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# Urban Nuclei and the Geometry of Streets: the Emergent Neighborhood Model

Michael Mehaffy

Sergio Porta

Nikos Salingaros

Yodan Rofe

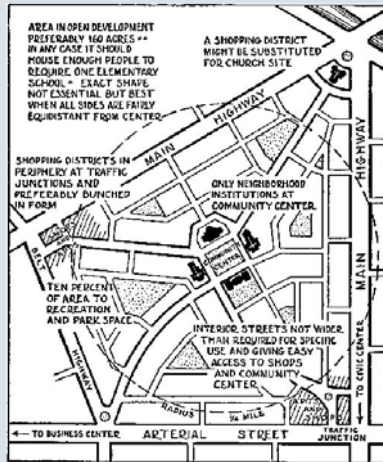


# Contents

- The genesis of the debate: nuclei, pedestrian sheds, movement network and neighborhoods
- A typological analysis of the options
- The neighborhood is not the same as the pedestrian shed
- The emergent neighborhood
- What we design: the movement network, pedestrian sheds and sanctuary areas
- Examples
- Conclusions



# The modern destruction of urban structure: The neighborhood unit + the functional hierarchy of streets

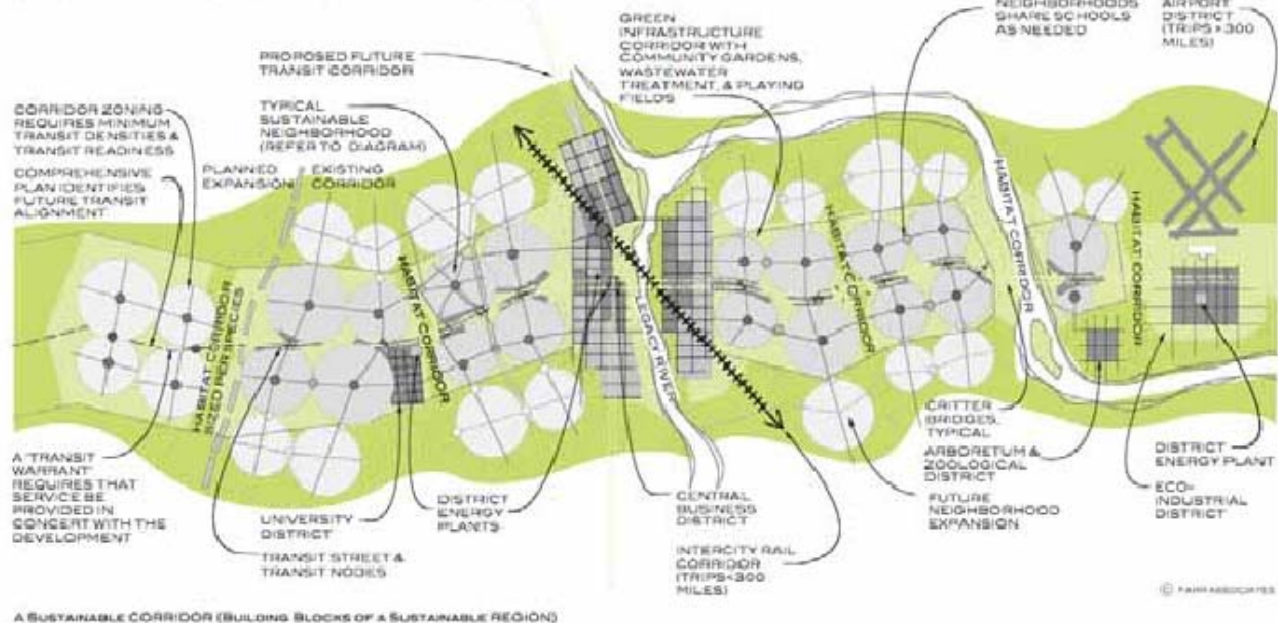


# The new urbanist model: neighborhood unit, transit and non-hierarchical street design



**CORRIDOR DENSITY:** NECESSARY TO FREE PEOPLE FROM AUTOMOBILE DEPENDENCE. MIN 7 DWELLING UNITS PER ACRE (DU/A) TO SUPPORT BASIC BUS SERVICE; HIGHER PREFERRED FOR BETTER SERVICE & MODE (16 DU/A TROLLEY) 22 DU/A LIGHT RAIL.

**CORRIDOR LAND USE MIX:** TO ACHIEVE A 1:1 JOB - HOUSING BALANCE

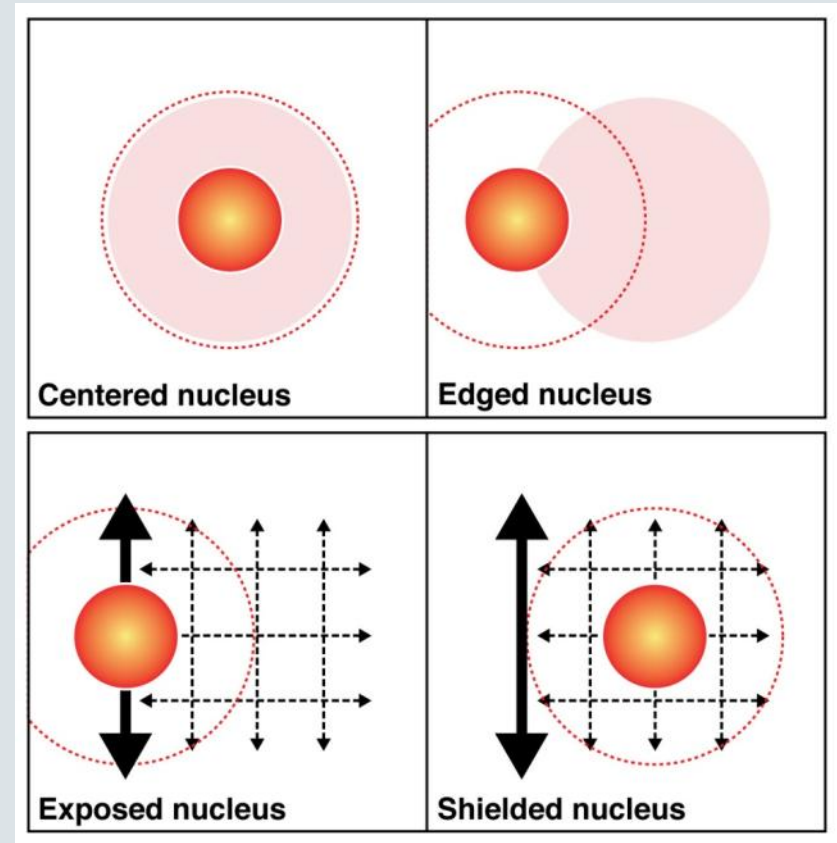


Doug Farr's diagrams



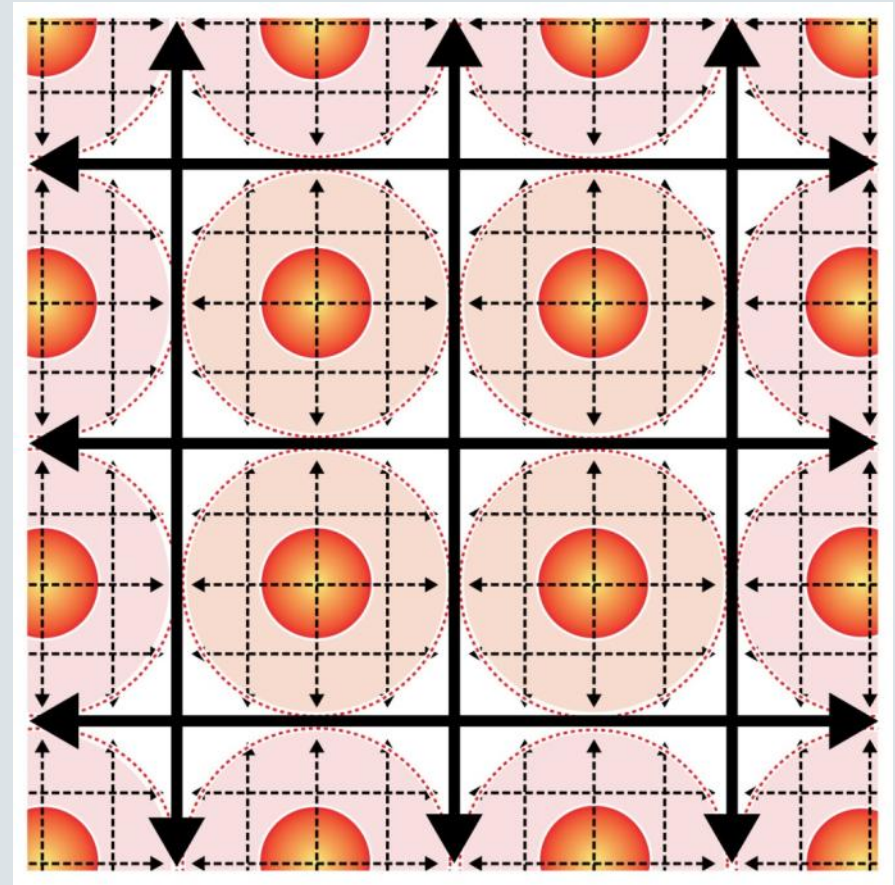
# The debate: the elements and their combinations

- Urban Nucleus
- Pedestrian Shed
- Neighborhood
- Urban Thoroughfare
- Local Streets



# The centered-shielded option (CS)

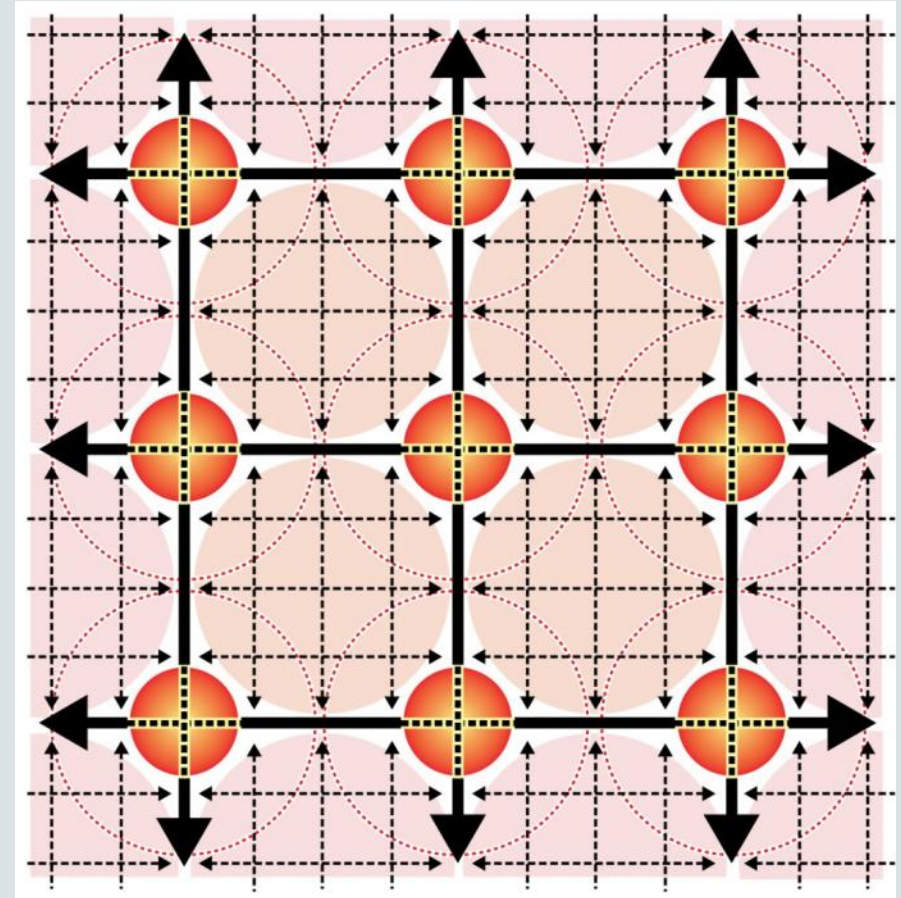
- Placing the urban nuclei at the center
- Shielded from heavy traffic
- Overlap of neighborhood and pedestrian shed
- Static – nuclei cannot extend and join
- Disjoint between local and district-metro movement and economy
- Transit not congruent with land use





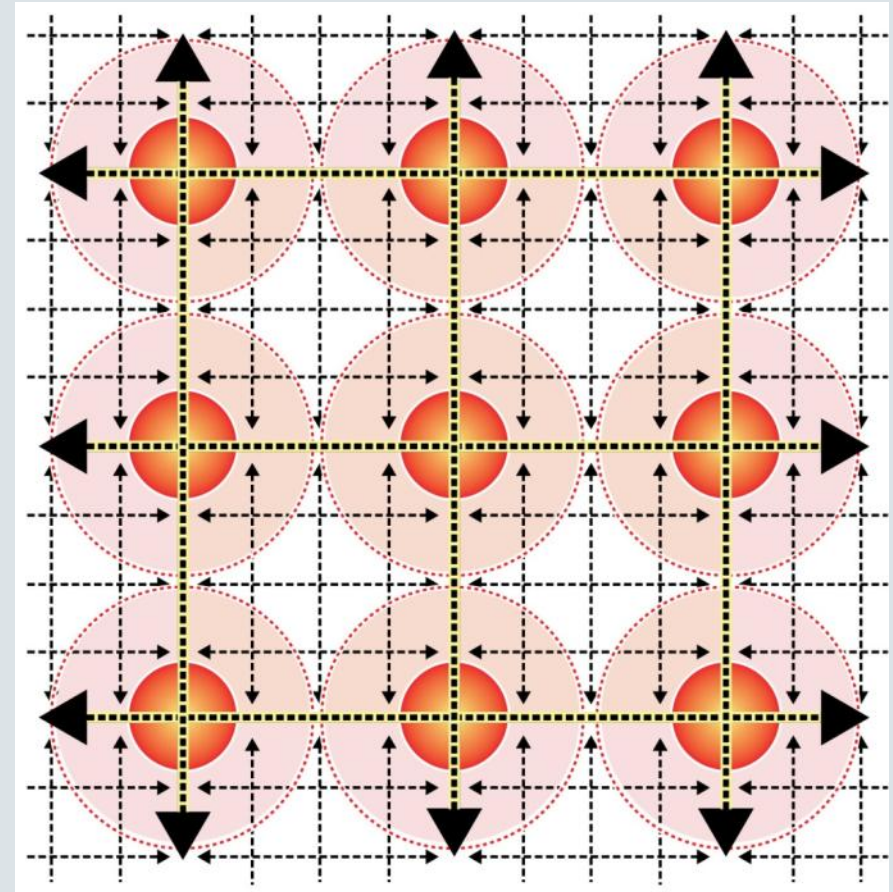
# Edge – Exposed (EE) option

- Joining of the movement economy with nuclei
- Separation from neighborhoods
- Pedshed fractured by heavy traffic
- Difficult to create a main street



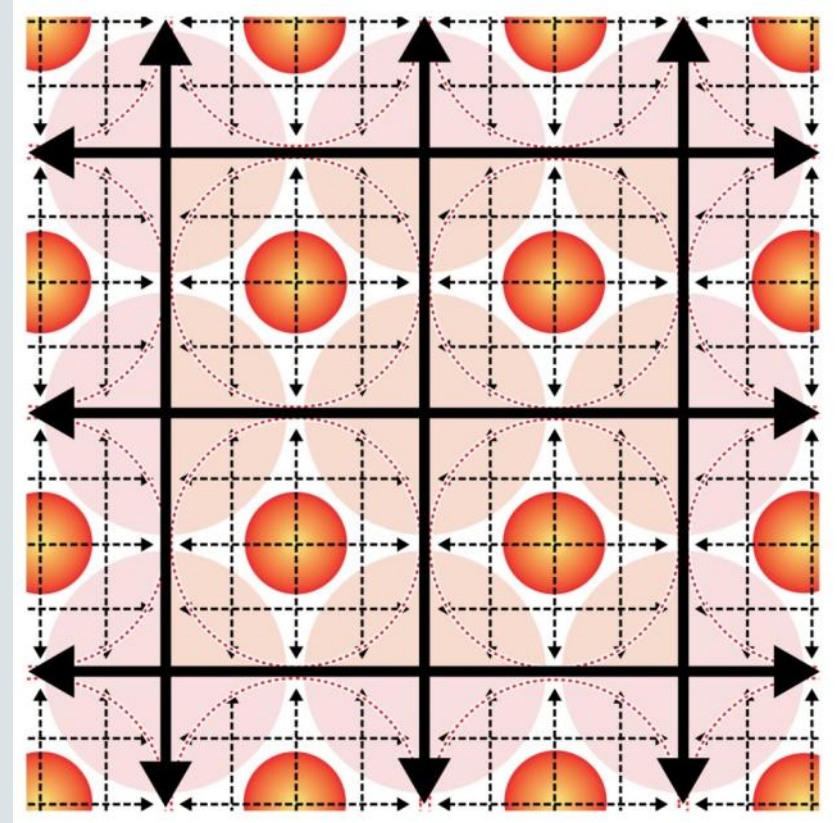
# Centered – Exposed (CE) option

- The traditional city
- Put into crisis by increased car movement and the response to transform main streets into arterials
- Instability at low-medium densities and high traffic flows
- Transforms into CS or EE as a result of traffic engineering and planning practices



# Edged Shielded (ES) option

- Purely theoretical
- Worse of all worlds
- Communities are disrupted by traffic
- Urban nuclei are not connected to the movement network



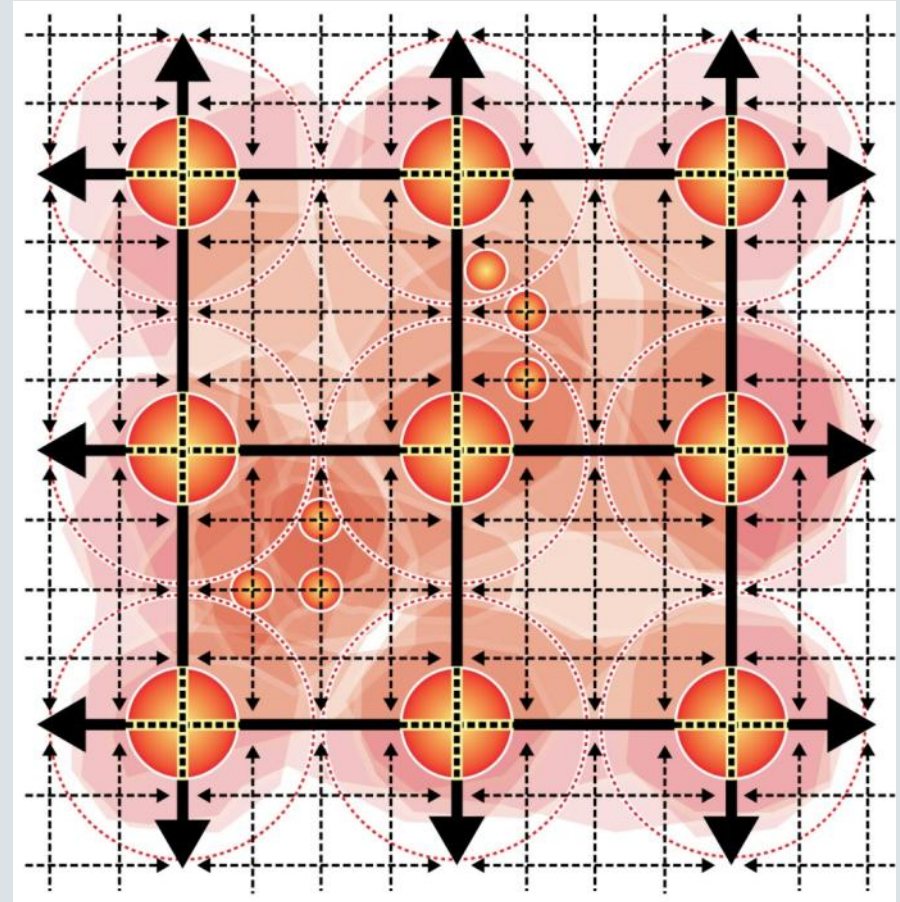
# Key Point: The neighborhood is not the same as the pedestrian shed

- An urban nucleus is by definition the centre of its own pedestrian shed
- Which may or may not be identifiable as a neighborhood
- Urban designers have tended to identify and attempted to fix community by their commercial and symbolic centers and pattern of accessibility
- Neighborhoods arise out of the spatial structure of the city:
  - its inevitable discontinuities
  - local administrative boundaries (sometimes arbitrary)
  - basins of different social services
  - the transportation network particularly major streets
  - the dynamics of different populations within the city,
  - etc.
- Neighborhoods are socially constructed in time and mediated by shared patterns of use of space



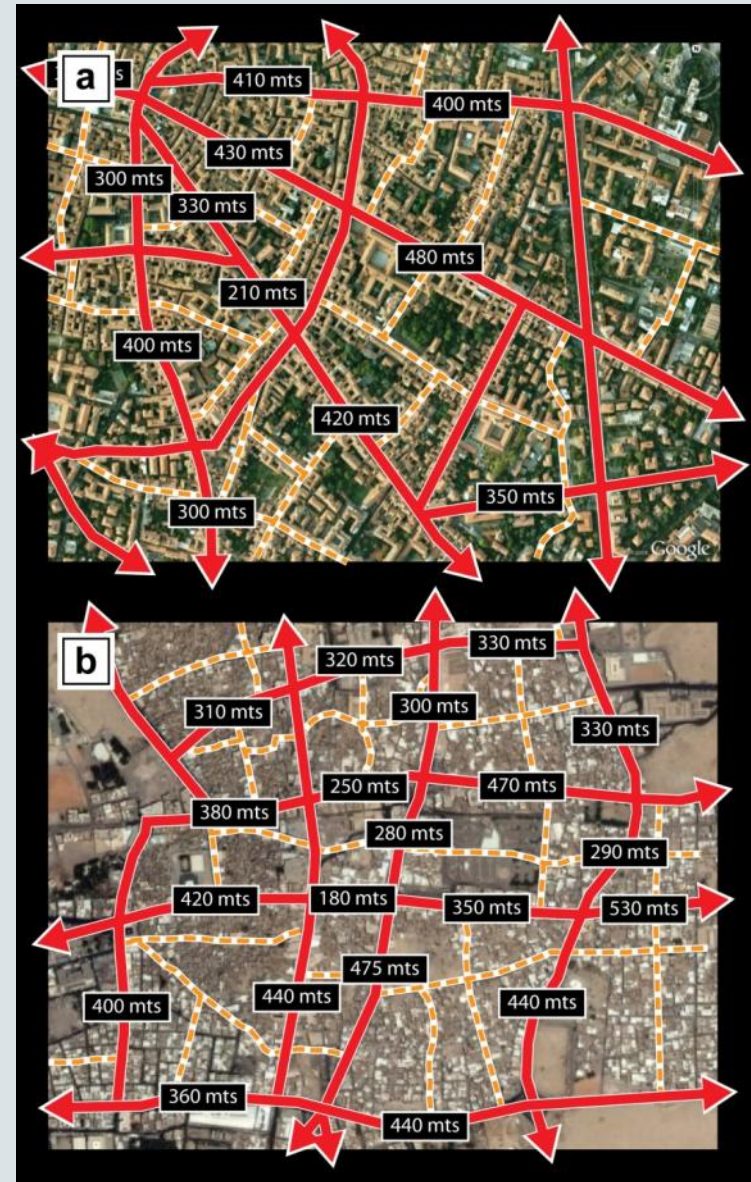
# The emergent neighborhood model

- Urban nuclei are placed in the best location for their development and growth
- Neighborhoods are free of the pedestrian sheds of the nuclei
- Allowed to center on multiple nuclei – or non commercial uses
- Some services and shops may locate away from the major streets – forming minor nuclei



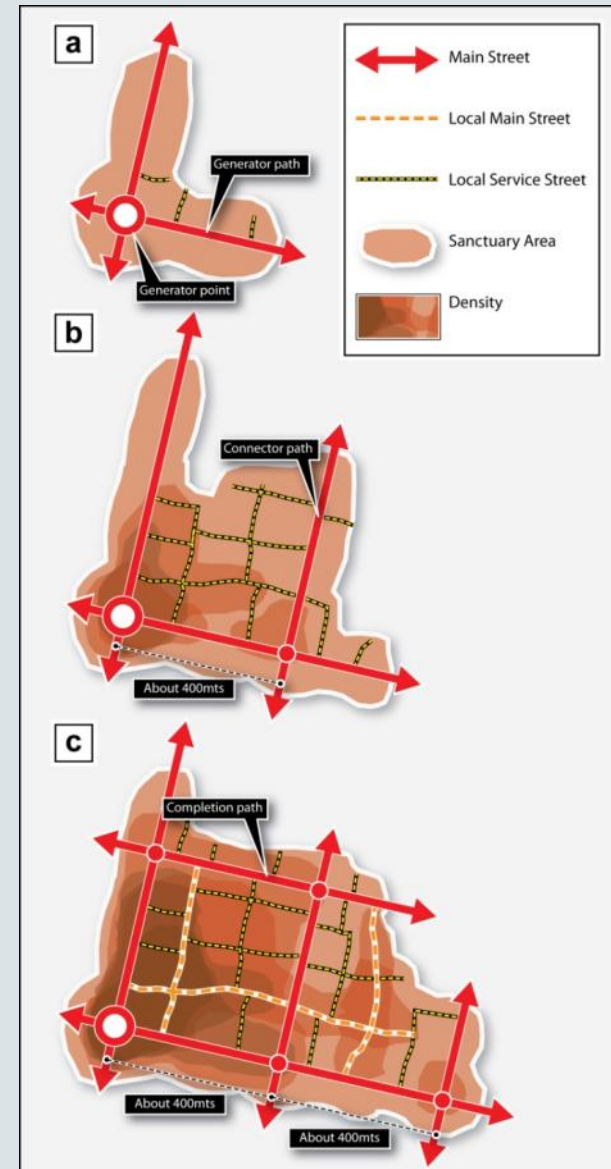
# Urban nuclei, main streets, and sanctuary areas: the “400-meter rule” or the quarter mile rule

- We cannot design neighborhoods
- We design:
  - Pedestrian sheds
  - Main streets and sanctuary areas
- Historical cities demonstrate remarkable similarity in the size of areas between main streets



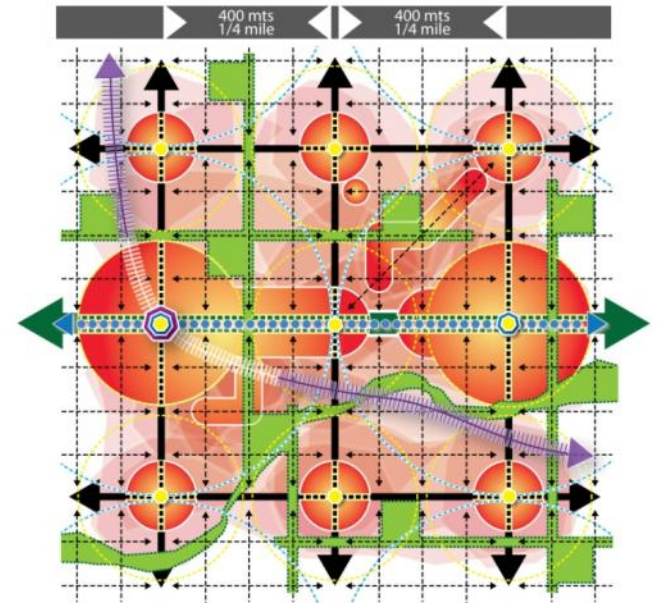
# The main street – sanctuary area form is generated by a gradual urbanization process

- a. Urbanization along main roads
- b. Minor streets giving access to rear areas
- c. Hemmed in by new main streets
  - Bisecting shortcuts
  - Later may become minor commercial streets

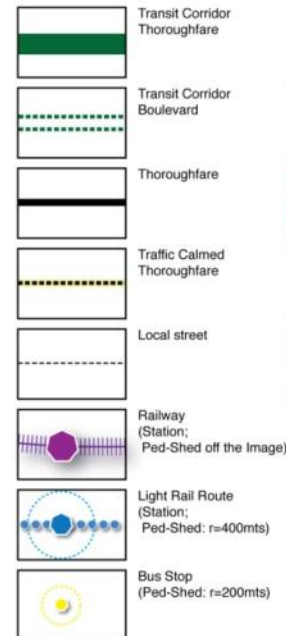


# The emergent neighborhood in the urban region

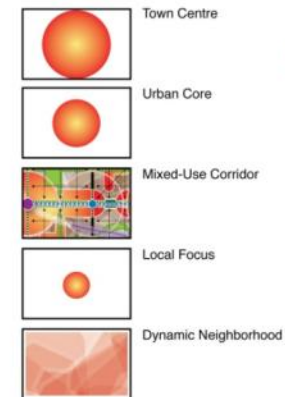
- The formation of denser development in proximity to transit service of a higher rank.
- The generation of mixed-use corridors as an outcome of contiguous urban nuclei merging along such systems.
- The aggregation of local foci along *local* main streets within sanctuary areas as a result of the “spill-over effect” from urban main streets.
- The continuity of a connected ecological network of linear and planar “green” elements such as parks, tree lines, boulevards, or rivers all over the urban fabric
- arrangements at intersections with main streets that maintain the critical connectivity of the system.



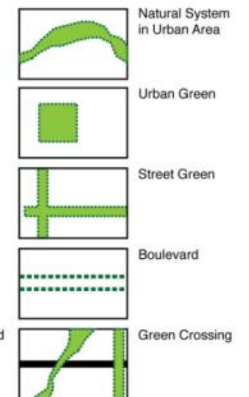
## HIERARCHY OF MOVEMENT



## HIERARCHY OF COMMUNITY



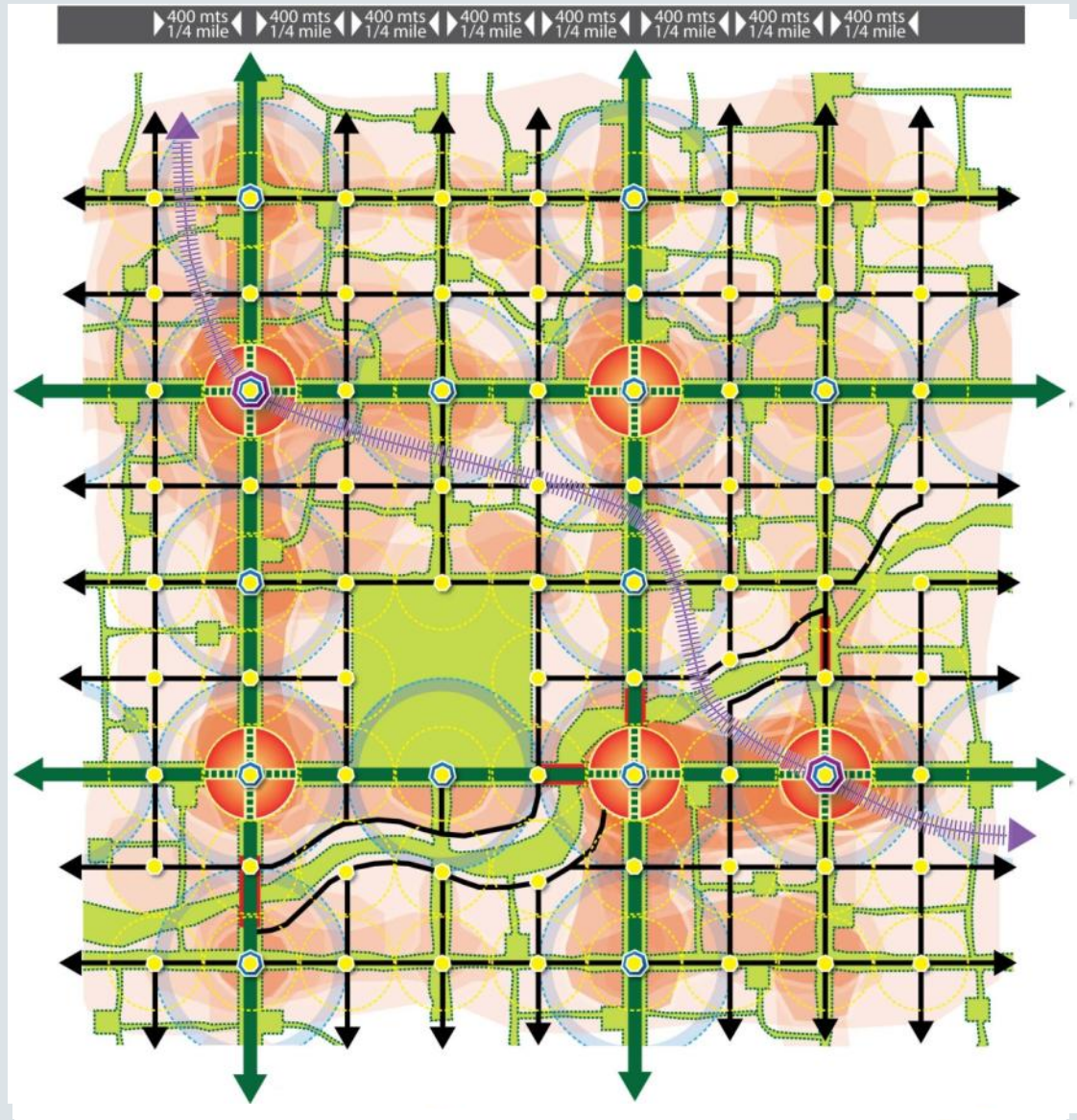
## ECOLOGICAL NETWORK





# Building it up...

- Main Streets
- Public transit
- Built up areas
- Natural and landscaped system
- The whole...



# Example 1: The Geddes Plan of Tel-Aviv

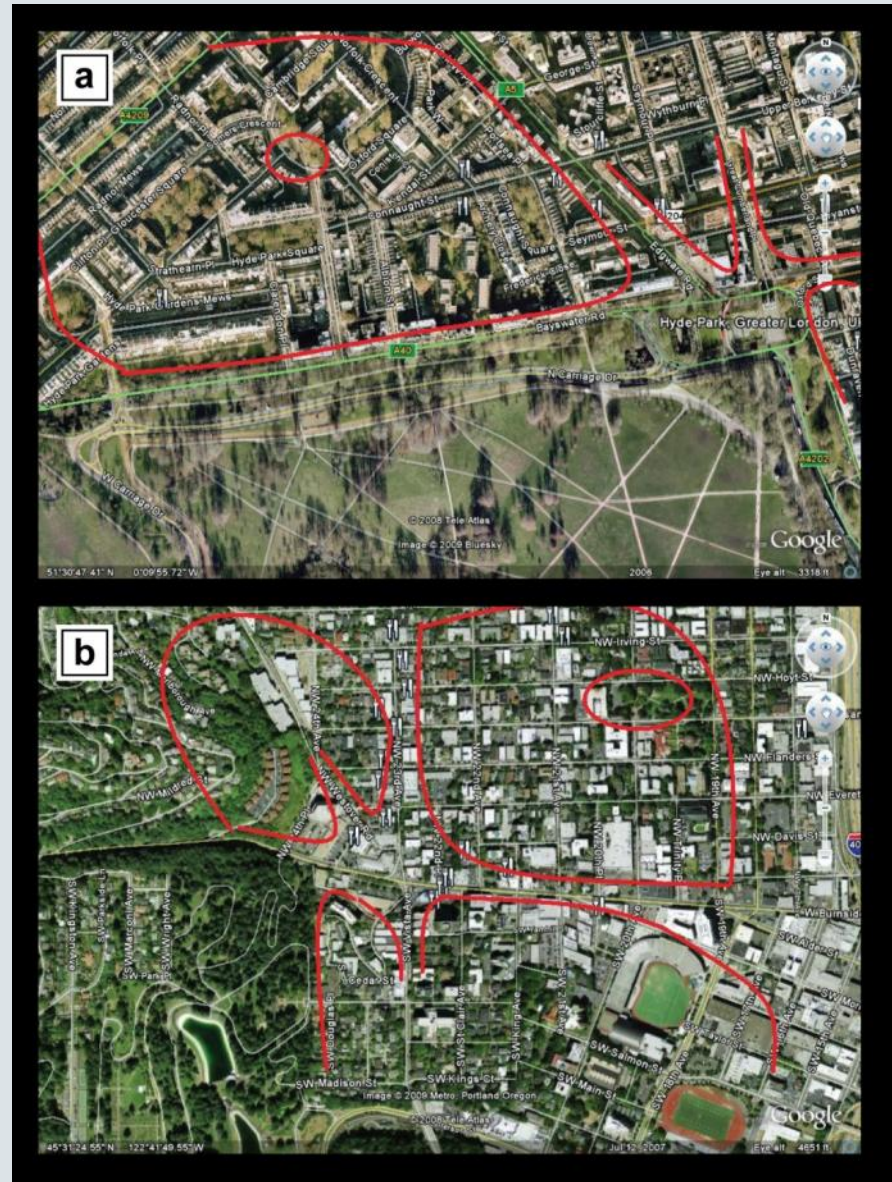
- Sanctuary areas (Home-blocks) roughly 200 x 300 m.
- Local streets interweave sometimes connecting across blocks
- Public gardens and small public institutions at the center of home blocks – also attract non locals to the interior without disturbing
- Boulevards connecting green system with main street system



# Example 2: Integrating the green system with the main movement system

- a. Hyde park area London
- b. Portland, OR

- Bordering with a boulevard
- Joining at an angle
- Bridging
- A boulevard as a green corridor



# Conclusions – The emergent neighborhood

- Traditional urban form finds a new synthesis based on the distinction between pedestrian shed and neighborhood
- Urban Nuclei form pedestrian sheds
- Two new terms added to determine the distance between through streets
  - Sanctuary areas
  - ¼ mile rule
- Together they create the field that can allow neighborhoods to emerge



# Conclusions – in what way is our proposal different? Urban seeding

- Lack of clear hierarchy of communities
- The relinquishing of neighborhood as a planning unit – what is designed is the urban structure of main streets, public transit and ecological network
- A smaller scale of primarily residential sanctuary (1/4 mile instead of 1/2 mile)
- Integration with ecological system – still needs to be worked out so as not to interrupt urban continuity – this is the main challenge for the 21st century
- Communities may form around pedsheds, sanctuary areas, open spaces, public institutions etc.
- Urban structure does not determine – but enables community formation – urban seeding not social engineering

