The Erect Transect

Tools to Purposely Plan and Design for the Complexity of Building 21st Century Cities

Draft Presented by Howard Blackson (Borrowing heavily from the work of Leon Krier, Andres Duany and Jan Gehl)

Contact Information:

Howard M. Blackson III, CNUac

Urban Design Studio Director

AVRP Skyport

703 16th Street, Suite 200

San Diego, California 92101

hblackson@avrpstudios.com

619| 955-2559

https://howardblackson.com/

Twitter: @hblackson

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CONTENT

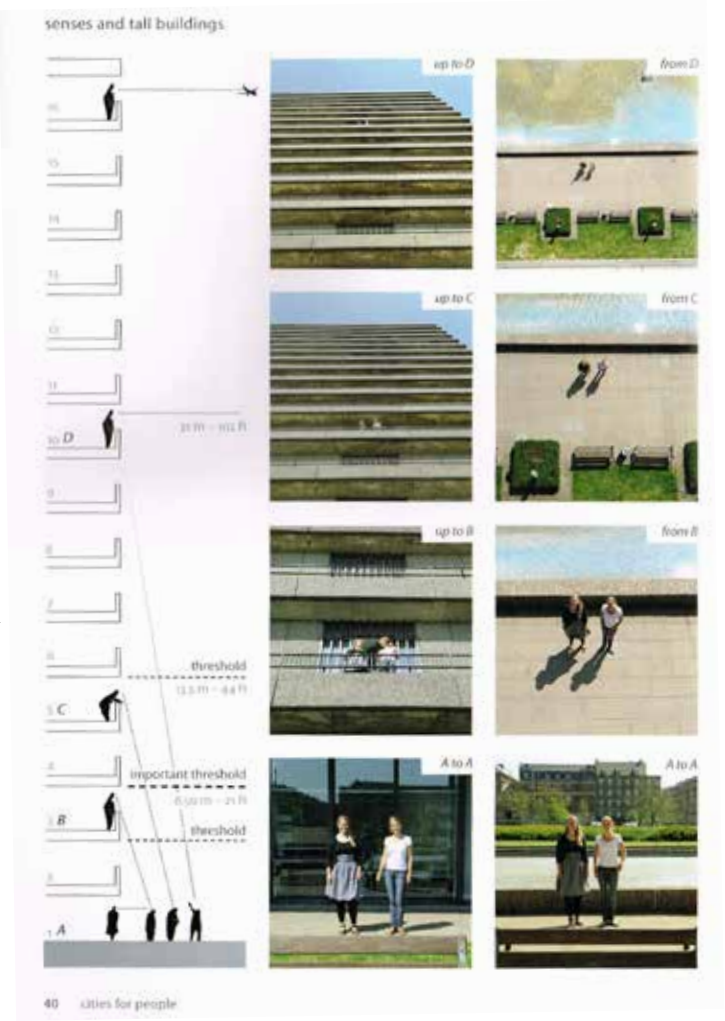
We are attracted to authentic places. And our major city downtowns provide us with either extremely comfortable and warm personal experiences or exhilarating and cold impersonal experiences.

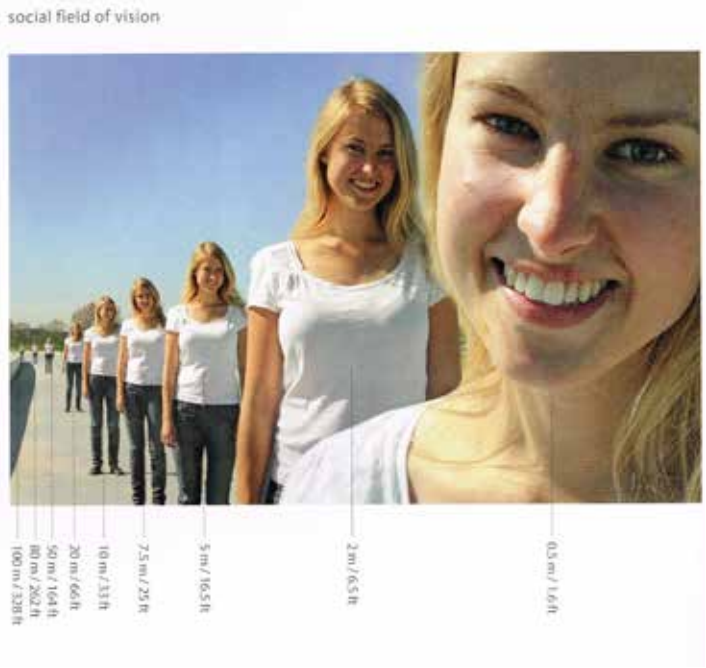
The idea of a 'vertical' transect was born from three fathers. First, Andres Duany's urban to rural transect laid the groundwork for conceptualizing context by types of places. Second, Jan Gehl's book, Cities for People, and the relationship we have with each other at different distances (images to the right). And, third, was Leon Krier's abhorrence of towers as mechanical suburban tools, and filling the need to find a better approach to vertical villages.

The premise is to make towers more human-based than mechanical-based. Humans are able to communicate intimately from 2 to 25 feet, approximately 3 floors up vertically. Humans are able to physical walk up comfortably up to 4 to 6 floors, 50 to 65 feet, vertically. These thresholds create approximates for context zones that move vertically from a street communication context to a block to block communication context, to a city-wide and regional context above. These physical human relationships are basis for the vertical transect context setting.

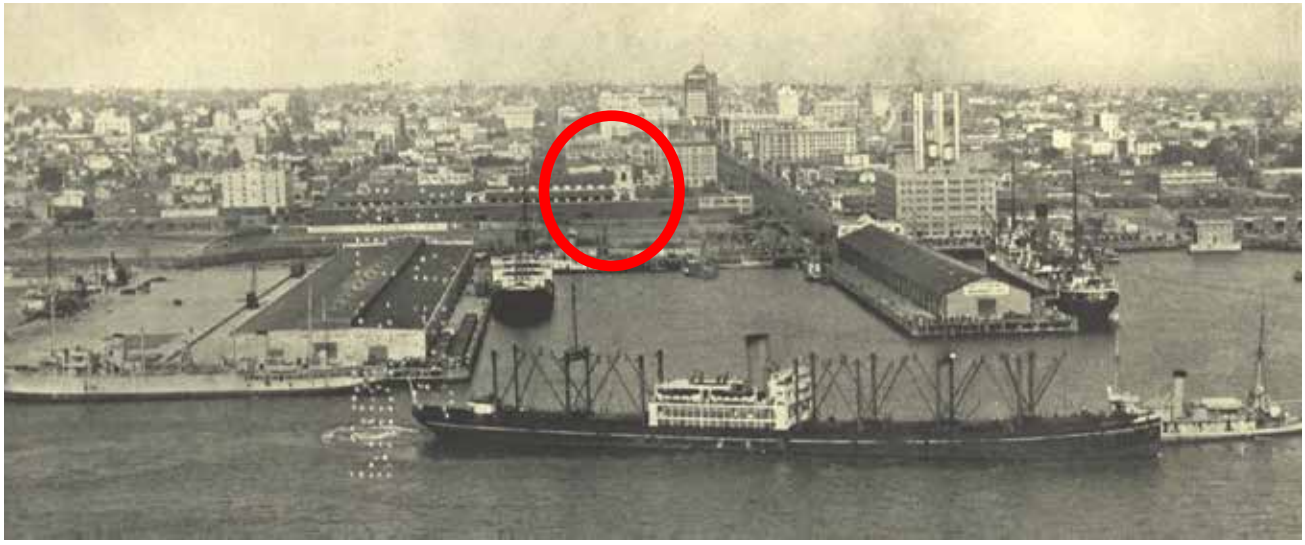
My city has taken baby steps from outlawed urbanism ('60s single-use zoning), to downtown sub-urbanism ('80s drive-thru Jiffy Lubes), to 'safer' Vancouver urbanism ('00s single point towers surrounded by suburban townhouses). And, over these 40 years this one truth has been drummed into our downtown urban design consciousness, "just get the ground floor right" and everything else will be fine.

With this 2-dimensional base being well laid, downtown agencies are successfully getting new developers to build their 3-dimensional building's ground floors in a more humane manner. And nobody dares to dispute getting this first ground floor layer right. The 2D traditional urban street pattern has crept up to shape the 3D base of new architectural design… again, in a more traditional, humane manner.



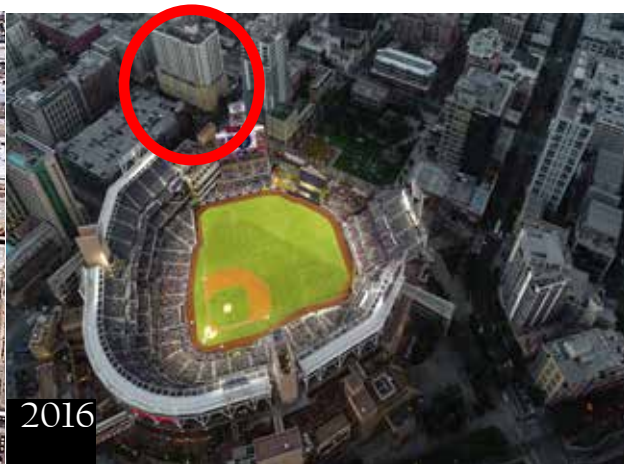


Downtown San Diego, 1926



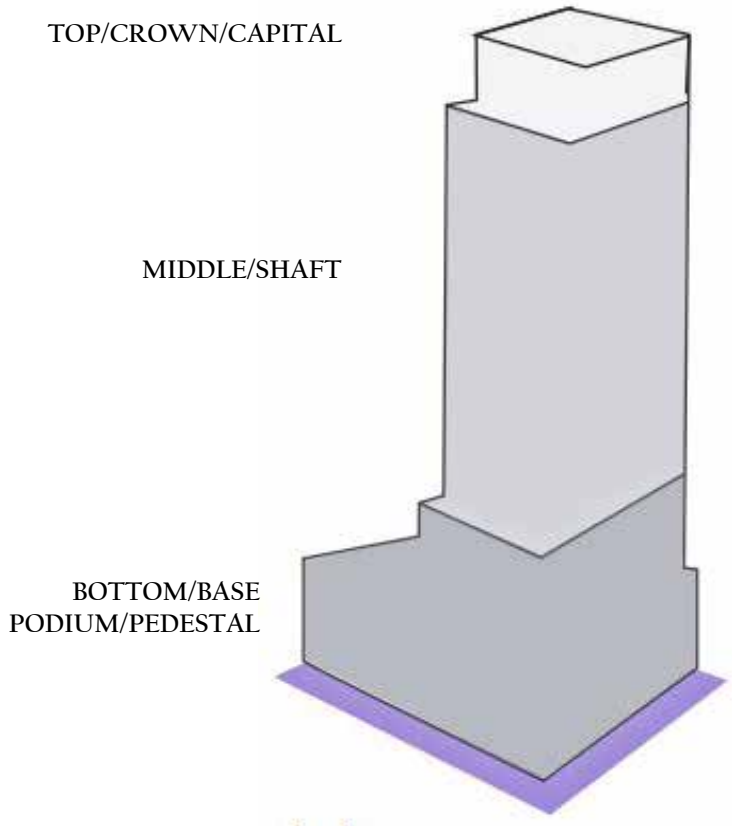
Downtown San Diego, 2016

The skyline of San Diego has changed dramatically within the past century (above). It was not an important city at the turn of the century, and didn't really get 'rich' until the late mid-century along with the rise of automobiles as the dominate form of mobility. Downtown wasn't valuable enough until the 1990s to build the majority of towers we see today (below). The red circle denotes a building found in both sets of images.



At the turn of the last century, the new technology steel frame construction enabled high-rise buildings. These were built in a context that did not exist before.

Classical Column Form



Over a century ago, Louis Sullivan, HH Richardson and others rebuilt Chicago after its fire using the new construction technology that steel brought to building. That combination of steel and fire led to the creation of the tower as a new building type. Being without precedent these neoclassical, Romanesque, and Gothic revivalist designers of that time smartly relied upon the classical column structure to design towers with a base, shaft, and cornice. Unreinforced concrete and wood-frame technology rarely exceeded six floors prior to steel frames.

Modernisms 'man-as-a-machine' doctrine isolated these new towers up and away from civilization as they soared to great heights. Today, after 100-plus years of building these self-referentially arranged towers a contemporary vertical context has been created and now exists. Traditional designers have had to work very hard since the 60's modernist crescendo to get tower construction at the street level to be more humane.

The Form Follows Function dictum of a tower is based on the internal function of the mechanical building in the abstract. Sullivan used the following four zones: below grade mechanical; ground floor base; mid-building offices; and, the top level terminating or capping the building.

And, after shifting towards a more traditional base/ground floors, the upper floors are where we find the last bastion of modernist/mechanical architecture fighting for survival in the materials, shapes, forms, and style of the building's upper floors. This garish, look-at-me architecture still reigns in this narrow 35 to 140 feet range above the ground floor.

Contemporary architecture is expressed today in 4 basic self-referential patterns as applied throughout the world. These are mechanically-based and usually lack one of the three traditional column elements.

Perverted Column

Shapes and Sculpture

Combinations

Mechanical Patterns

Mechanical Floor Repetition

DOWNTOWN PATTERNS

Vancouver, Canada

A relatively contemporary city built from the value shift of Hong Kong being turned over to Chinese rule. The Vancouver Model is a tall, skinny, single-core, small floor plate high-rise building with a townhouse podium now ubiquitous throughout the world.

Barcelona, Spain

A distinctively low-rise city punctuated with high-rise public buildings, notably the sculptural Sagrada Familia church building.

Abu Dhabi, United Arab Emirates

Shapes and sculptural building forms as expression of opulence. Individual set pieces scattered in pods of similar-scale and pattern development with the premium on private views.

Fortaleza, Brazil

The mechanical repetition of floors and balconies set in a vertical tower pattern. These buildings express commerce and value in private views.

Taipei, Taiwan

The mechanical repetition of floors and balconies set in horizontal tower pattern. These buildings express the value of a private lifestyle in a communal living setting.

Transforming Towers from Self-Referential, Singular Buildings to Context-Sensitive Design

From T6 Street Level To T3 Sub-Urban Edge

Privacy is at a premium in this zone. Beyond human connectivity and scale, regional design considerations begin with incorporating endless vistas, such as oceans, mountains (Mexico if in San Diego), and beyond the city into these penthouse units. Balconies should be set within the building form to mitigate natural fear and exposure to elements found at extreme heights. Public spaces include observation decks. Other uses include restaurants, bars, offices, and housing.

REGIONAL SCALE (T3)

Inhabitants share a visual relationship with the city, from the edge of downtown to its core. This section stretches with the level of urban intensity surrounding it. Homes, work spaces, hotels, shared housing, plus viewing patios, pools, community rooms. Balconies alternate.

CITY SCALE (T4)

Human connectivity reaches across the street, usually 60- 80 feet wide, with facial and voice recognition. Balconies front onto streets and are more public. More uses are allowed on this level than in the upper zones. Public spaces include decks and community rooms.

BLOCK SCALE (T5)

Human connectivity is at a premium on and across the street. Where the city meets the building, people engage face-to-face at street level. This zone allows for the most intense mix of uses and public spaces. Balconies front onto the street.

STREET SCALE (T6)

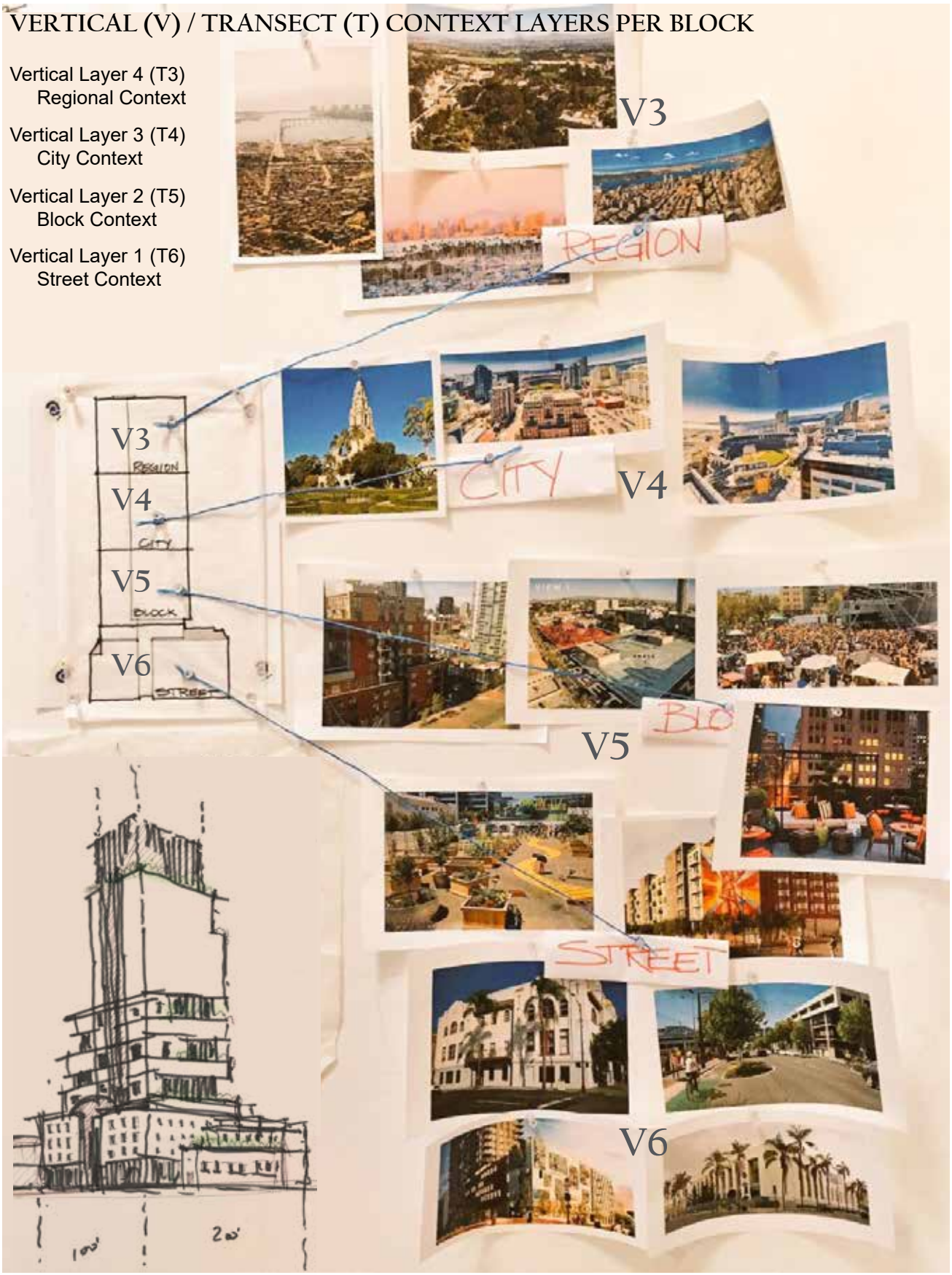
VERTICAL (V) / TRANSECT (T) CONTEXT LAYERS PER BLOCK

Vertical Layer 4 (T3)
Regional Context

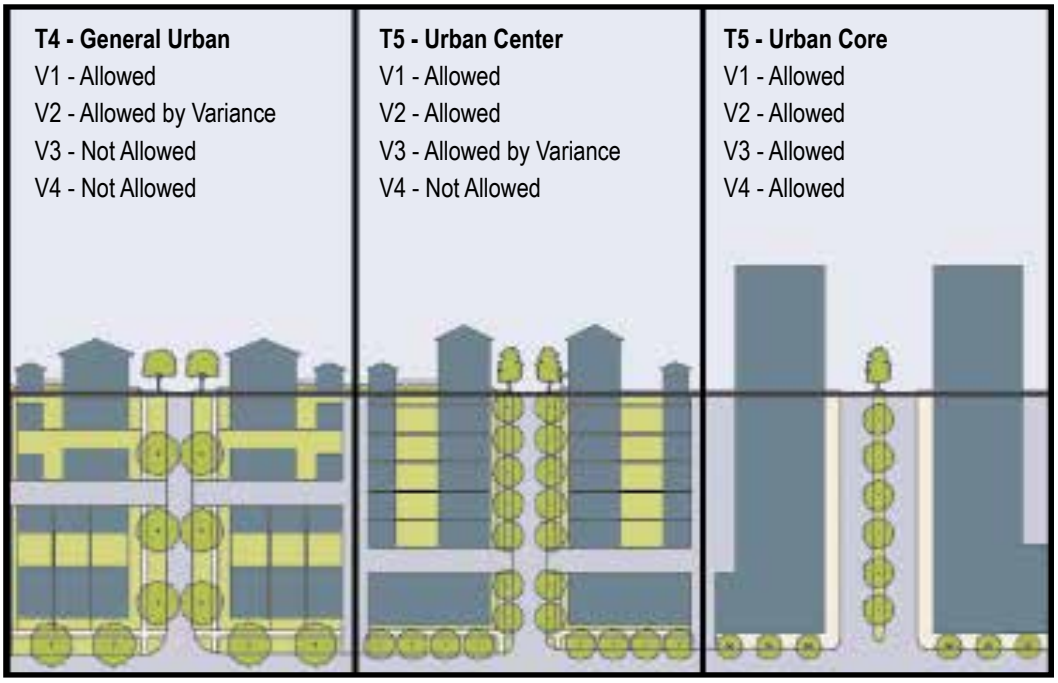
Vertical Layer 3 (T4)
City Context

Vertical Layer 2 (T5)
Block Context

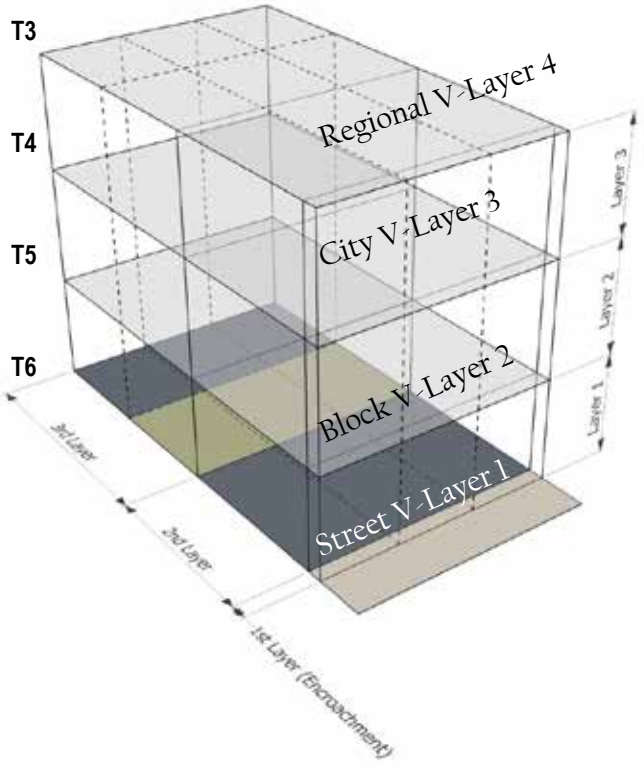
Vertical Layer 1 (T6)
Street Context



CODING HORIZONTAL PLACES PER TRANSECT ZONE



CODING VERTICAL PLACES PER LOT LAYER/BLOCK FACE



3-D Urbanism / Vertical Layers:

The experience of the pedestrian is determined by their access to buildings alongside. Pedestrians are mostly likely pleased by, from ease access to less stairs, storefronts, followed by porches, fenestrated walls, and deep landscaped yards. Ground floor frontages most repellent to pedestrians are, in order from bad to worse, are garage doors, blank walls, open parking lots, unbuffered parking structures, under building parking, and open service areas. These are should be regulated to service lanes and B-Streets. The experience of the upper floor inhabitants is determined by their access to places within the building. Inhabitants are most likely to be pleased by privacy, views down to the street, views within street wall. Level of architectural review/control, from more to less: fronting onto public spaces, fronting onto A-Street, fronting onto B-Streets.

V-Layer 1 (Encroachment):
- Length of Ground Floor Bays: 16 feet on average / 32 feet maximum
- Height: Ground to 16 feet on average (+4' above grade) / 22 feet maximum
- Architectural Elements:
  - Building Types (Function):
    - Courtyard
    - Flex or Townhouse
    - Stacked Flat
    - Shop or Commercial Shell (warehouse)
  - Frontage (Access) Types:
    - Gallery (Commercial/Office)
    - Arcade (
    - Shopfront and Awning:
      - Base
      - Plate
      - Fenestration
      - Beam (Shopfront Cornice Line)
    - Common Entry (at grade - Commercial)
      - Planter
      - Entry Bays
    - Forecourts (+4 feet above grade)
      - Gardens
      - Off Loading
    - Stoop and Light Court (+4 feet above grade)
    - Terrace and Dooryard (at grade)
  - Transition Line

V-Layer 2: The ground floor frontage types influence the configuration/orientation/function of the upper levels.
- Length of Upper Floor Bays: 16 feet on average / 48 feet maximum
- Height: Second Floor (from top of Level 1 transition line) 25 feet to 45 feet (Floors 2 - 3)
- Architectural Elements:
  - Building Types:
    - Townhouse (Terrace)
    - Flankhouse
    - Stacked Flat
    - Office
    - Warehouse
  - Access Types:
    - Corridor/hallways
    - Fenestration
    - Balconies
  - Recess Line
  - Cornice Line
  - Transition Line

V-Layer 3: Horizontal connections are more important than Vertical connections.
- Length of Upper Floor Bays: 16 feet on average / 48 feet maximum
- Height: 46 feet to 64 feet (and beyond)
- Architectural Elements:
  - Cornice Line
    - Parapet Line
    - Eave Line
  - Roof

FIGURE-GROUND STUDY PER HORIZONTAL URBAN PATTERNS

Below, Leon Krier studied the figure-ground ratios of city urban patterns to understand how to 'tune' the public and private spaces from too little to too much, and finally the optimum amount.

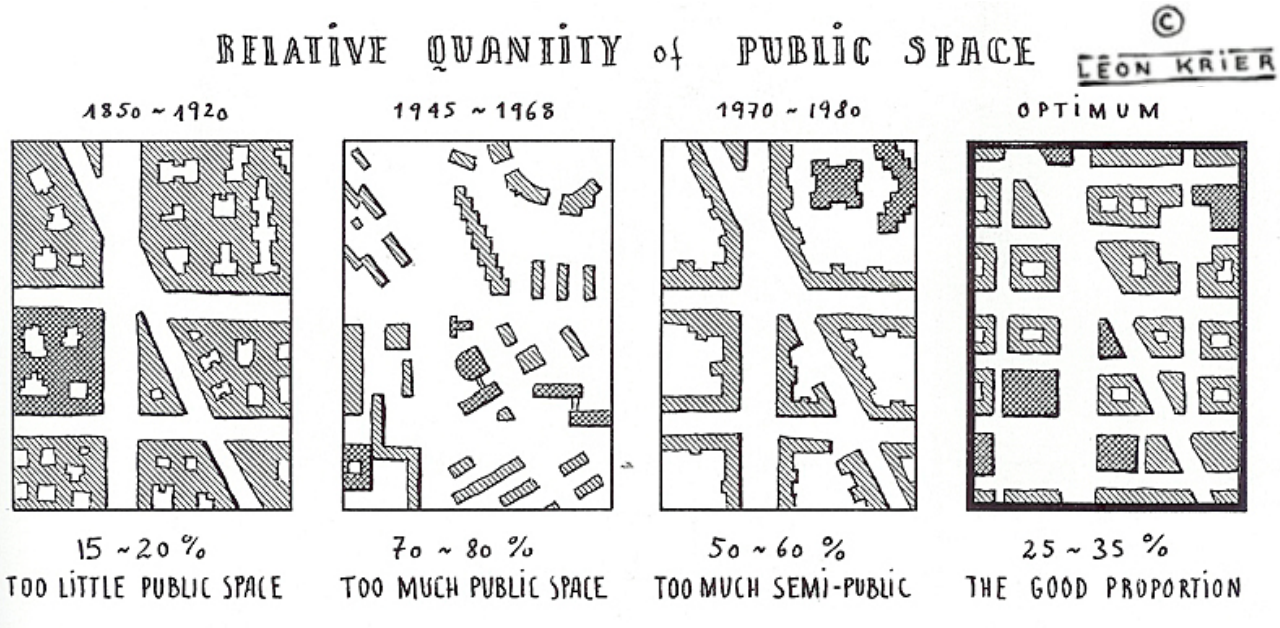


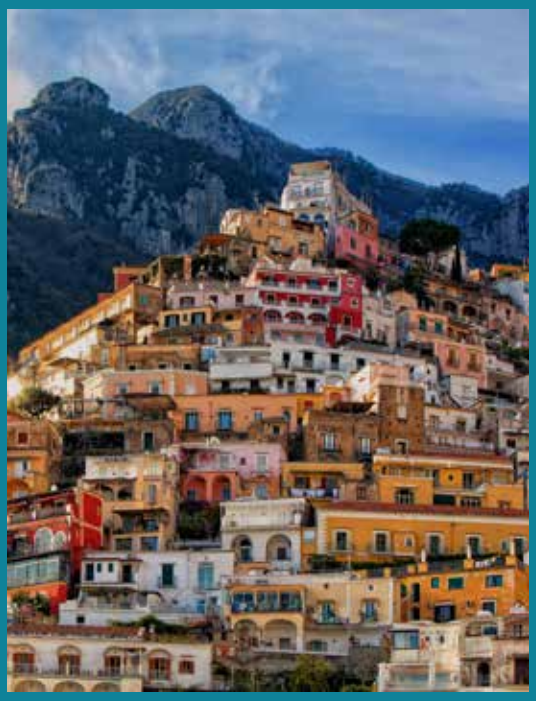
FIGURE-SKY STUDY PER ARCHITECTURAL PATTERNS (More to Less Urban)

Below is an illustrative study of the figure-sky ratios of the city architectural patterns to understand how to 'tune' the open public sky-space in relationship with built private figure spaces from too little to too much, and finally the optimum amount. This graphic illustrates the Figure-Sky differences between Chicago, Vancouver, and San Diego's vertical intensity understanding the less intense skylines are able to transition to more intense.

Scenario 1	Scenario 2	Scenario 3
		
San Diego, California, T6 Zone **E Street/10th - 11th St.** 200 Units per Block 60% Building / 40% Public Space Buildings from single-story to 50-story City Got Rich in 1957 - Predominately Mid-Century Modern Few A Streets / Mostly B Streets No Alleys / Few Paseos	**Vancouver, BC, T6 Zone** **Robson/Richards to Hamilton St** 350 Units per Block 65% Building / 35% Public Space Buildings from 4 to 50-stories City got Rich in 1991 - Predominately Point Towers+Wrap Few A Streets / Mostly B Streets Many Alleys / Many Paseos	**Chicago, Illinois, T6 Zone** **N. Michigan/Ohio to Illinois** 550 Units per Block 70% Building / 30% Public Space Buildings from 6 to 100-stories City got Rich in 1890 - Predominately Traditional Towers Many A Streets / Many B Streets Few Alleys / Many Paseos

HILLSIDE TOWNS

Switzerland's Jungfrau valley has a series of towns, from Lauterbrunnen up to Wengen and Mürren villages, which are a regional-scale variant of the vertical transect. Connected by rail gondola, and trails, each town becomes less urban and more rural as they rise from the valley floor. Italian hill towns have a layered context at the city/town-scale. This study is looking at the Vertical Transect at the Block-Scale.



CHICAGO TRIBUNE TOWER COMPETITION

The 1922 Chicago Tribune Tower competition influenced the future of tower design. The results were published nationally, and easily compared the stark contrasts between ideas from the world's foremost architects.

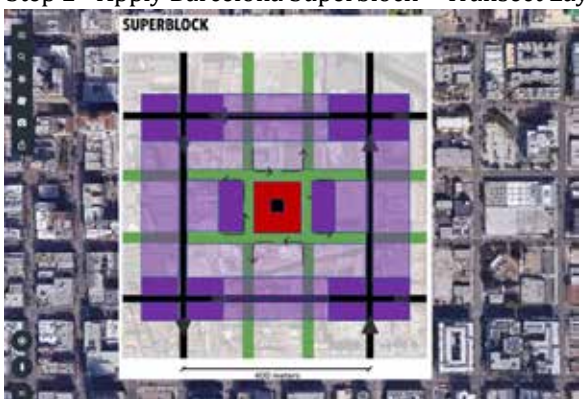
Adolf Loos enormous Doric column (far right), went on to inspire Postmodernist architects with its playful engagement with classical language, was juxtaposed with Walter Gropius Bauhaus modernism (right).

The results influenced and were incorporated by different schools of thought to define the look of the "Modern Age," during the roaring beginning of the 20th century.

HOW TO PLAN A VERTICAL SUPER-BLOCK - DOWNTOWN SAN DIEGO, CA

Step 1 - Determine Neighborhood Units

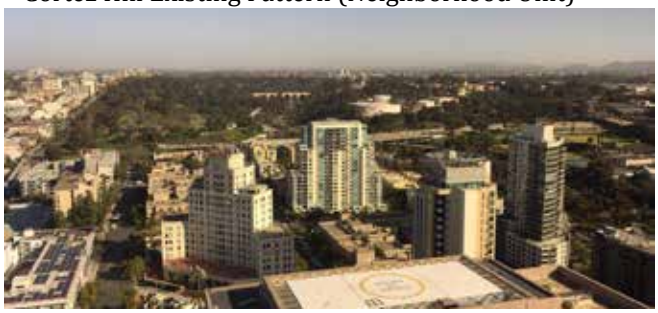
Step 2 - Apply Barcelona Superblock + Transect Layers T6 - T4



Step 3 - Determine Vertical Layers T6 - T4

Step 4 - Build Green/Transit/Traffic Streets, Parks & Buildings

Cortez Hill Existing Pattern (Neighborhood Unit)



Cortez Hill with Vertical Transect Applied

Smart phone technology is shifting our mobility as dramatically as the internal combustion engine did.

Vertical context layers are able to support infrastructure and utilities at upper levels to service complete places.

HOW TO CUSTOMIZE THIS TOOL

As a practicing New Urbanist, we are a uniquely trained group of professionals who can plug-and-play our design capabilities and engagement techniques and tools. Using our place-proven three-step placemaking process, we engage the client and community upfront to agree upon a shared Vision for the planning area. Second, we Codify this shared vision through innovative context-sensitive, place-based, and form-based codes. This second step is highly political, which is either an opportunity or a barrier depending upon local political will and understanding who is charged with making changes to people's expectations. And the third step is to manage the Implementation of a mostly market and financing driven series of programs, plans, and processes within shorter time frames.

Our Engagement Tools include the External Charrette and Internal Ideation Lab

As a certified facilitator and urban designer, I use a design process that brings meaningful collaboration between architects, engineers, landscape architects, and relevant specialist. The value found in a collaboration of New Urbanist, we are able to customize the process to specifically address the project's needs to deliver plans in very short time.

The Ideation Lab is our in-house charrette process organized by our team of experts and local stakeholders. The Ideation Lab design process is an AVRP Skyport tool where ideas for this project are explored and developed corroboratively via a series of precedent images, story boards, diagrams, collages, sketches and models generated, discussed, and vetted. Ideation Labs begin with understanding the project's context and client expectations and delivers an illustrated design narrative to frame the project's intent.

This external Charrette structure is used to shorten time to frame agreements and forge compromises while soliciting meaningful input from the various stakeholders. Its collaborative spirit keeps political posturing at arm's length in order to focus on implementation details.

We follow the most effective charrette method that has been institutionalized by the National Charrette Institute, which standardizes the three-stage feedback process. We use the NCI standard of a consecutive work day charrette to allow for effective design feedback from all involved. Importantly, our ability to assemble a team comprising of urban designers, planners, and experts in traffic, parking mobility, zoning, housing, and economic development who will set the framework for public and private realm implementation details to continue building towards a client's big-picture vision.

EDUCATION
Master of Arts, Urban Design, University of Westminster, London, UK; Bachelor of Arts, Geography, University of Texas at Austin

AFFILIATIONS
Accreditation, Congress for the New Urbanism, 2006; Certificate, Master Planning, Harvard University, 1999; Public Facilitation Certificate, Institute of Cultural Affairs, 2002.

HOWARD M. BLACKSON III, CNUac
URBAN DESIGN STUDIO DIRECTOR

Mr. Blackson is a national leader in crafting innovative urban design and planning ideas and techniques for over 25 years. He has professional experience in Singapore, South Korea, and throughout North America, and his education pursuits led him to London, England. A noted lecturer, writer, and innovator, Mr. Blackson's articles and drawings have been widely distributed on social media and have been featured on TEDx programs and have been published in the Charter for the New Urbanism, 2nd Edition (2013), and American Planning Association's, Planning and Urban Design Standards (2006), as well as a chapter on the American context in RIBA's Urban Design Practice: An International Review (2012). Mr. Blackson has collaborated on design projects with cultural icons Leon Krier, Andres Duany, and Zaha Hadid's office. His recent experience includes program manager for the City of San Diego's Civic Innovation Lab responsible for coordinating neighborhood-scaled interventions, and principal and director of planning with PlaceMakers, responsible for enabling innovative policy, regulatory, and master planning documents for public entities and private developers. Currently, he sits on the General Services Department's Design Excellence Peer Review Committee, is chairman of CNU California, and nominated to the Balboa Park Committee.

Tools to Purposely Plan and Design for the Complexity of Building in the 21st Century City

Owing a Tremendous Amount of Gratitude to Andres Duany, Leon Krier, and Jan Gehl.

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619|955.2559
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