:

The spreading and thinning out of dwellings assured light and air but also caused an excessive thinning of people and events.

*(think "End of Suburbia" which you will be watching later this term...)*



# Life Between Buildings:

Single-Family Housing Areas - life around but not between buildings

Parallel to the development of functionalistic multistory buildings, low, open, single-family housing areas, made possible by the increased use of automobiles, have been extensively developed.

- Desirable conditions in the form of gardens for private outdoor activities.
- Communal outdoor activities reduced to a bare minimum because of street design, automobile traffic, and especially the wide dispersal of people and events.





# Life Between Buildings:

In these areas the **mass media** and **shopping centers** have become virtually the only contact points with the outside world because life between buildings has been phased out.

The telephone, television, video, home computers, and so forth have introduced new ways of interacting. Direct meetings in public spaces can now be replaced by indirect telecommunication.



West Edmonton Mall, Alberta

# Issues of Density

There is a mass exodus of people from rural to urban settings.

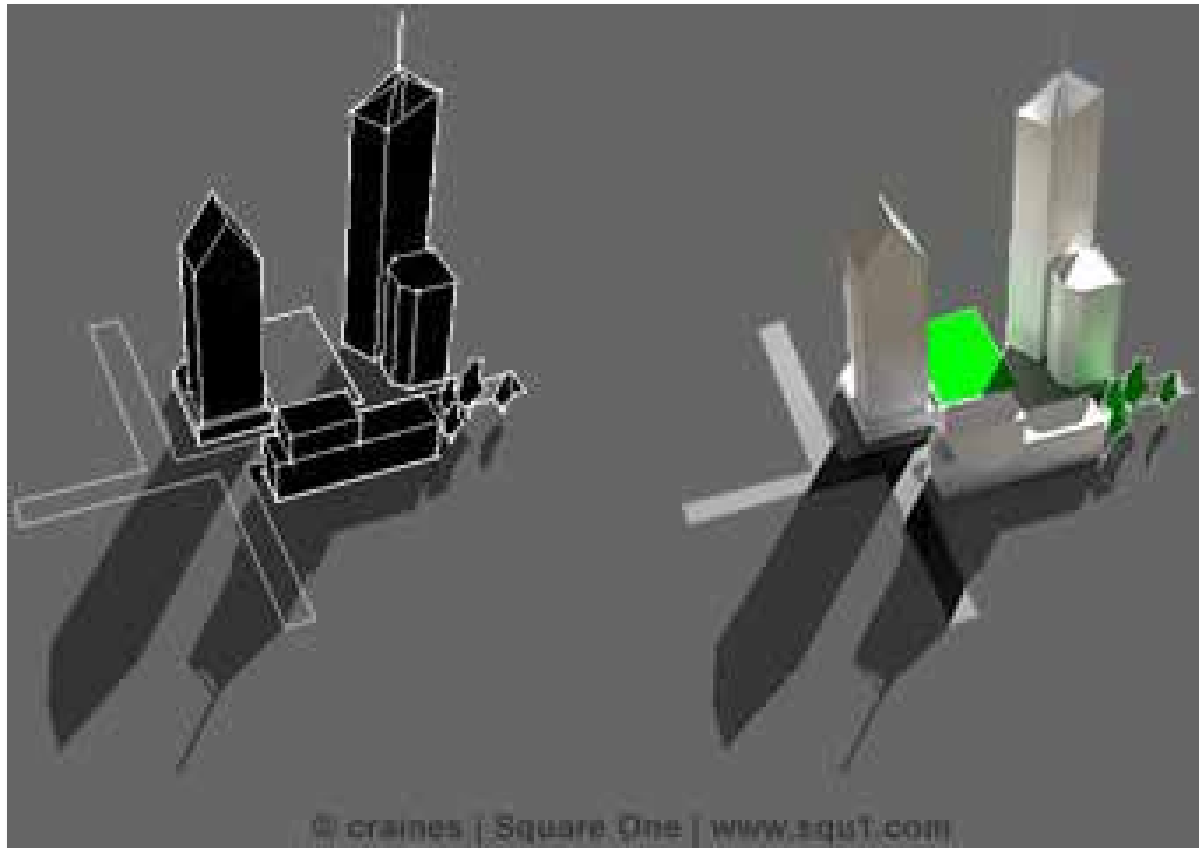
This is bringing about density related problems.



# Solar Access

Higher densities might solve some issues of dispersal and sprawl, but tall buildings bring issues of access to light and overshadowing.



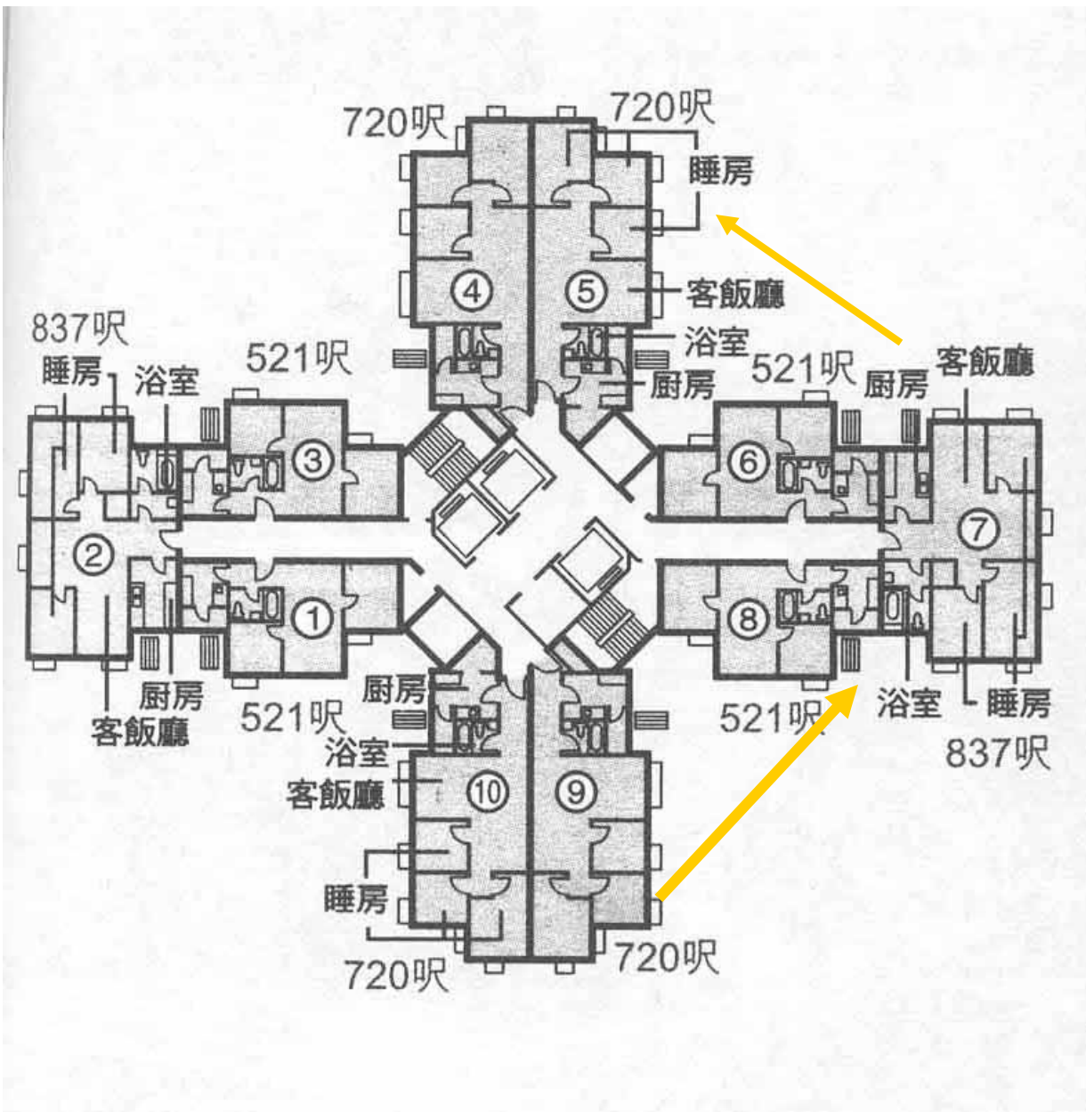


Shadow studies must be carried out in and around the building site to understand the effects of taller buildings.

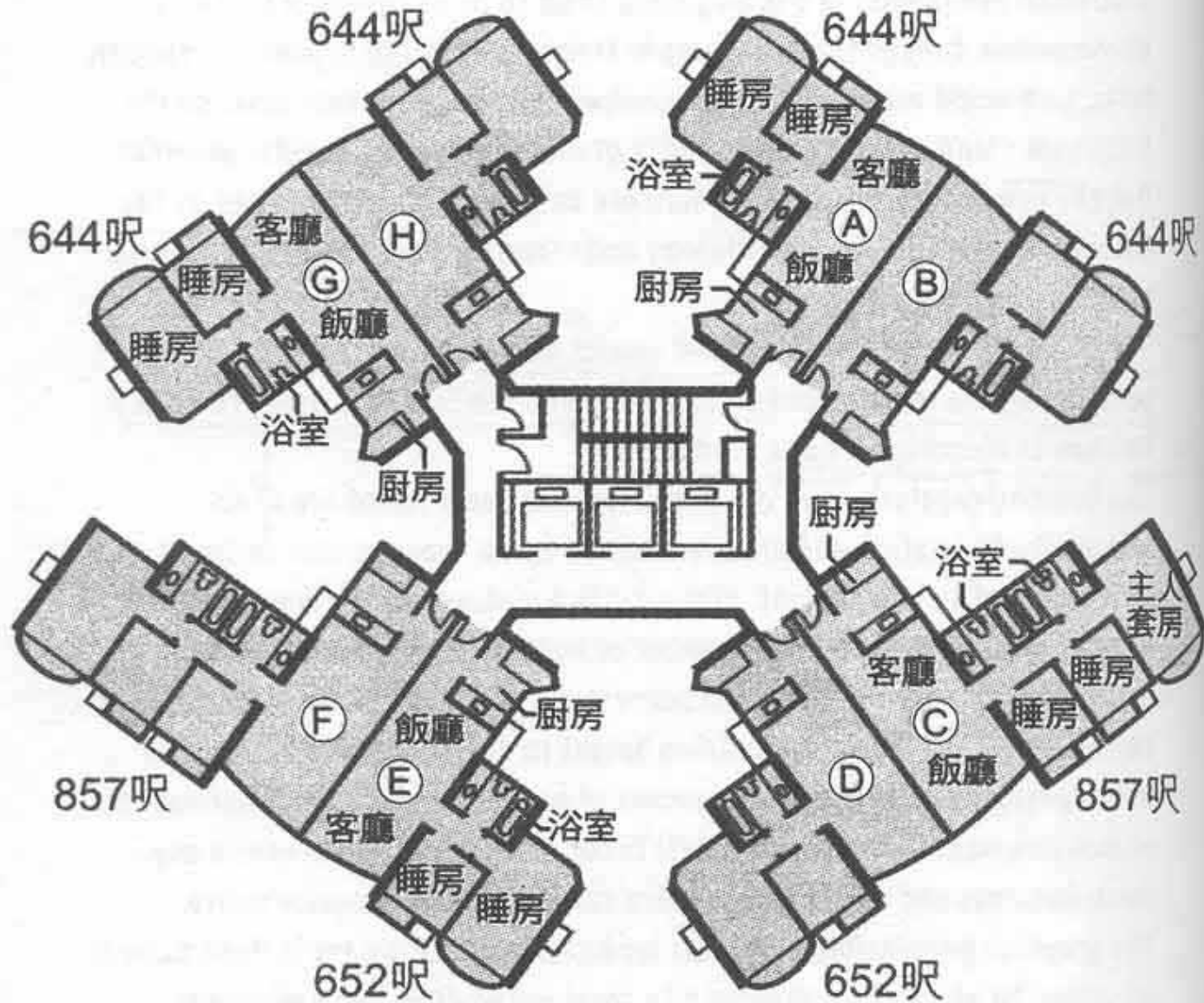




Additionally, there are issues of privacy and overlook from one unit to the next that must be addressed.







# Solar Access



*North-south canyon effect at Bain Avenue Coop, Toronto:*  
Even low rise buildings can have difficult shadow conditions at low sun times of the year.

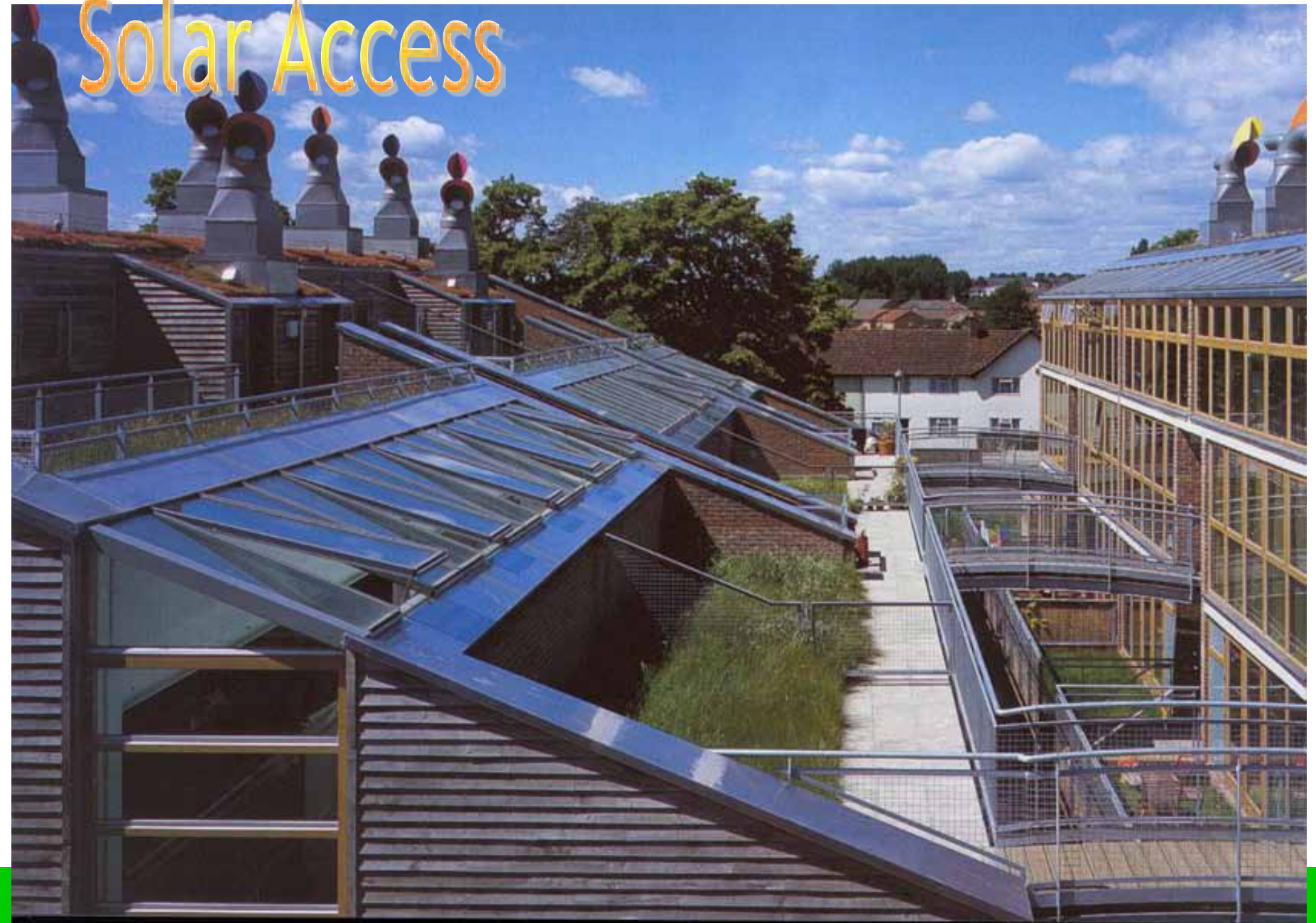


# Solar Access



## BEDZed in England

# Solar Access





# Solar Access





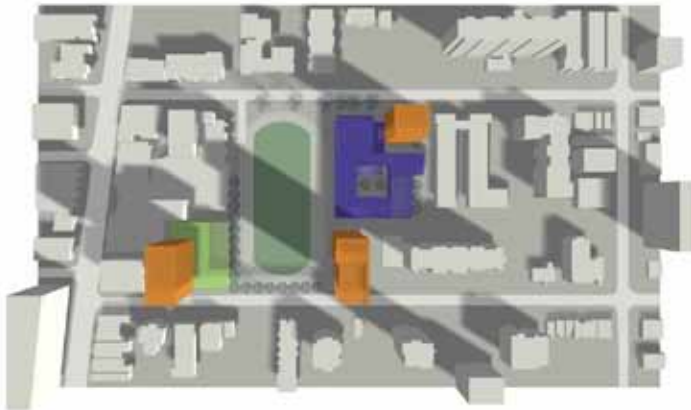
Site Redevelopment Study  
TDSB/NTCI

## Final Design Proposal

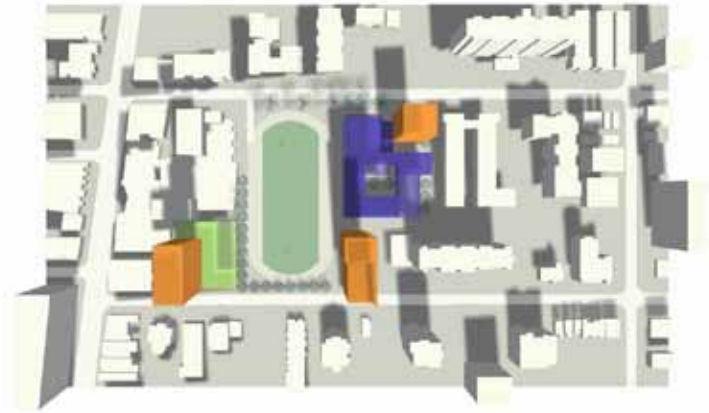
scenario A  
site plan



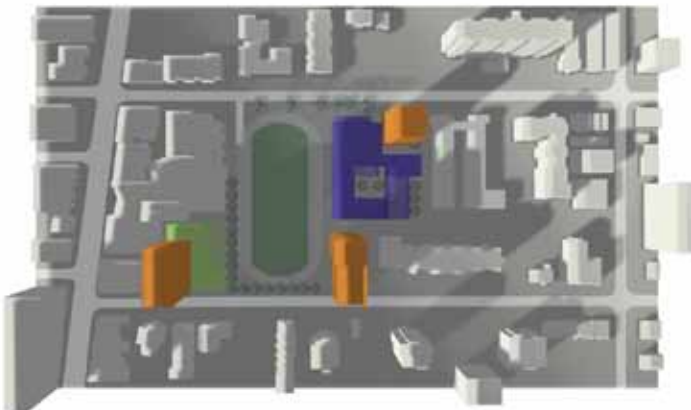




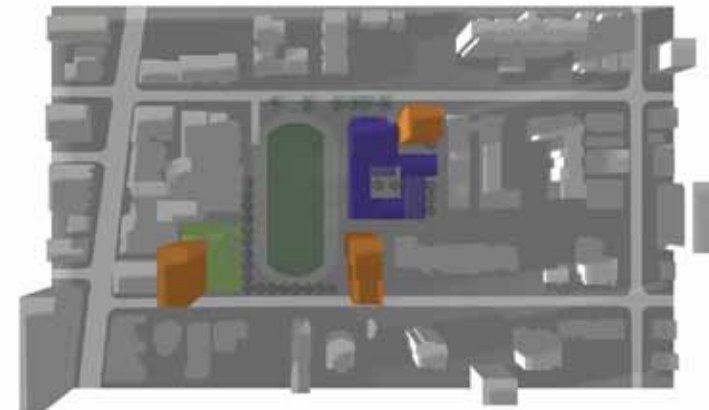
9:00 am



12:00 pm



3:00 pm



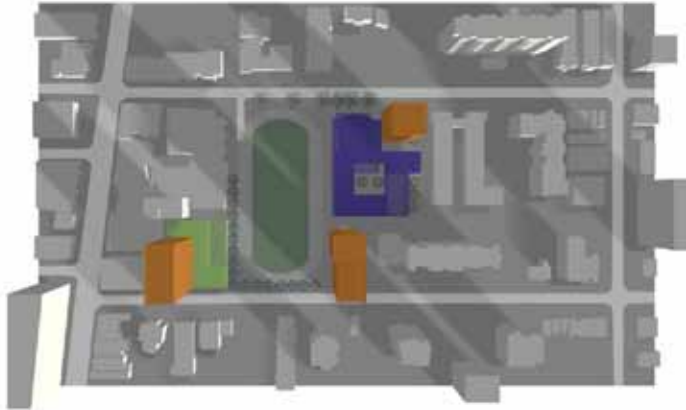
5:00 pm

Site Redevelopment Study  
TDSB/NTCI

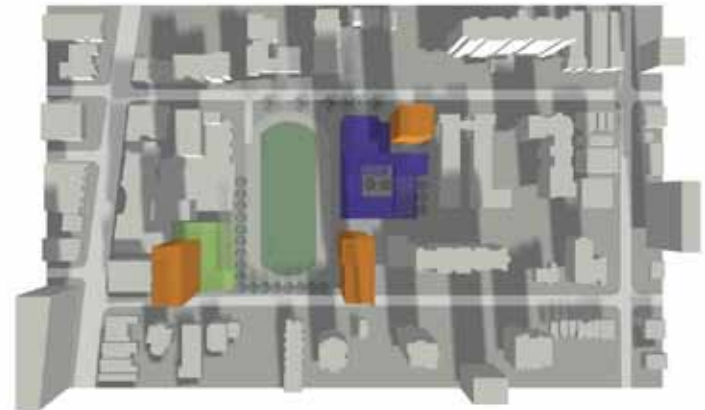
Final Design Proposal  
scenario A  
autumnal equinox / shadow study



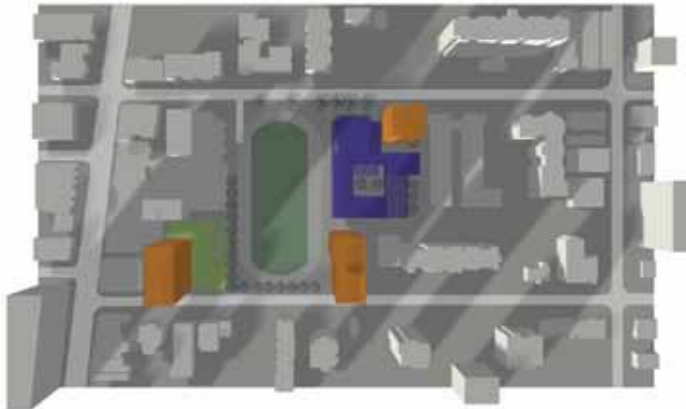
Teepie Architects™



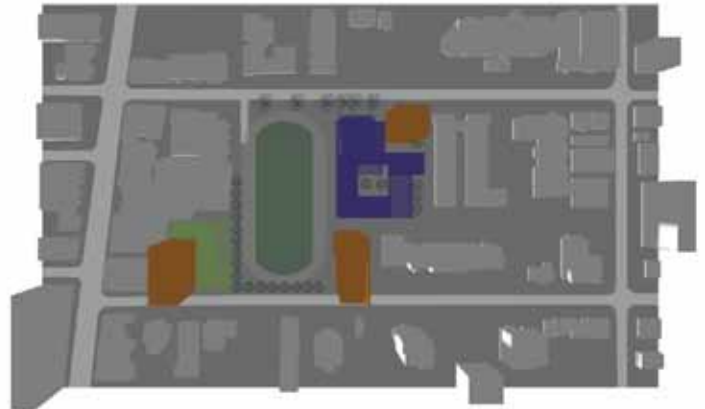
9:00 am



12:00 pm



3:00 pm



5:00 pm

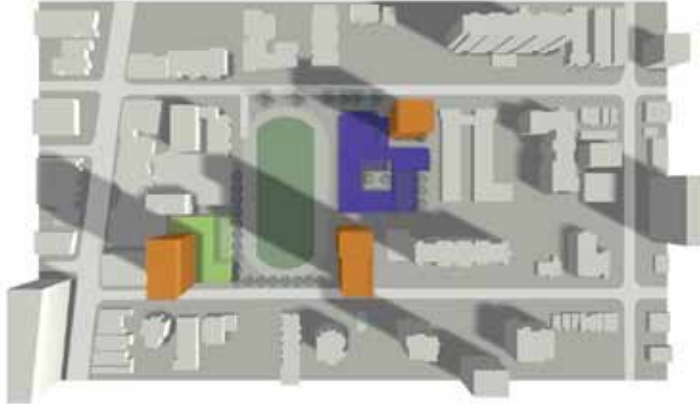
Site Redevelopment Study  
TDSB/NTCI

Final Design Proposal  
scenario A  
winter solstice / shadow study

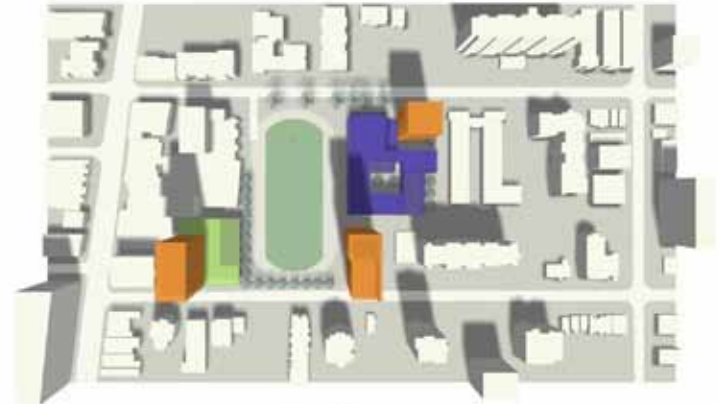


Teepie Architects™

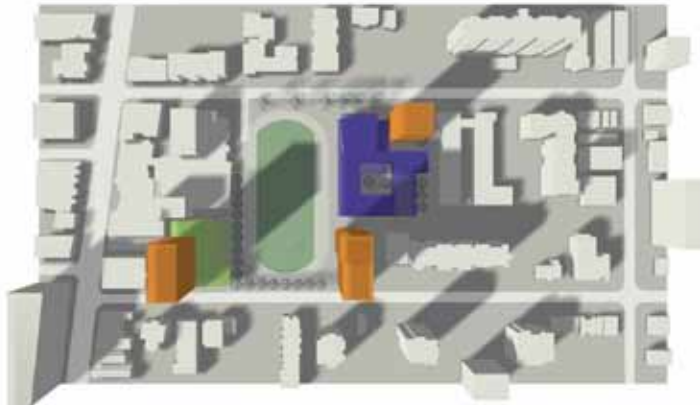




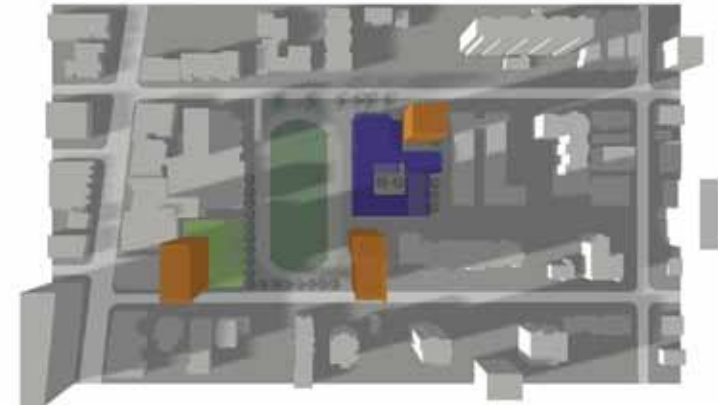
9:00 am



12:00 pm



3:00 pm



5:00 pm

Site Redevelopment Study  
TDSB/NTCI

Final Design Proposal  
scenario A  
vernal equinox / shadow study



Teepie Architects™



9:00 am



5:00 pm



3:00 pm

Site Redevelopment Study  
TDSB/NTCI

Final Design Proposal  
scenario A  
summer solstice / shadow study



Teepie Architects™