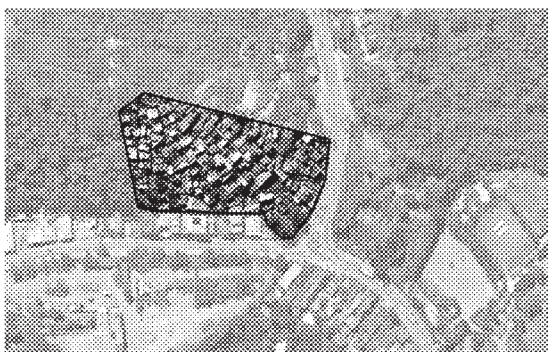
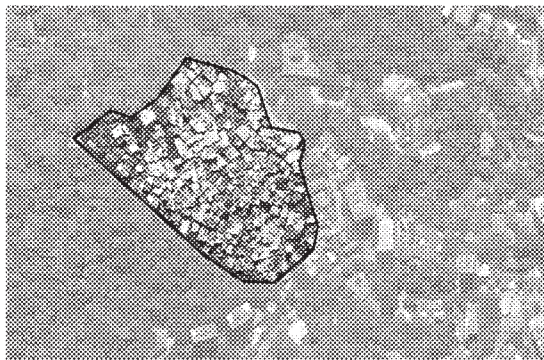


HYBRID DISTRICT

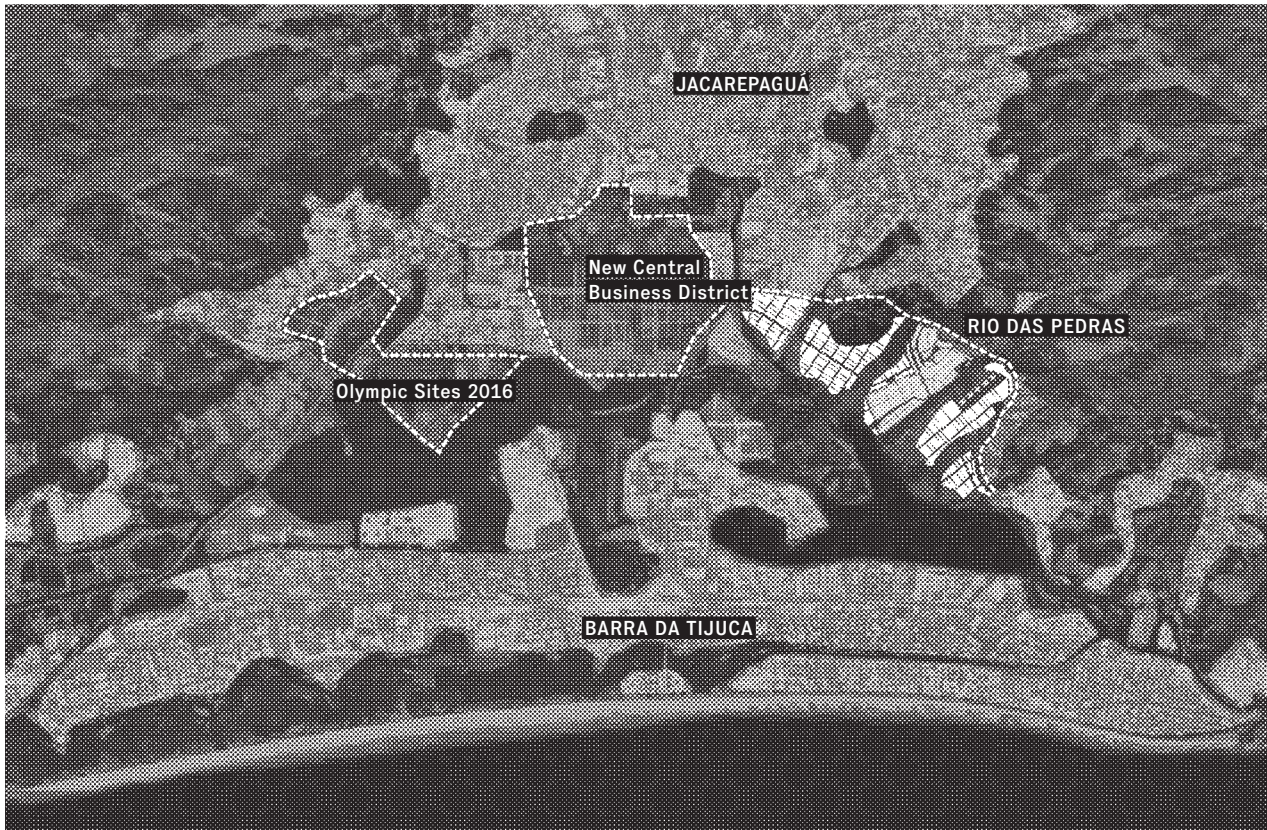
HOW TO
MERGE
THE FORMAL
AND THE
INFORMAL CITY

Characteristically informal and low-income, Rio das Pedras will develop into a mixed-income neighborhood that combines the informal with the formal to create a Hybrid District. A variety of housing models will be applied in the new district, from profit-oriented models to cooperatives and squats. An urban moderator will negotiate with different stakeholders to strike a balance between development types and urban typologies, prioritizing socially sustainable and owner-based developments. The moderator will have a set of moderation tools at his disposal to bring people together in public spaces and to segregate them where necessary. As the informal and formal combine over time to create new mixed typologies, the Hybrid District will thrive as an open and public space where the unexpected is both accommodated and encouraged.

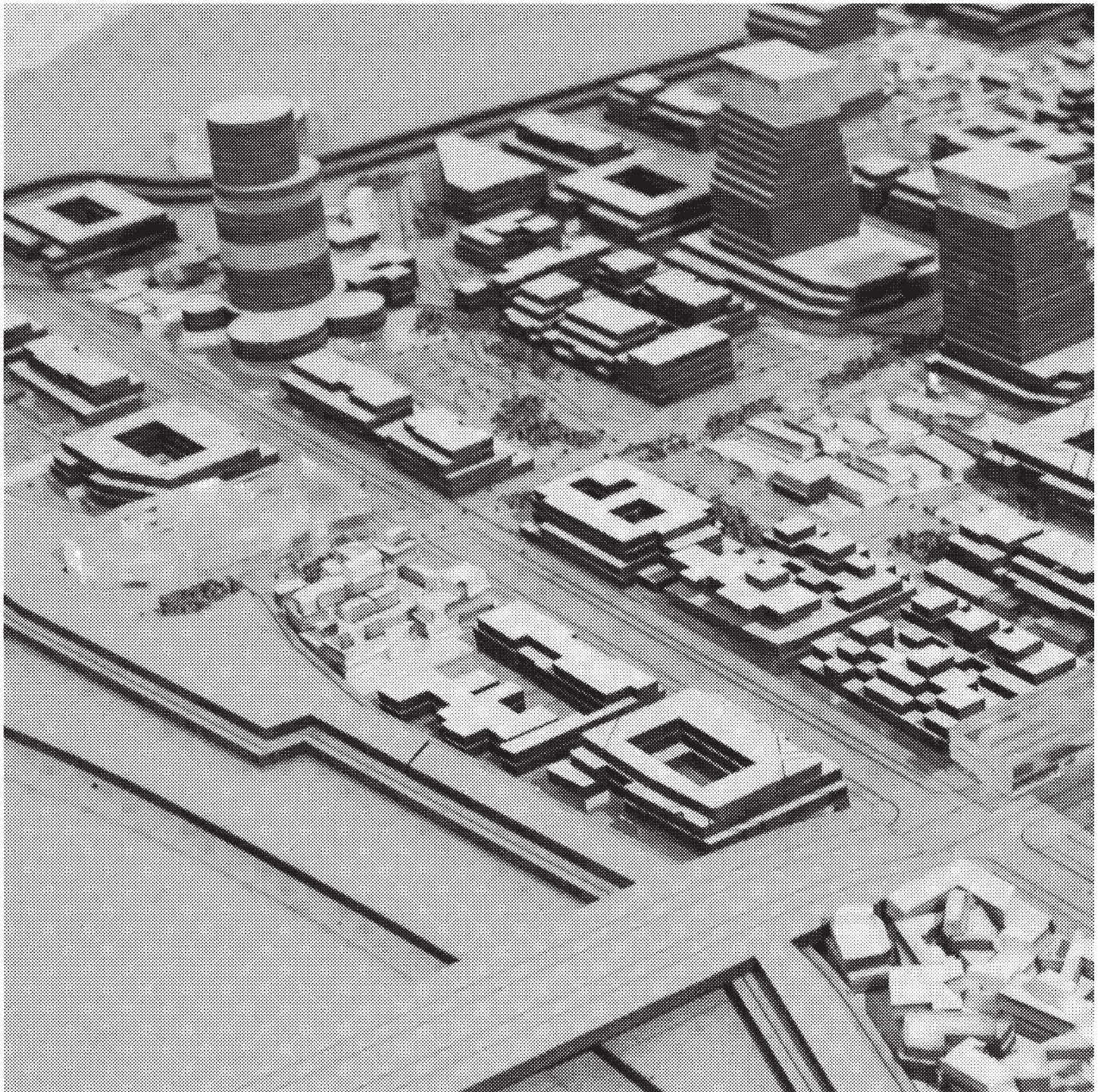
*Favelas patch the gaps
in the city fabric —
even right in the middle
of affluent neighborhoods!*



The open area surrounding Rio das Pedras is very likely to see impressive growth in the coming decades, thanks to its proximity to Barra da Tijuca and the Olympic sites.



By establishing a set of rules, the development of this expansion zone can be moderated and calibrated.



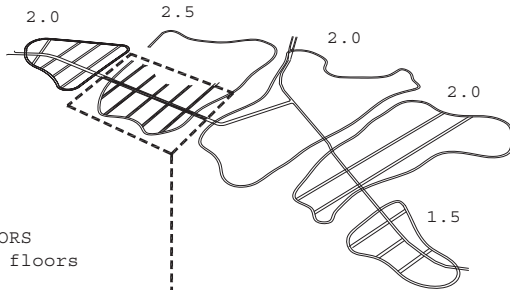


The Hybrid District creates diversity within each block, juxtaposing formal designs with informal structures.

A bird's eye view of the planned extension shows how the new neighborhood balances formal and informal, public and private, and commerce and leisure.

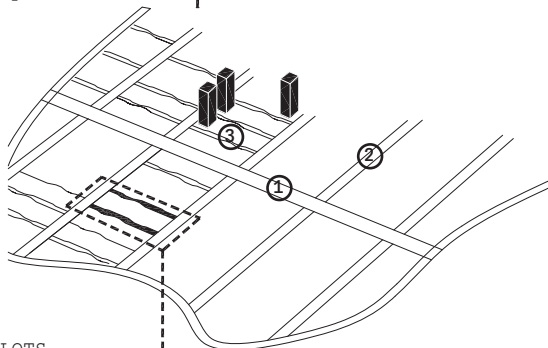
Standards are established to guarantee a dense and pedestrian-friendly development.

DENSITY
max. FAR

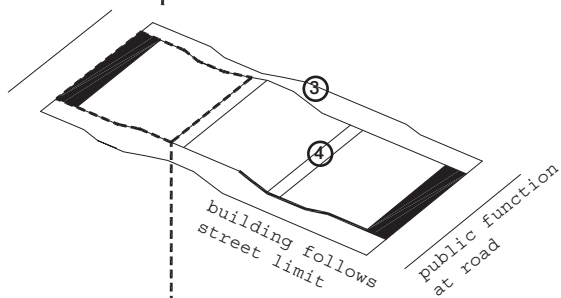


FLOORS
4.5 floors

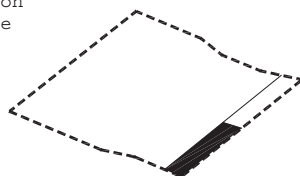
TOWERS
16 floors
3 sides free
1 per block



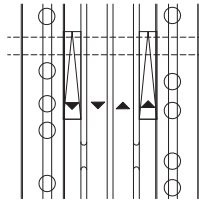
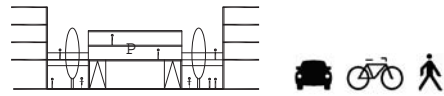
PLOTS
max. size:
40mx35m
1 exception
per stripe



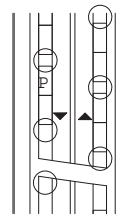
PLOT
site occupancy:
max. 0.9
public space:
min. 5%
1 exception
per stripe



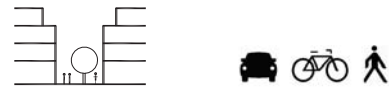
① Connector road
30m



② Access road
20m



③ Neighborhood street
6-10m / setback: 3rd floor



only delivery /
emergency

④ Alley
6m / setback: 2nd floor



Development rules regulate the area's density, spacing and building heights. Growth management ensures that streetscapes are at a human scale.

All local stakeholders are invited to participate in a chaired planning and design process.

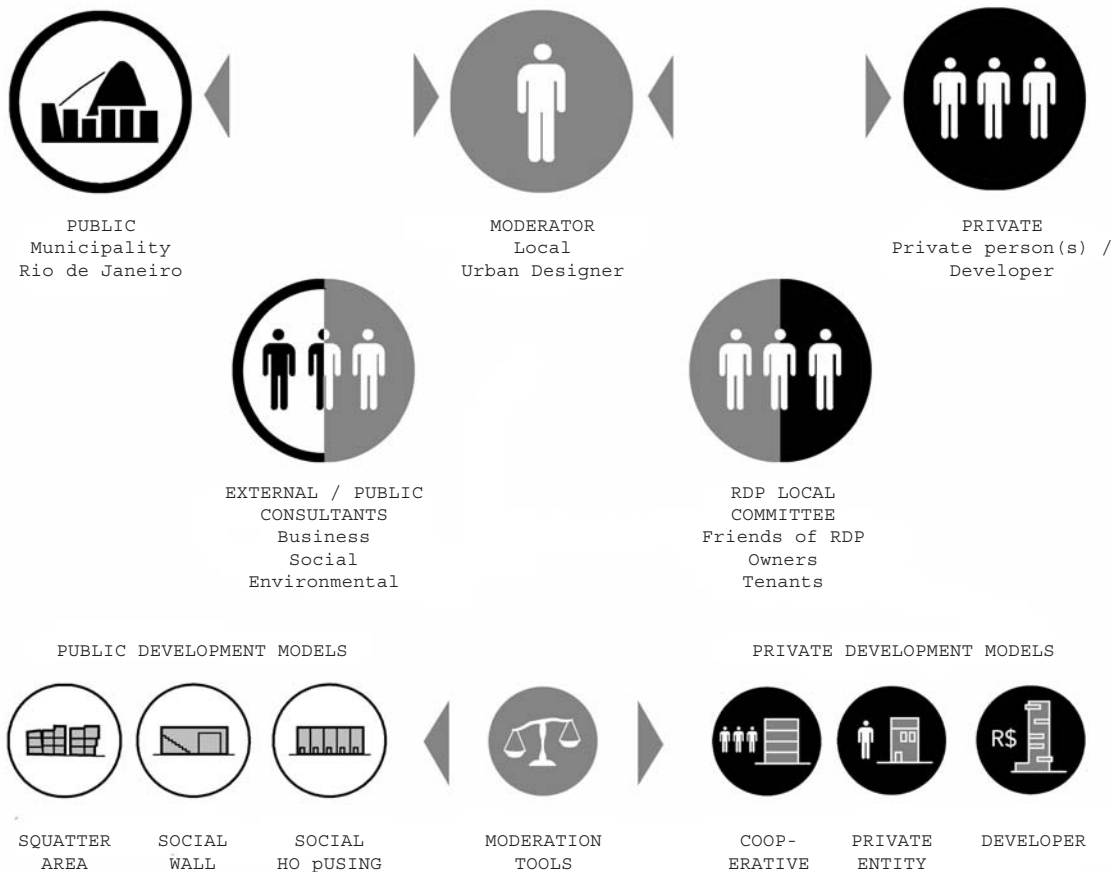
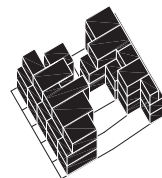
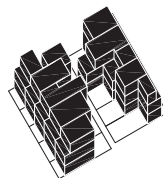
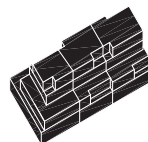
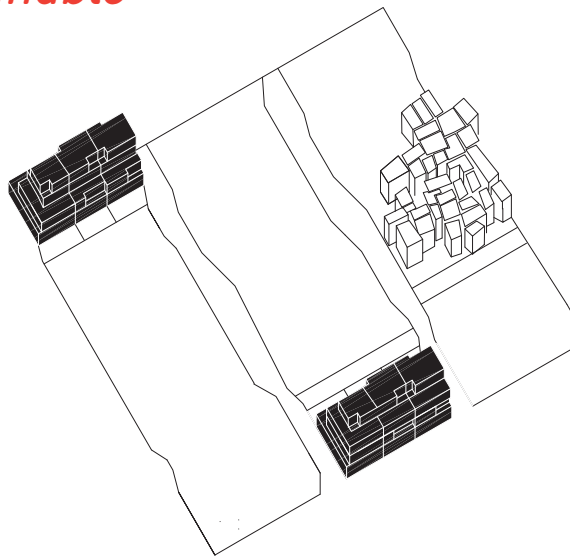


Diagram illustrating stakeholders and their interests

Step 1



Cooperatives are socially sustainable and therefore prioritized!



BLOCK UNITS

ROW HOUSE
(1-SIDED)

ROW HOUSE
(2-SIDED)

5 floors
GF: shops,
office, gastro
~160m² plot
GFA: ~230m²

3 floors
GF: - (private)
~100m² plot
GFA: ~230m²

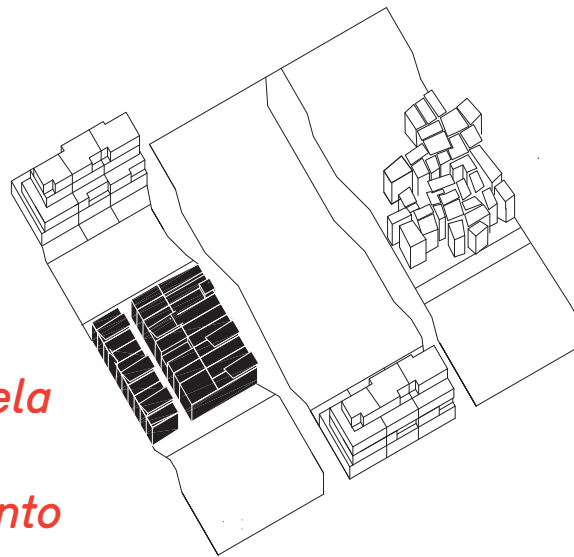
3 floors
GF: - (private)
~160m² plot
GFA: ~340m²

max. FAR: 2.5
~400 p/ha

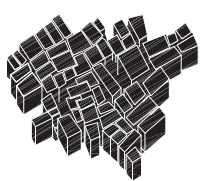
max. FAR: 1.6
~250 p/ha

max. FAR: 1.4
~150 p/ha

Step 2



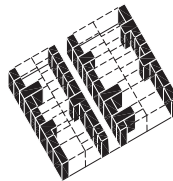
A smaller favela is less likely to transform into a social ghetto.



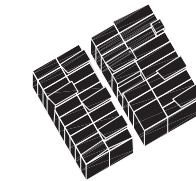
SQUATTING (CHAOTIC)
 1-3 floors
 GF: shops, manufacturing
 35-75m² plot
 GFA: 20-200m²
 max. FAR: 2.5
 ~650 p/ha



SQUATTING (ORDERED)
 1-3 floors
 GF: shops, manufacturing
 35-75m² plot
 GFA: 20-200m²
 max. FAR: 2.0
 ~600 p/ha



SOCIAL WALL
 1-4 floors
 GF: shops, manufacturing
 35-50m² plot
 GFA: 20-200m²
 max. FAR: 1.8
 ~550 p/ha

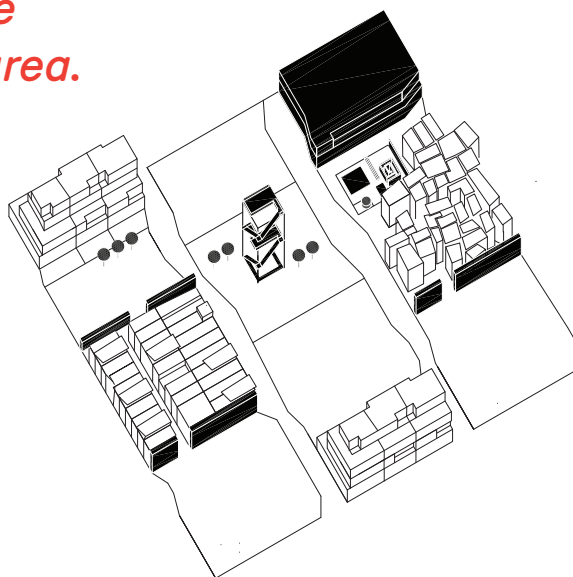


SOCIAL HOUSING
 3-4 floors
 GF: shops, manufacturing
 35-50m² plot
 GFA: 140-200m²
 max. FAR: 2.0
 ~300 p/ha

Step 3



Thresholds are introduced to either integrate or segregate an area.

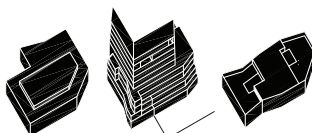


SEGREGATION TOOLS



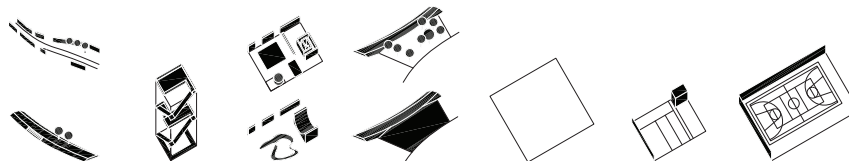
WALL HEDGE DYKE

INCLUSIVE PUBLIC BUILDINGS



COMMUNITY CENTER (PODIUM) DYKE SCHOOL

INCLUSIVE PUBLIC SPACES



CONNECTOR DYKE PARK VERTICAL PARK PLAYGR. SKATE PARK DOG PARK BEACH COMMUNITY SQUARE COMMUNITY GARDENS SPORTS FIELD

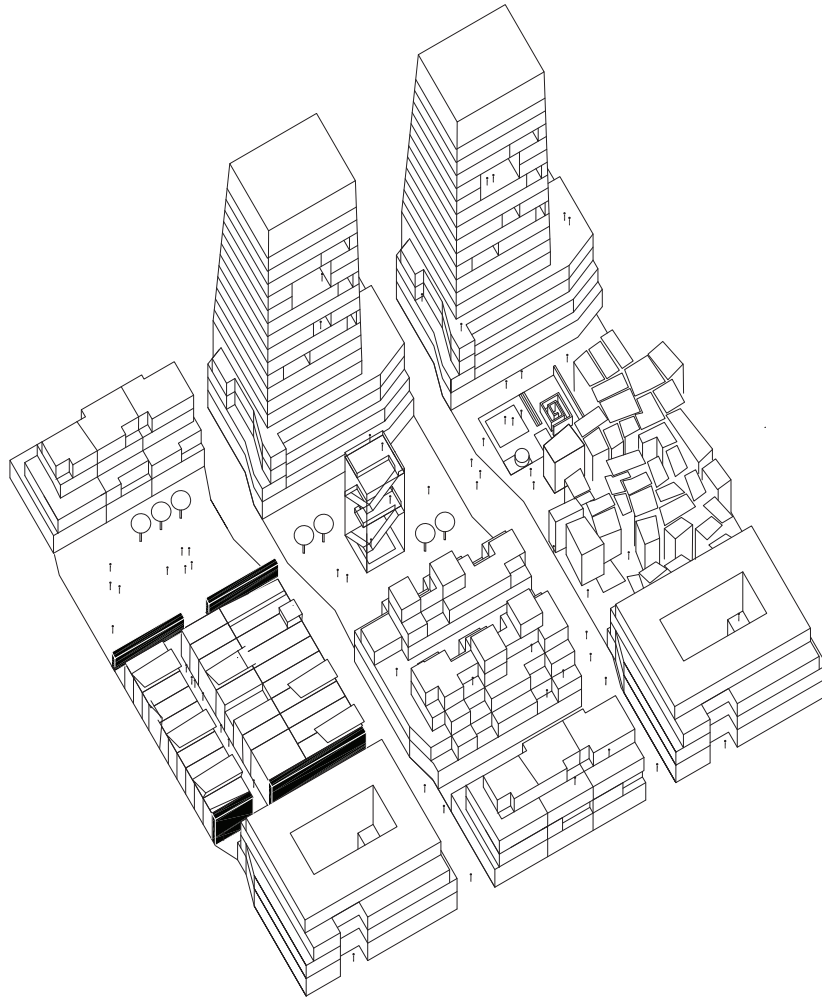
Step 3: A set of tools helps the moderator regulate the relationship between different typologies within a block.

Developers are invited to participate only right at the end of the process, reversing current development trends in Rio.

Step 4

BLOCK UNITS	ROW HOUSE (1-SIDED)	COURTYARD BLOCK	TERRACE BLOCK	CONDOMINIUM	FREE FORM
<p>5 floors GF: shops, office, gastro ~160m² plot GFA: ~230m²</p> <p>max. FAR: 2.5 ~400 p/ha</p>	<p>3 floors GF: - (private) ~100m² plot GFA: ~230m²</p> <p>max. FAR: 1.6 ~250 p/ha</p>	<p>4-5 floors GF: shops, office, gastro 1,400m² plot GFA: 5,000m²</p> <p>max. FAR: 2.5 ~350 p/ha</p>	<p>4-5 floors GF: shops, office, parking 1,400m² plot GFA: 4,000m²</p> <p>max. FAR: 2.0 ~280 p/ha</p>	<p>16 floors Podium: shops, kinderg., parking... 1,400m² plot GFA: 11,000m²</p> <p>max. FAR: 6.0 ~750 p/ha</p>	<p>8-10 floors GF, +1: shops, office, parking 1,400m² plot GFA: 7,000m²</p> <p>max. FAR: 3.5 ~400 p/ha</p>

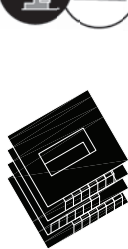
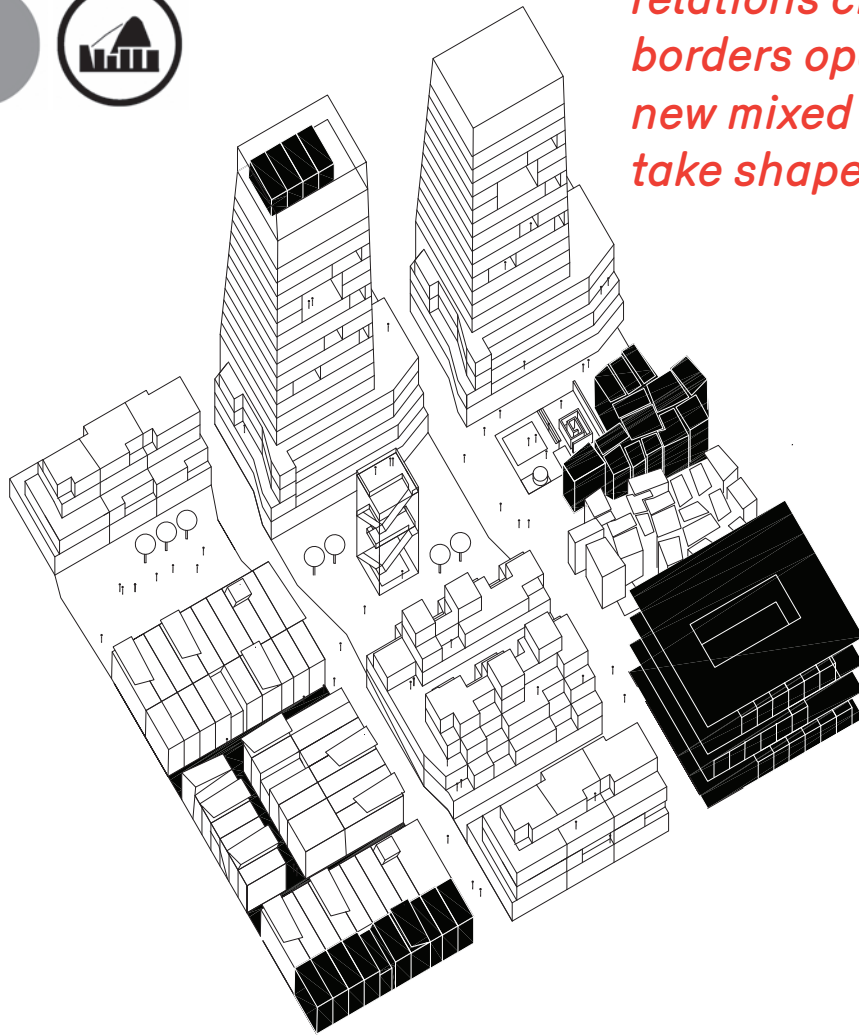
Step 4: Developers are invited to plan, build and invest in commercial developments.



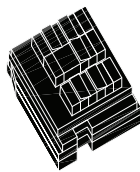
*The heterogeneous mix
created by steps 1 to 4
is just the beginning
of another long-term
development ...*



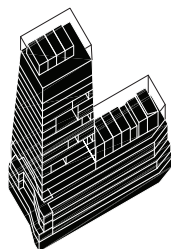
*... over time,
relations change,
borders open and
new mixed typologies
take shape.*



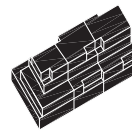
VERTICAL
FAVELA



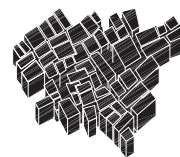
INFORMAL
ROOFTOPS 1



INFORMAL
ROOFTOPS 2



MIXED COOPERATIVE
BLOCK UNITS



ARTIFICIAL
FAVELA

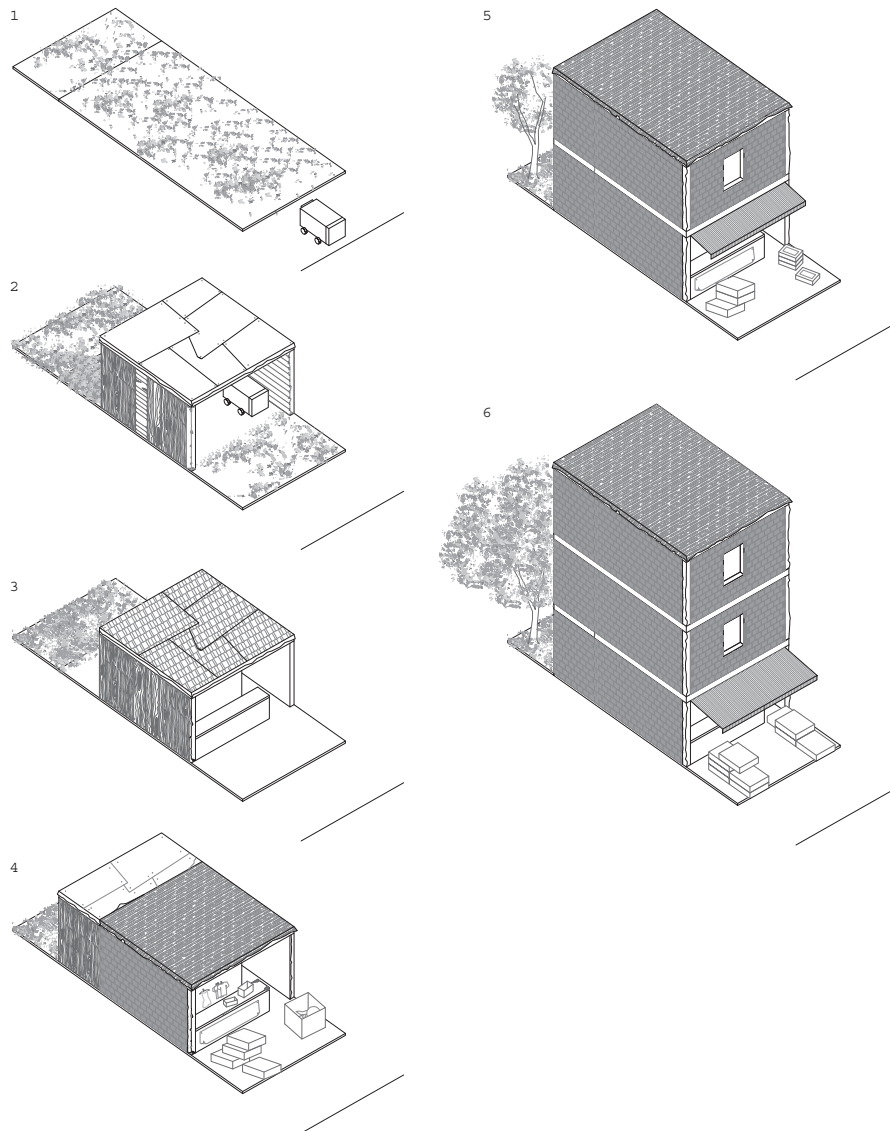


*Integrated into the planning process
the favela becomes an instrument of urban change.*



Bird's view of one of Rio das Pedras' expansion areas after a moderated planning process has taken place. Diversity within each block is achieved.

*Growth in Rio das Pedras
starts with local micro-commerce.*



See Prototype No.8 on P.61

The diagram featured above depicts one of the many possible scenarios of incremental urban growth fuelled by commerce. Developments can start at any stage, based on initial capital, and even those who have nothing except for an entrepreneurial spirit are invited to participate.

Every street ratio encourages a specific type of commercial activity depending on its width.

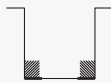
SHOPS

Groceries shop



95-100%
occupation of public space

Main Road width: 30m
sidewalks: 5m
1 : 2.5



95-100%
occupation of urban space

Road width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

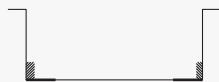
Streets width: 6,5m
sidewalks: 1m
2:1



n/a

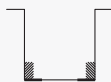
Alleys width: 3m
sidewalks: 0m
3:1

Appliances shop



30-45%
occupation of public space

Main Road width: 30m
sidewalks: 5m
1 : 2.5



50%
occupation of urban space

Road width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

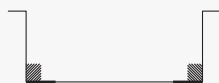
Streets width: 6,5m
sidewalks: 1m
2:1



n/a

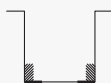
Alleys width: 3m
sidewalks: 0m
3:1

Plastic ware shop



50-60%
occupation of public space

Main Road width: 30m
sidewalks: 5m
1 : 2.5



50%
occupation of urban space

Road width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

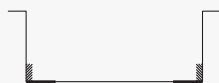
Streets width: 6,5m
sidewalks: 1m
2:1



n/a

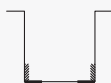
Alleys width: 3m
sidewalks: 0m
3:1

Clothing shop



25%
occupation of public space

Main Road width: 30m
sidewalks: 5m
1 : 2.5



30%
occupation of urban space

Road width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

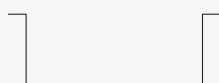
Streets width: 6,5m
sidewalks: 1m
2:1



n/a

Alleys width: 3m
sidewalks: 0m
3:1

Chicken shop



0%
occupation of public space

Main Road width: 30m
sidewalks: 5m
1 : 2.5



0%
occupation of urban space

Road width: 12m
sidewalks: 3m
1:1



0%
occupation of urban space

Streets width: 6,5m
sidewalks: 1m
2:1



n/a

Alleys width: 3m
sidewalks: 0m
3:1

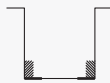
HYBRIDS

Hairdresser + Plastic ware shop



50-60%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



50%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

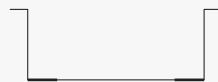
Streets
width: 6.5m
sidewalks: 1m
2:1



n/a

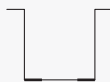
Alleys
width: 3m
sidewalks: 0m
3:1

Drugstore + Manicure/pedicure



0%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



0%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



0%
occupation of urban space

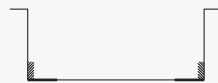
Streets
width: 6.5m
sidewalks: 1m
2:1



n/a

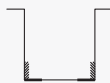
Alleys
width: 3m
sidewalks: 0m
3:1

Clothing shop + Manicure



25%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



30%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

Streets
width: 6.5m
sidewalks: 1m
2:1



n/a

Alleys
width: 3m
sidewalks: 0m
3:1

Drugstore + Hairdresser



0%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



0%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



0%
occupation of urban space

Streets
width: 6.5m
sidewalks: 1m
2:1



n/a

Alleys
width: 3m
sidewalks: 0m
3:1

Hairdresser + Manicure / pedicure



0%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



0%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



0%
occupation of urban space

Streets
width: 6.5m
sidewalks: 1m
2:1

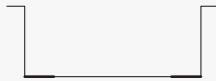


0%
occupation of urban space

Alleys
width: 3m
sidewalks: 0m
3:1

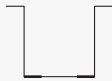
SERVICES

Hairdresser



0%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



0%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



0%
occupation of urban space

Streets
width: 6.5m
sidewalks: 1m
2:1



n/a

Alleys
width: 3m
sidewalks: 0m
3:1

Manicure / pedicure



0%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



0%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



0%
occupation of urban space

Streets
width: 6.5m
sidewalks: 1m
2:1



0%
occupation of urban space

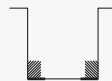
Alleys
width: 3m
sidewalks: 0m
3:1

Car mechanic



50%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



50-70%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

Streets
width: 6.5m
sidewalks: 1m
2:1



n/a

Alleys
width: 3m
sidewalks: 0m
3:1

Fast food / bar



15-20%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



20%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



30-50%
occupation of urban space

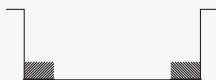
Streets
width: 6.5m
sidewalks: 1m
2:1



0%
occupation of urban space

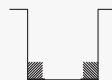
Alleys
width: 3m
sidewalks: 0m
3:1

Restaurant



95-100%
occupation of public space

Main Road
width: 30m
sidewalks: 5m
1 : 2.5



95-100%
occupation of urban space

Road
width: 12m
sidewalks: 3m
1:1



100%
occupation of urban space

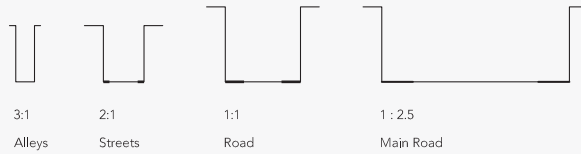
Streets
width: 6.5m
sidewalks: 1m
2:1



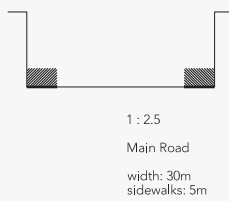
n/a

Alleys
width: 3m
sidewalks: 0m
3:1

Rio das Pedras existing street ratio



Impact of micro commerce on urban space/sidewalks



95-100% :
groceries, restaurants

50-70% :
plastic ware, car mechanic

25-50% :
appliances shop, clothes shop

10-25% :
pet shop, fast food/bar, tourist office

0% :
butcher, bakery, chicken shop, water discount,
drugstore, hairdresser, manicure, pedicure,
dentist, education center, games, church

or street vendors: 50%



95-100% :
groceries, appliances shop, clothes shop,
plastic ware, restaurants, car mechanic

50-70% :
pet shop,

25-50% :
fast food/bar, tourist office

10-25% :
fast food/bar, tourist office

0% :
butcher, bakery, chicken shop, water discount,
drugstore, hairdresser, manicure, pedicure,
dentist, education center, games, church

or street vendors: 100%



95-100% :
groceries, restaurants

50-70% :
appliances shop, plastic ware, car mechanic

25-50% :
clothes shop, pet shop

10-25% :
fast food/bar, tourist office

0% :
butcher, bakery, chicken shop, water discount,
drugstore, hairdresser, manicure, pedicure,
dentist, education center, games, church

or street vendors: 70-80%



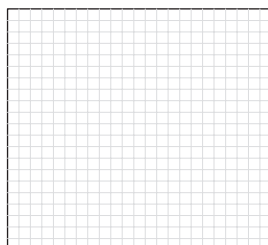
0% :
hairdresser, manicure,
pedicure, fastfood/bar

street vendors: ambulantes only

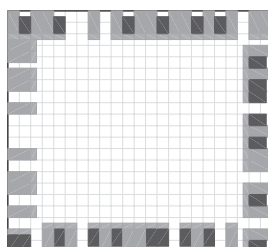
*By determining the proportions of a street,
the growth of micro-commerce can be controlled.
Here are four possible scenarios:*



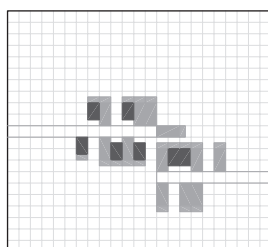
phase 0
scenario 1
area: 1.2 ha
units: 0
capacity: 0 people
public space: 100%
density: 0 p/km²
far: 0



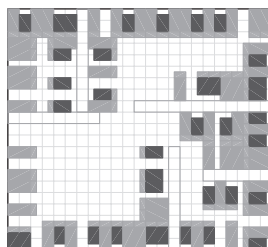
phase 0
scenario 2
area: 1.2 ha
units: 0
capacity: 0 people
public space: 100%
density: 0 p/km²
far: 0



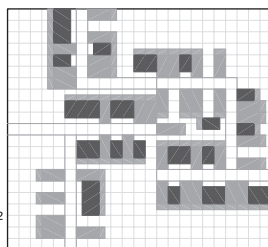
phase 1
scenario 1
area: 1.2 ha
units: 60
capacity: 240 people
public space: 80%
density: 2000 p/km²
far: max. 2.4



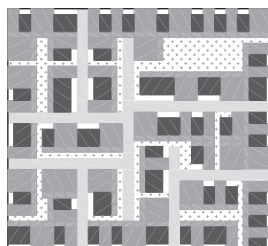
phase 1
scenario 2
area: 1.2 ha
units: 20
capacity: 80 people
public space: 88%
density: 6700 p/km²
far: max. 2.4



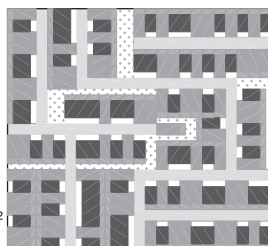
phase 2
scenario 1
area: 1.2 ha
units: 90
capacity: 360 people
public space: 48%
density: 30.000 p/km²
far: max. 2.4



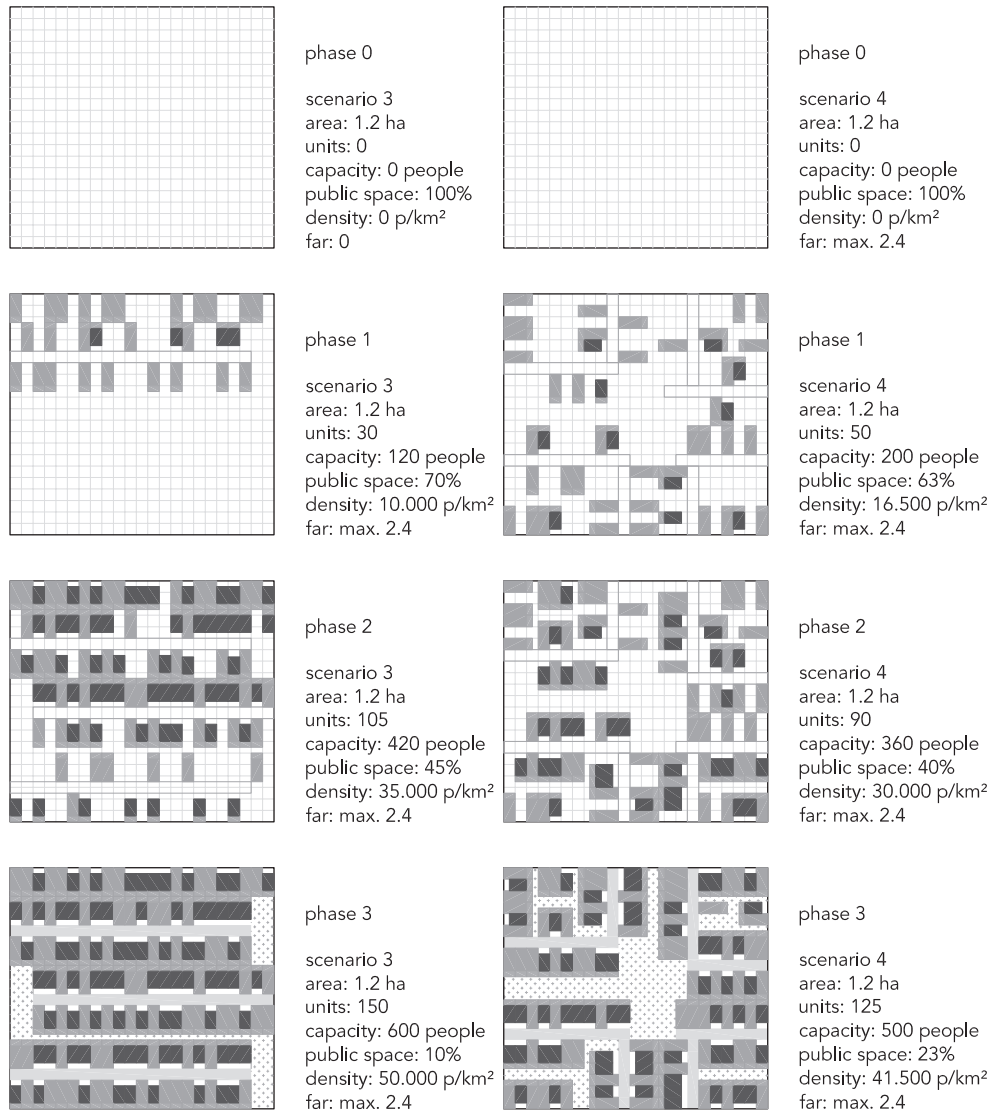
phase 2
scenario 2
area: 1.2 ha
units: 70
capacity: 280 people
public space: 55%
density: 23.500 p/km²
far: max. 2.4



phase 3
scenario 1
area: 1.2 ha
units: 130
capacity: 520 people
public space: 13.5%
density: 43.500 p/km²
far: max. 2.4



phase 3
scenario 2
area: 1.2 ha
units: 140
capacity: 480 people
public space: 7%
density: 40.000 p/km²
far: max. 2.4

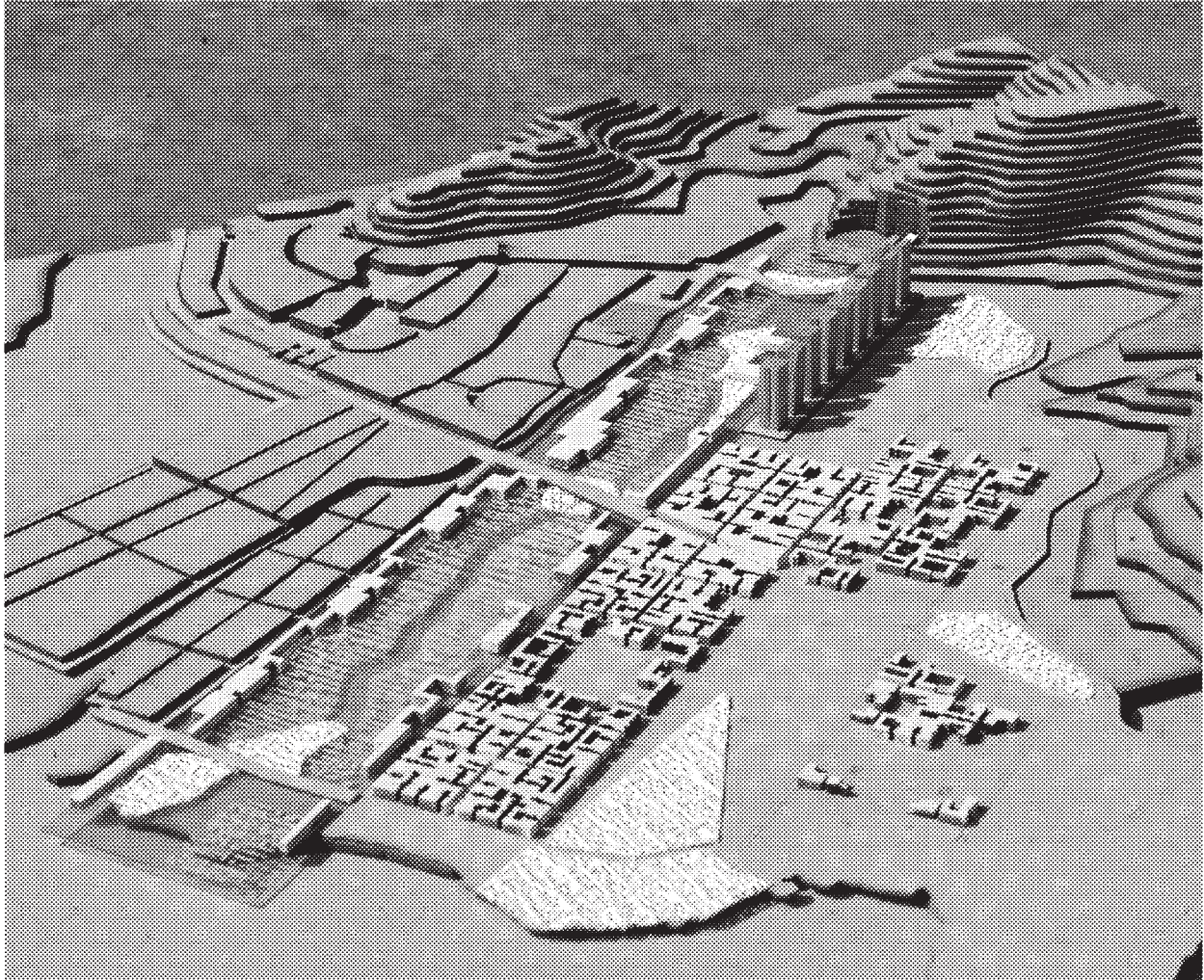


The diagram featured above illustrates the phasing of new commercial activities in the favela: Four different scenarios emerge depending on the proportions of the street that is initially introduced. New combinations will produce variations in population density and the availability of public space, even though the same rules concerning lot development and floor area ratios (FAR) are applied.

Residents fill the regular grid with their dwellings and businesses, starting from the main streets ...



The south side of Rio das Pedras is programmed as a commercial engine.
A new grid with prescribed street ratios and program for each lot is combined with infrastructure.

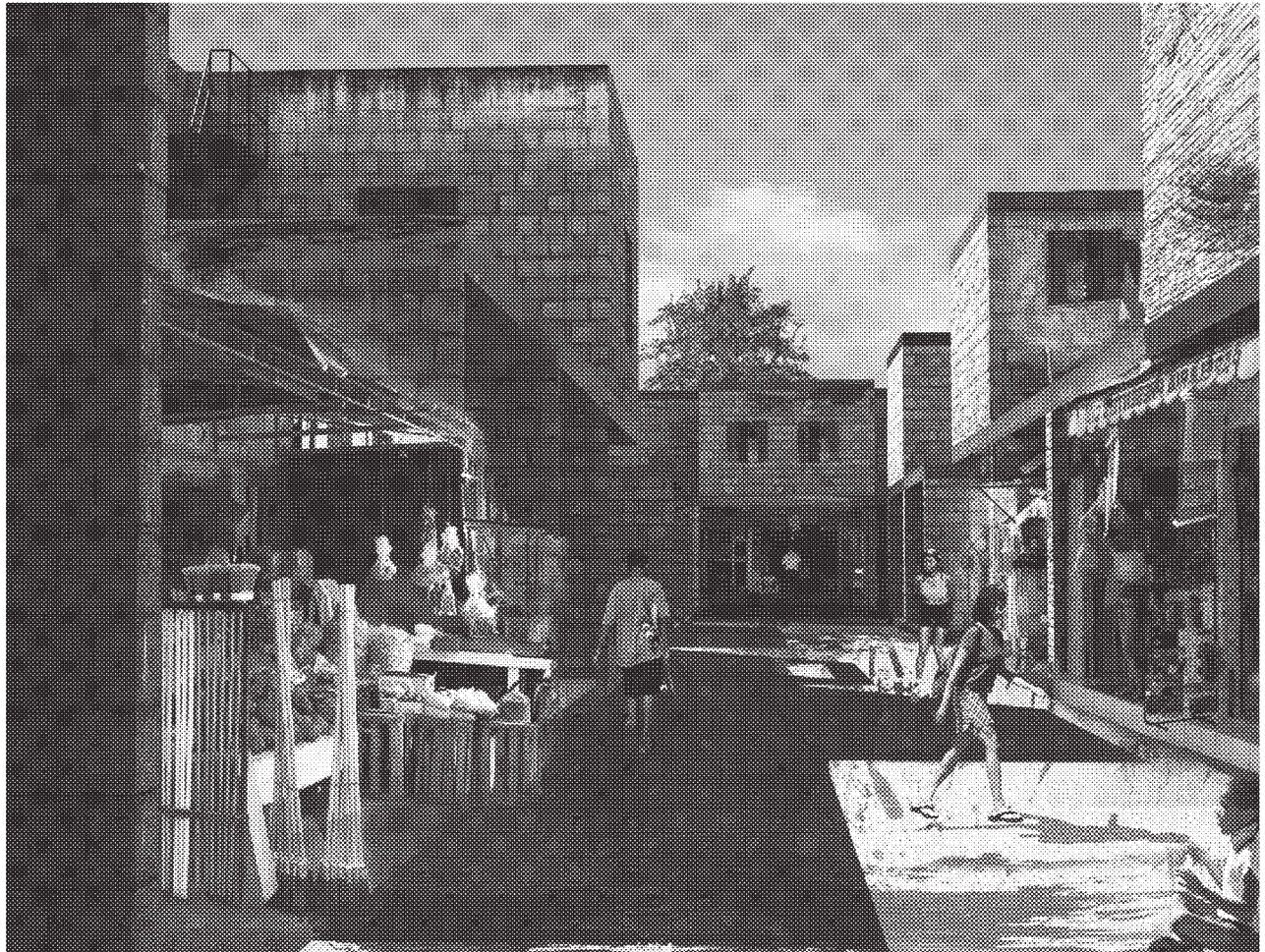


Bird's view of Rio das Pedras' expansion area showing the intervention of the two dinamos—the agricultural and the commercial.

*... and guided by a set of rules,
public spaces will crop up in each block.*



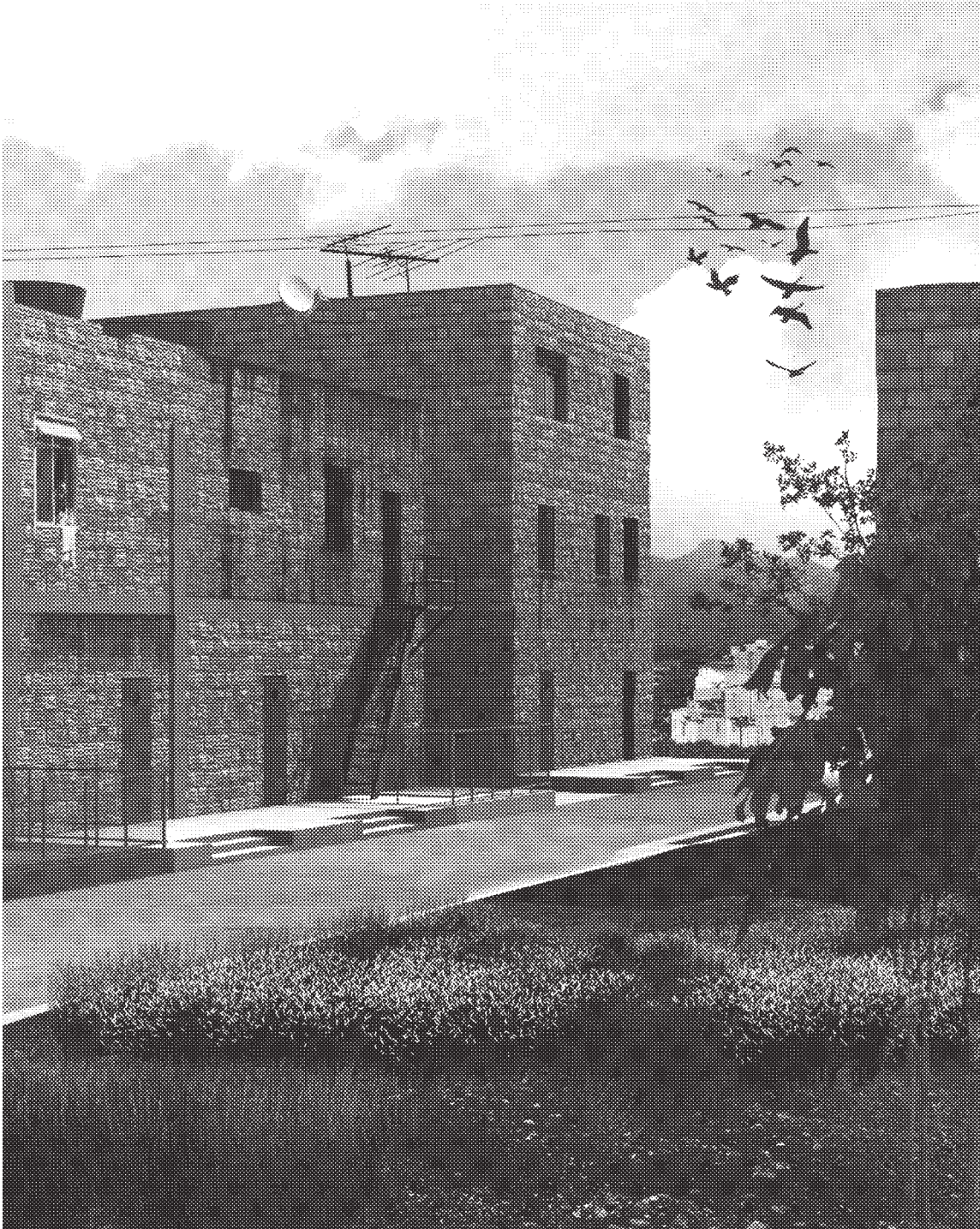
A public space in one of the blocks is temporarily appropriated as an urban soccer field.



A commercial front opens up to a side street, that only provides vehicular access to commercial suppliers.



*Concentrated commerce on certain streets
leaves room for quiet housing on others.*



Back entrances face exterior gardens: Commercial activities are orientated towards the main street so that the back of the house can provide a quiet, peaceful and naturally ventilated space for its residents, as well as some land to garden.