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Interior Design Department



Ministry of Higher Education
& Scientific Research
Iraq – Kurdistan

Residential Types in Residential Complexes

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MSc. in Architectural Engineering – Urban Design

Residential Types in Residential Complexes

Family type

Use type

Plan type

Dwelling unit type

Residential building type

Grouping type

:Family type -1

It's the base in formation the other types, and there's 4 types of families: (nucleus family, growing family, extended family, shrinking or stable family).

:Use type -2

The function of the space, and there's 4 types of using: (public, semi-public, semi-private, private).

:Plan type -3

There's endless types of plans of residential unit and that depends on space relations, spacial organization and user needs.

4- Dwelling unit type:

There's 3 types in dwelling unit classification:

First type: according to family volume like small dwelling unit or medium or large.

Second type: according to open elevations like one open elevation or two or three or four (detached houses, .(semi-detached houses, row houses, court yard houses

Third type: according to dwelling unit form like square design .or L,T,U,Y-shapes

:Residential building type -5

It's the homogenous cellular unit that compose the :residential urban fabric. And there's 2 types of it

Low rise single family residential buildings (horizontal - .(housing

High rise multi family residential buildings (vertical - .(housing

:Grouping type -6

:There's 2 types

First type: Linear Grouping, It is the placement of buildings or :residential units side by side. It includes a range of methods

Gradient Linear & Straight Linear: Where it is with the -1 contour lines of the site, with the inclination (slope) of the streets or with the direction of the streets

Double Linear: It is through the formation of a specific -2 design unit as desired by the designer and repeat this unit on the whole site. This unit consists of two residential units or two residential buildings

Sequential Linear: It is through the repetition of a -3 particular unit consisting of a set of condominiums (building or house) replicated on the whole site

.Overlapping or Interlocking -4

Second type: Cluster Grouping, Is a collection of residential buildings around an open space used as private parking for this group or used as a playground for children in this residential group. Preferably in hot areas where this open space can be a natural way of lighting, but this pattern leads to the spread of housing sites with large areas

:The residential building type

It's the homogenous cellular unit
that compose the residential
.urban fabric

The residential building type

High rise multi family residential buildings (vertical housing)

Low rise single family residential buildings (horizontal housing)

Mega structure

Towers

High rise

Medium rise

Gallery buildings

Corridor buildings

(Tower buildings (central core

Multi vertical movement buildings

Skip stop buildings

Detached

Semi-detached

Row

Court yard

Low rise single family residential (buildings (horizontal housing

This pattern is the first beginning of human habitation since it emerged from the cave and discovered the techniques and .methods of construction

:Advantages

Provide privacy for the individual and the family at -1
a higher level than vertical housing (visual and

.(auditory aspect

.(Reduction of supervision ratio (visual aspect -2

Gives the dweller direct contact with the open -3

.space

It provides the resident with an identification of -4
the phenomenon of personal imprint or

.personalization of the place

:Disadvantages

Affects the area of urban planning where the -1
horizontal extension leads to increase the proportion
of land use for the activity of housing and reduce the
.need for other service activities

.Enlargement and expansion of the size of the city -2

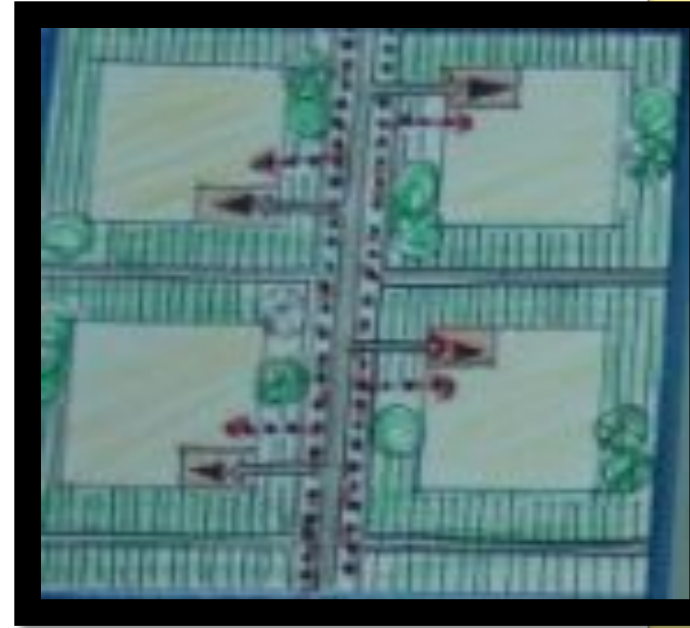
The low percentage of population density and -3
housing density in the city in case of horizontal
.housing

There are no landmarks and characters, and there -4
.is no change in the sky line

Low rise single family residential buildings types

:Detached Houses -1

They are houses that is built on large plots of land, which leads to the unit being surrounded by open space from four sides. The area of the plot ranges from (600 – 800) sq.m. This pattern has emerged with the idea of **Garden Cities** which designed to have the largest proportion of open spaces. Coverage is only 30%. The housing density in this pattern is (13-21) housing units / ha. This mode is built on the delivery of the car into the housing unit with a private parking, and the rebound in this style is 4 meters away from the boundaries of .the piece





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:Semi-Detached Houses -2

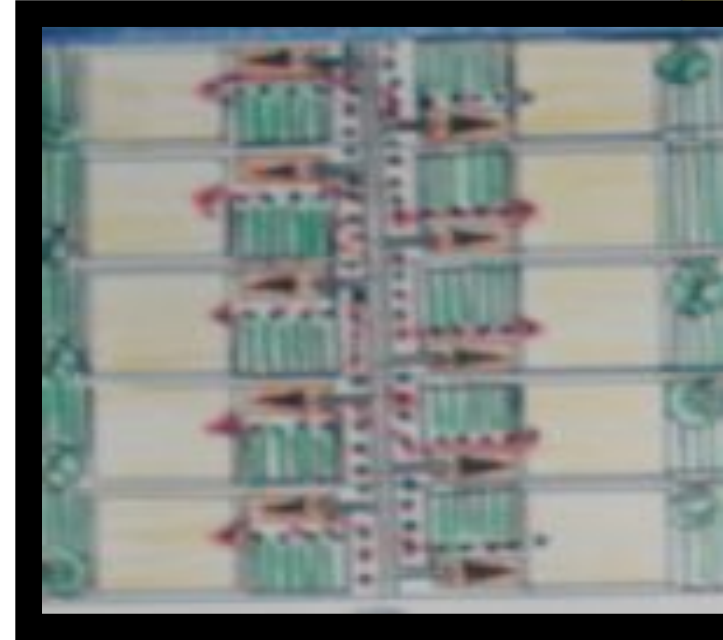
They are houses including the linking of the housing unit with the neighboring housing unit with the opening of the residential unit from 3 sides. The area of the plot ranges from (400 – 600) sq.m., and the coverage rate is 45%. The housing density is (21 - 28) housing units / ha. This pattern is designed to enter the vehicle into the residential plot, and the rebound is 4 meters from the .edge of the piece

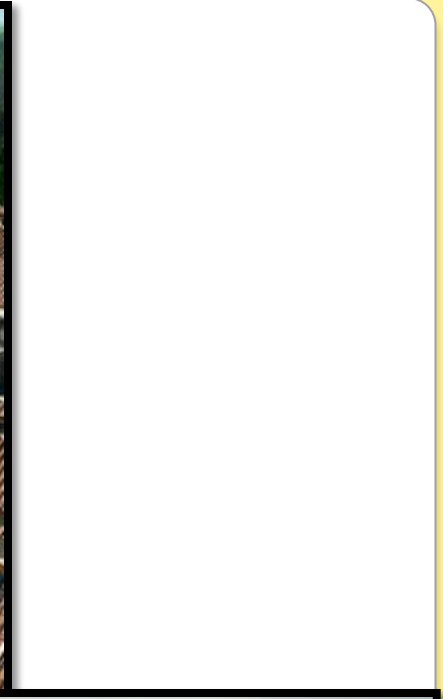




:Row Houses -3

They are houses that emerged with the ideas of the planer Doxiadis, which was applied in the eastern housing and western housing of Baghdad. It is characterized by the small size of the residential plot, which ranges between (300 - 400) sq.m., there will be a front and back garden, a larger background to achieve privacy, housing density (24-42) housing unit / ha, coverage ratio 60%, and rebound 2.5 meters limits of the segment. This pattern was built at the beginning of its emergence on pedestrian traffic and the lack of .private parking





:Court-Yard Houses -4

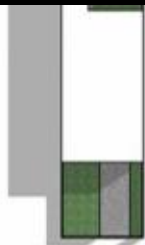
This pattern is found in the old city centers and it's based on pedestrian movement in design. The forms of residential plots are irregular, and the residential unit is open on one side only from the entrance. It's connected to the neighbors from the other three directions. It ranges from (150 – 250) sq.m.. As a matter of fact, there are smaller pieces (50 - 60) sq.m.. Housing density (28 - 48) housing units / ha. Coverage is 75%, and the rebound is 2.5 meters from .the boundaries of the plot



2 storeys
 dimension 6.7x22.9m (22'x75')
 living footprint area 112m²
 built-up area 184m²
 backyard footprint 0m²
 courtyard footprint 20.4m²
 setback along the front



B1



B2



B3



B4

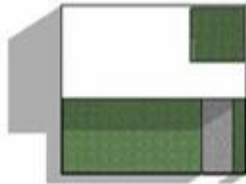


B5

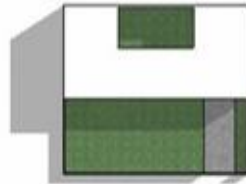
yard terrace C
 2 storeys
 dimension 15x13.6m
 living footprint area 112m²
 built-up area 184m²
 backyard footprint 0m²
 courtyard footprint 20.4m²
 setback along the front



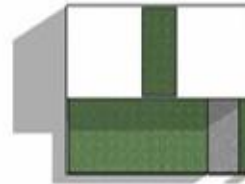
C1



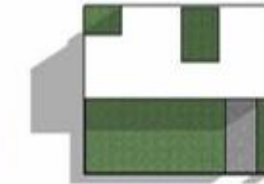
C2



C3



C4



C5

yard terrace D
 2 storeys
 dimension 10.6x16.7m
 living footprint area 112m²
 built-up area 184m²
 backyard footprint 0m²
 courtyard footprint 20.4m²
 setback along the front



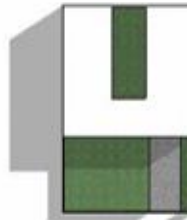
D1



D2



D3



D5



D6

yard terrace E
 2 storeys
 dimension 10.6x16.7m
 living footprint area 112m²





Type	Levels
1 Rural Single Family	2
2 Suburban Single Family	2
3 Terraced Apartments	3-6
4 Park/Ocean View Terraces	3
5 Ocean View Villas	2
6 Townhouses	2
7 Hill Apartments	4
8 Crescent Apartments	2
9 Ocean View Apartments	4-6

Total Site Area: 13.91 hectares

employment / mixed-use residential precinct

Site Area: 8523 hectares

New traffic lights

Trotting track

new park with water quality feature & community facilities

Club

Wellness Centre

TENNIS COURTS

parking

Bowling Club to remain with possible improvements

Preschool

NORTHERN DISTRIBUTOR EXTENSION
parking under highway

detention
r. 23.5

EXISTING PARK

detention

terraces

NEW PARK

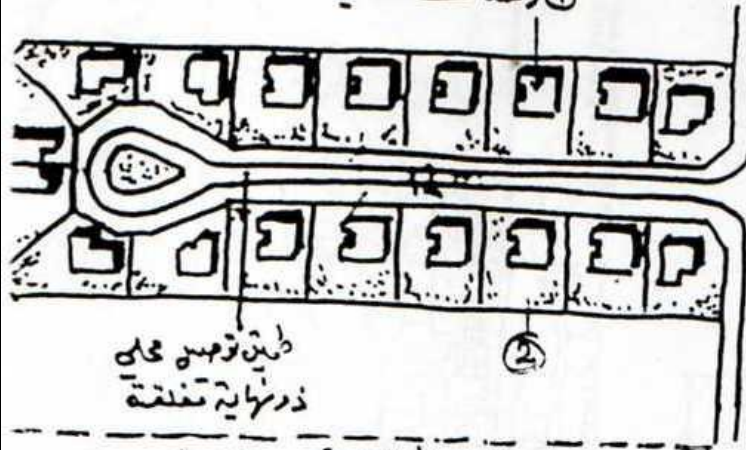
Access Road Site Area: .33 hectares

Site Area: 12.73 hectares

Neighbouring Unit

١٥٠ م طول طويق التوسيع

① وحدات سكنية



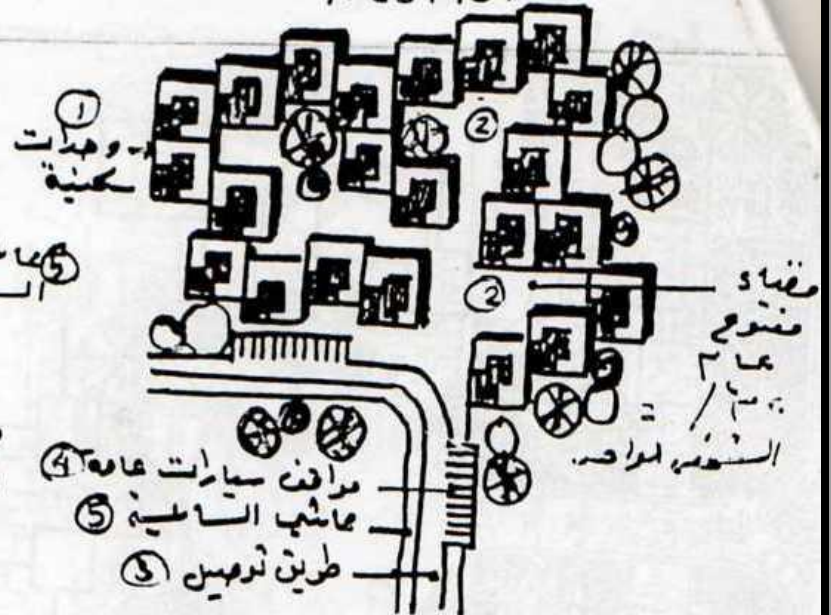
طريق توسيع على ذرىاية منفصلة

طريق حلقي 100m

نموذج لمنطقة وحدة الجوار السكنية
/ يضم السكن دور منفردة الاسرة -
دور منفصلة

04

① وحدة اجوار السكنية Residential Precinct



① وحدات سكنية

⑤ عمارات السكنية

طريق توسيع

④ مرافق سيارات عامة

⑤ عمارات سكنية

⑤ طريق توسيع

قضاء متنوع عمارات السكنية الواسعة

نموذج لمنطقة وحدة الجوار السكنية
/ يضم السكن - المضاء الوسطي

Multiple family Multi-story residential (building (Vertical Housing

:Advantages

- Exploit the less possible area of land for housing -1
- .activity with increasing the amount of open spaces
- .Increase population density and housing density -2
- Vertical housing is a landmark in the city through -3
- which important areas can be distinguished or the
- .way and direction are known
- Vertical housing is important in changing the -4
- .skyline of the city

:Disadvantages

Not directly connected with the ground and with -1

.open spaces especially on the upper floors

Many psychosocial research and studies have -2

indicated the emergence of many psychological

diseases in vertical housing such as fear of rising or

.frequent crimes, theft or vandalism

Multiple family Multi-story residential building types

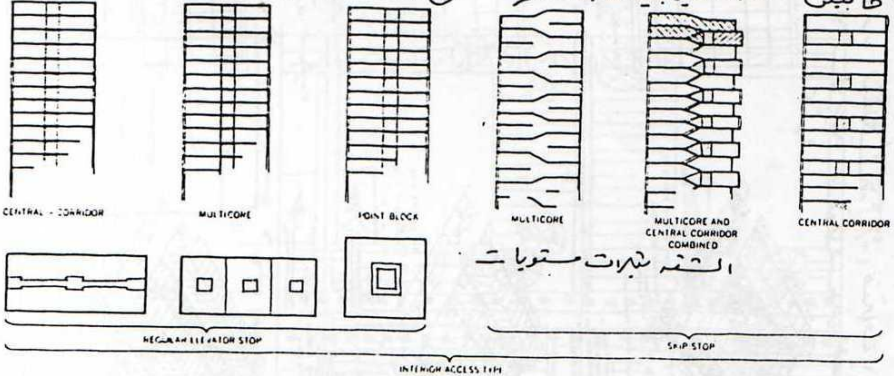
:Gallery Type -1

A group of apartments no more than 6 on each floor and the arrival of the resident through an external hallway, usually the gallery is put on the north or west direction because this direction is not preferred in terms of heat or the sun, and the width of this gallery (pathway) (1,20 - 1,50) m. because the load of apartments is by one side. The length of the gallery is (30 m) to the maximum extent to escape in the event of fire or .emergency situation



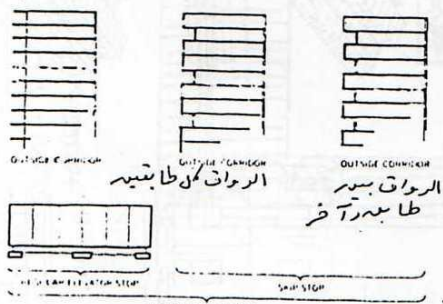
- Vertical movement points are signed on either side of the gallery (corridor or pathway) or in the middle of the movement in the middle of the gallery.
- Services may be signed on this gallery and provided openings above the level of view to prevent intrusion of strangers.
- Sometimes, to break the boredom, the designer may divide the building into two halves, where adjustments are made to the horizontal plan by splitting the block into two parts and signing the vertical movement in the middle.
- This is the most preferred pattern in dry hot areas to achieve transient ventilation due to loading on one side. Examples of this pattern are the Salhiya complex in Baghdad.

المناطق المحيطة بالمبنى المودرن / الدفليزية
 ① آلهة في كوكب - طابقت
 ② الدفليزية طابقت
 ③ الدفليزية طابقت

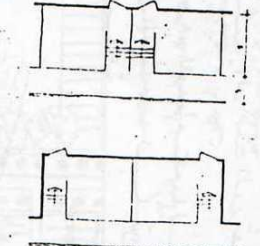
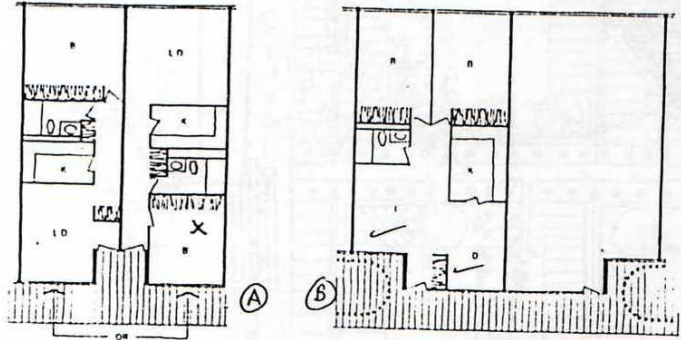
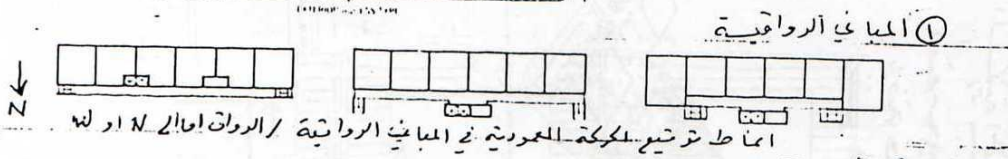


مباين رواقية

الرواق في تناسل الطار
 ① الرواق من طابقت
 ② الرواق بغير طابقت



① المباني الرواقية

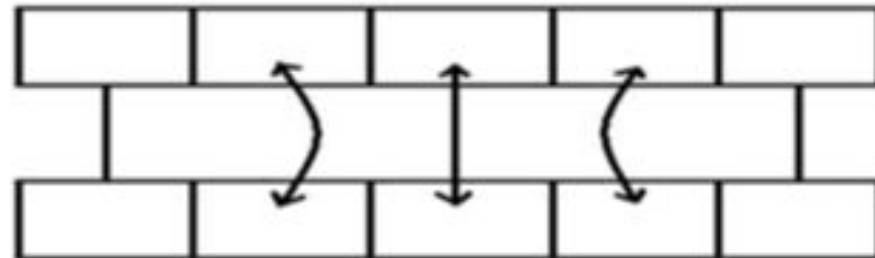


اما ط الحركة لإرضية
 في المباني الرواقية

محاولة لتصل الرواق
 عند الشقه وان يكون
 في اوطا لتخفيف
 المصومسته
 اما ط المداخل في المباني الرواقية ومحاولة سبب
 مدخل الشقه الى الداخل (A) او إتجاه وساعة للبيع
 اما الشقه (B)
 لا يصح وضع عذبة النوم على الرواق
 في تفضيل وتتم عرفة الطعام والحزبات والمعيته على الرواق

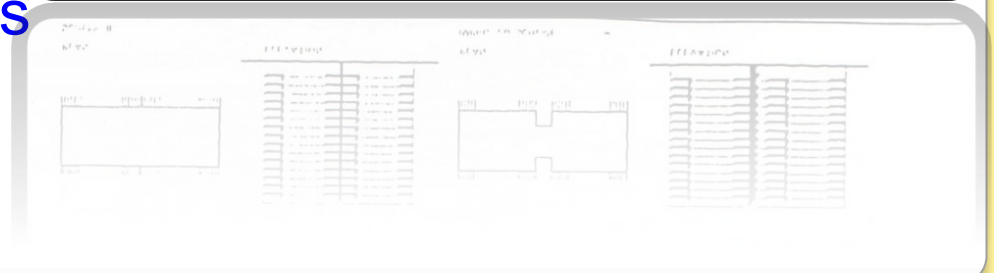
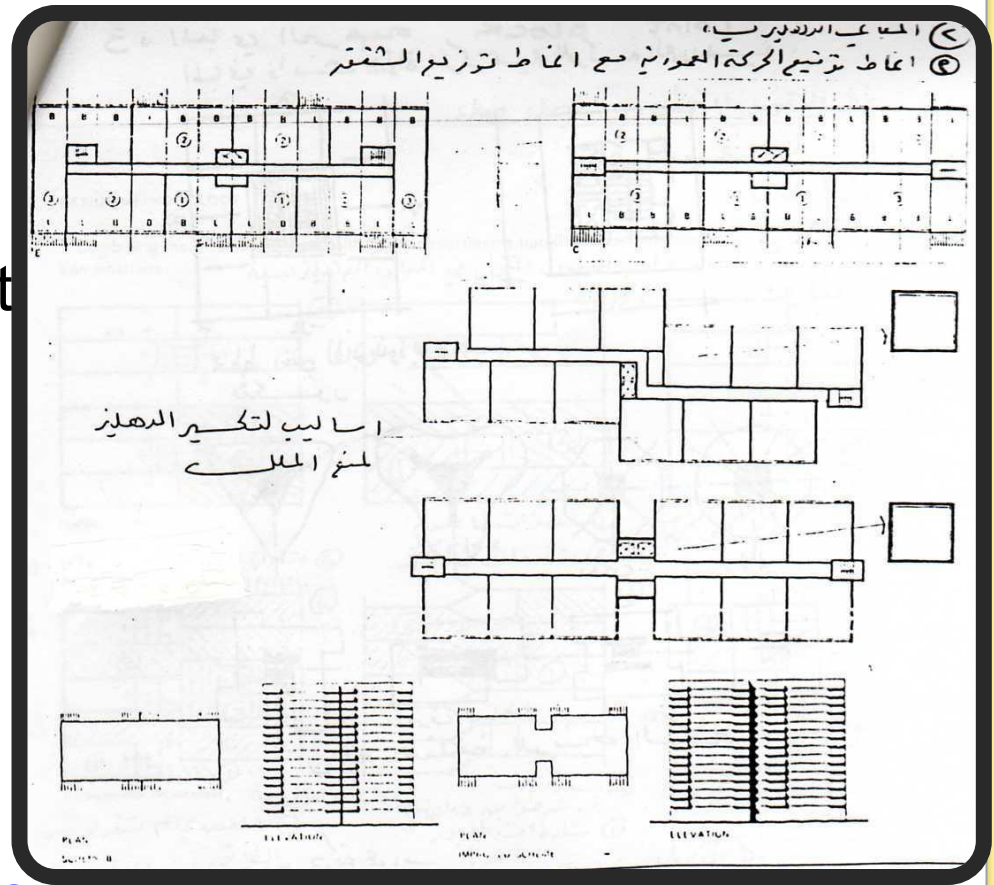
:Corridor Type -2

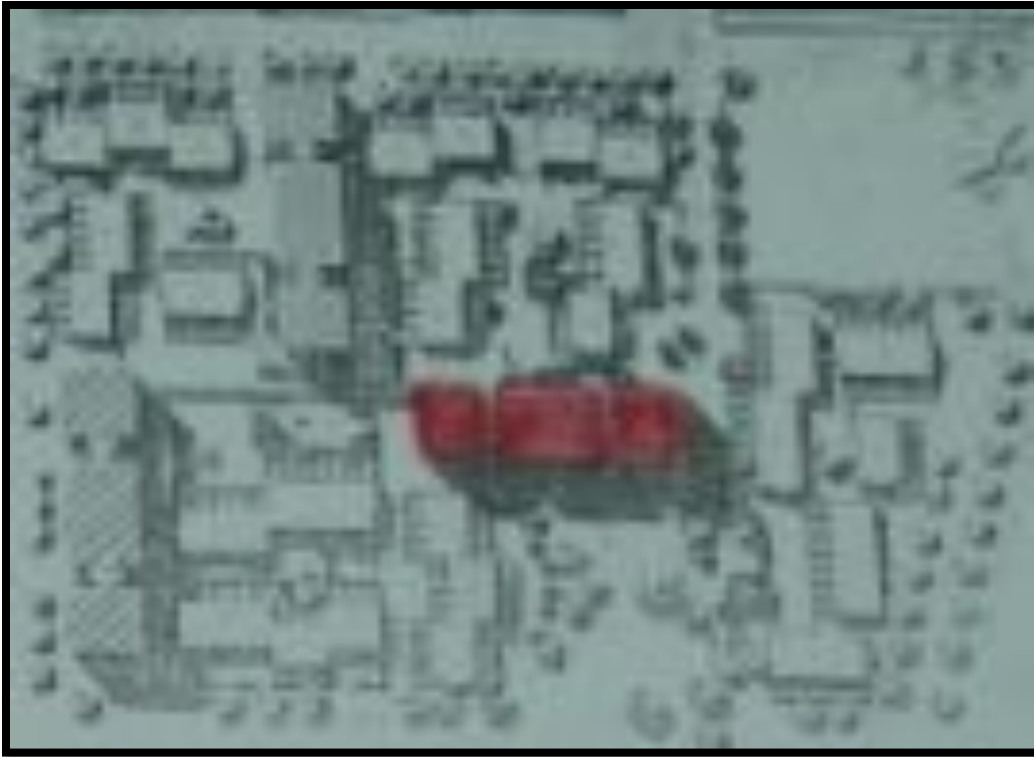
It is designed on the basis of putting the apartments on the sides of the internal corridor and the number of apartments in each side 6 apartments and thus the number of apartments on one floor 12 apartments. The internal corridor width (1,80 - 2,10) m. because the loading on two sides, length 30 meters. Services are signed on this internal corridor and the other .spaces are on the other side



This pattern is not preferred in dry hot areas for not achieving transient ventilation as it will be confined to the unpleasant odors within this corridor but is preferred in the cold areas, and 50% of the apartments get good direction and the rest is not .good direction

The style of Gallery and Corridor buildings is the development of Row Houses single family but as floors levels where they derived .from horizontal housing





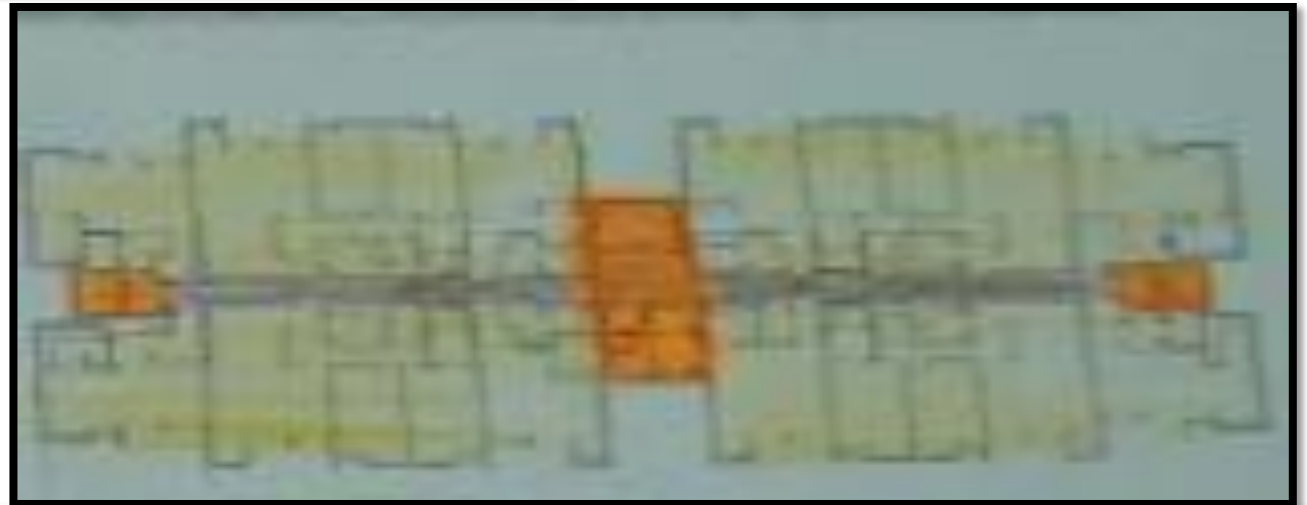
Residential Complex in Washington

Number of dwelling
units 453

Site area 8012 acre

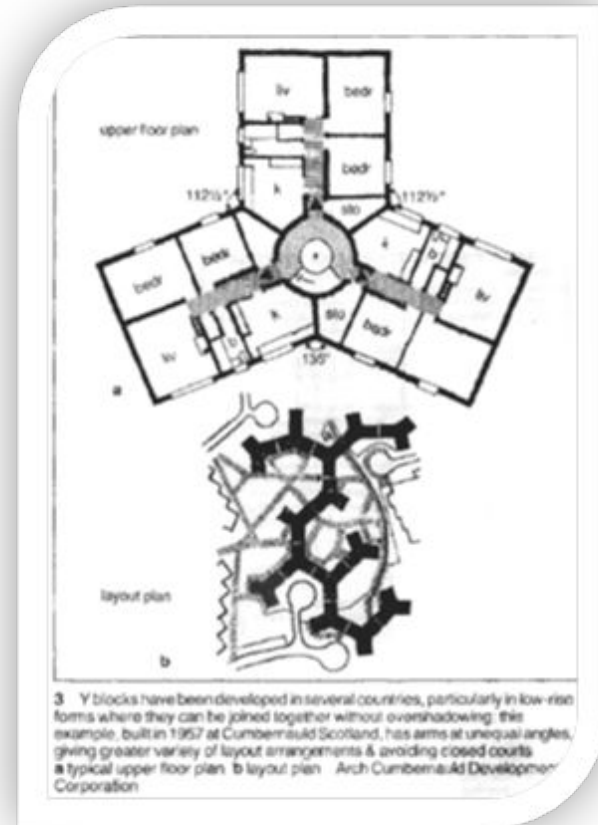
Average income
housing

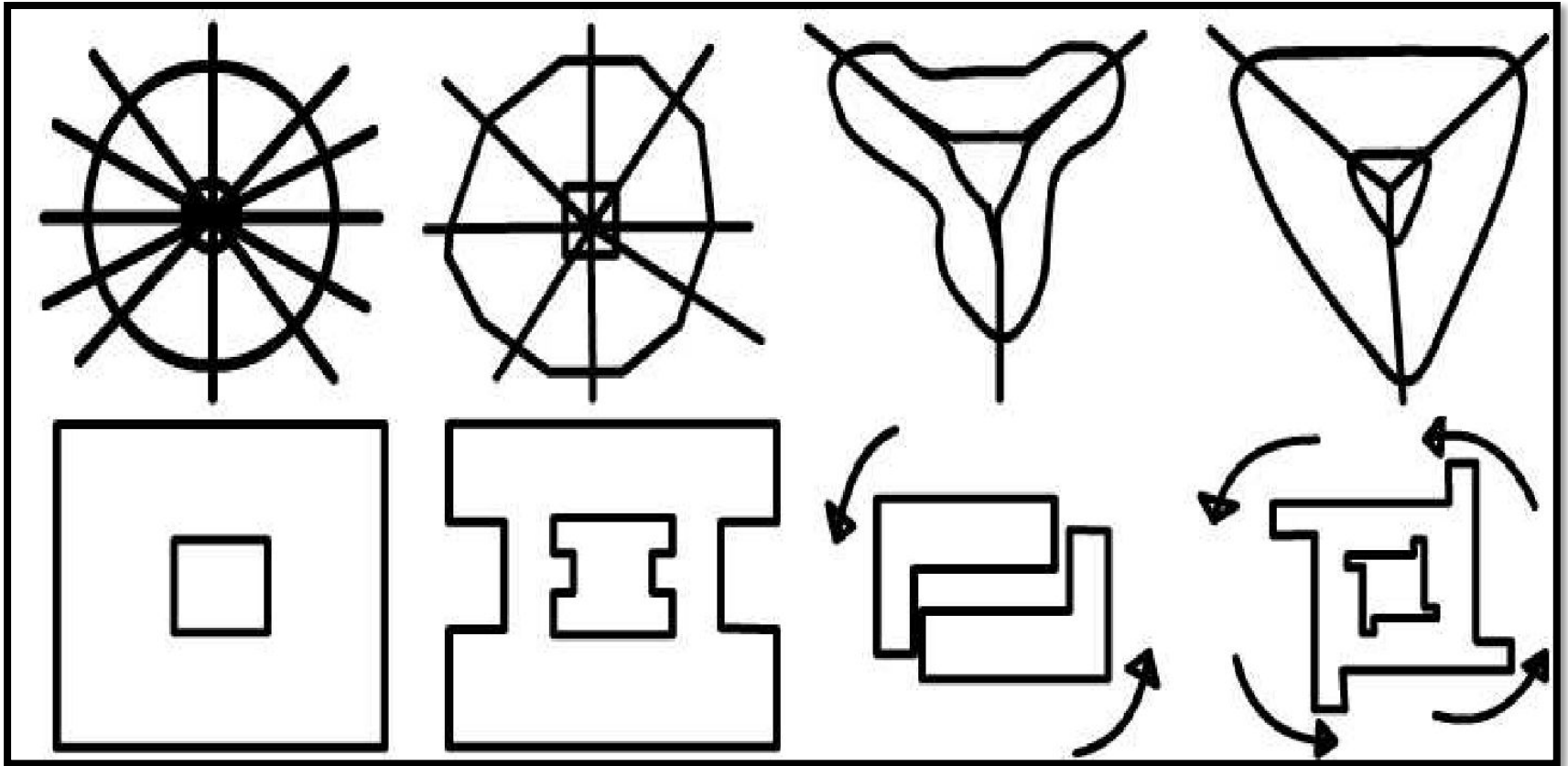
Corridor
Building in
Washington
Complex



:Point Block Type -3

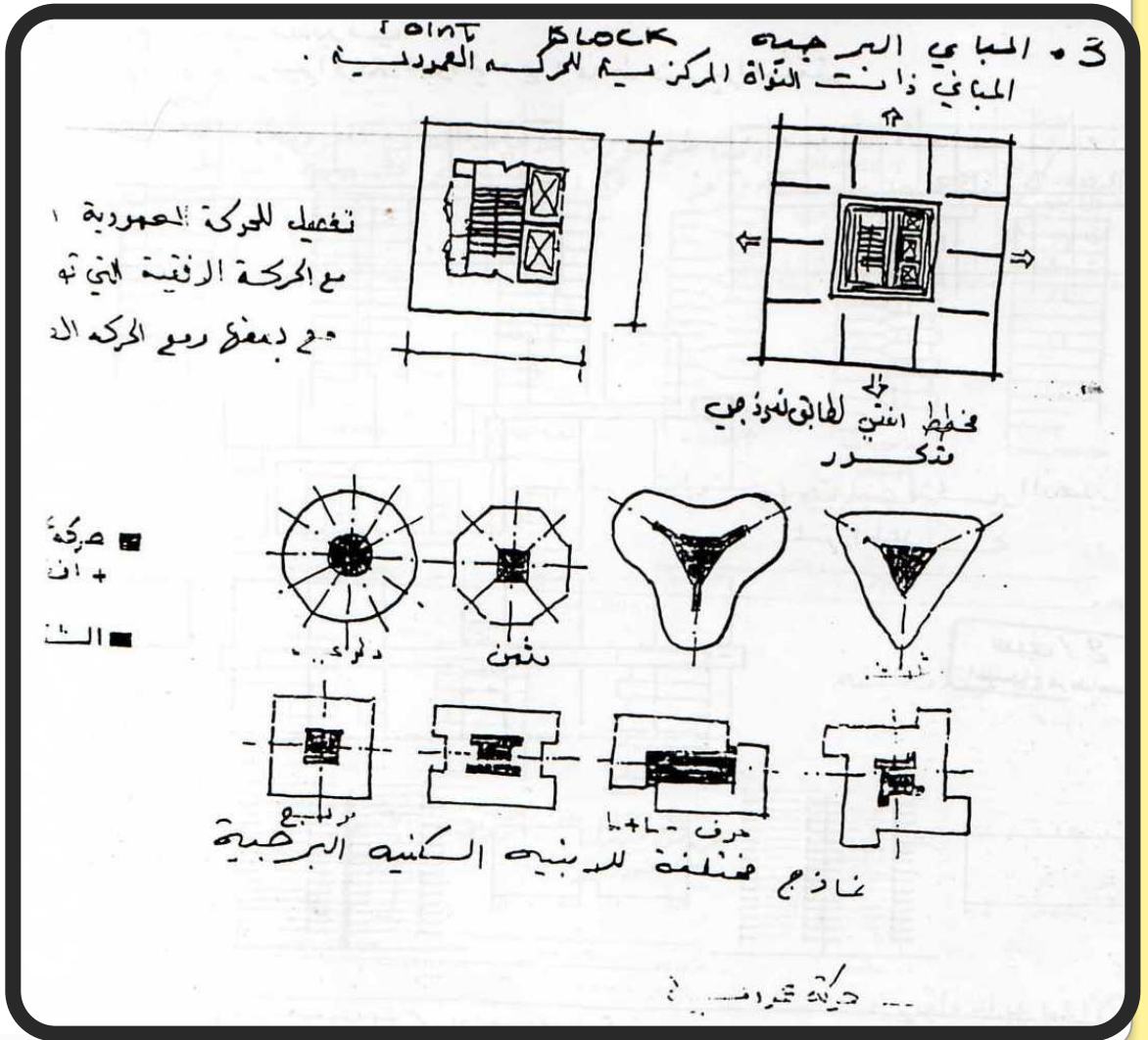
It is designed as a building that takes multiple forms that may be square, rectangular, triangular, octagonal or hexagonal, and the vertical and horizontal movement will be at the center of this shape. It is possible to turn into a middle courtyard and the movement will be on the sides of this courtyard. This style is characterized by increasing social relations due to the lack of apartments on the one floor and the proximity of them. But one negative is that 75% of the apartments achieve good direction .and 25% do not





Models of Point Block Buildings or Towers

The style of the tower buildings derived in their composition and design from the pattern of the Detached Houses in the horizontal housing.



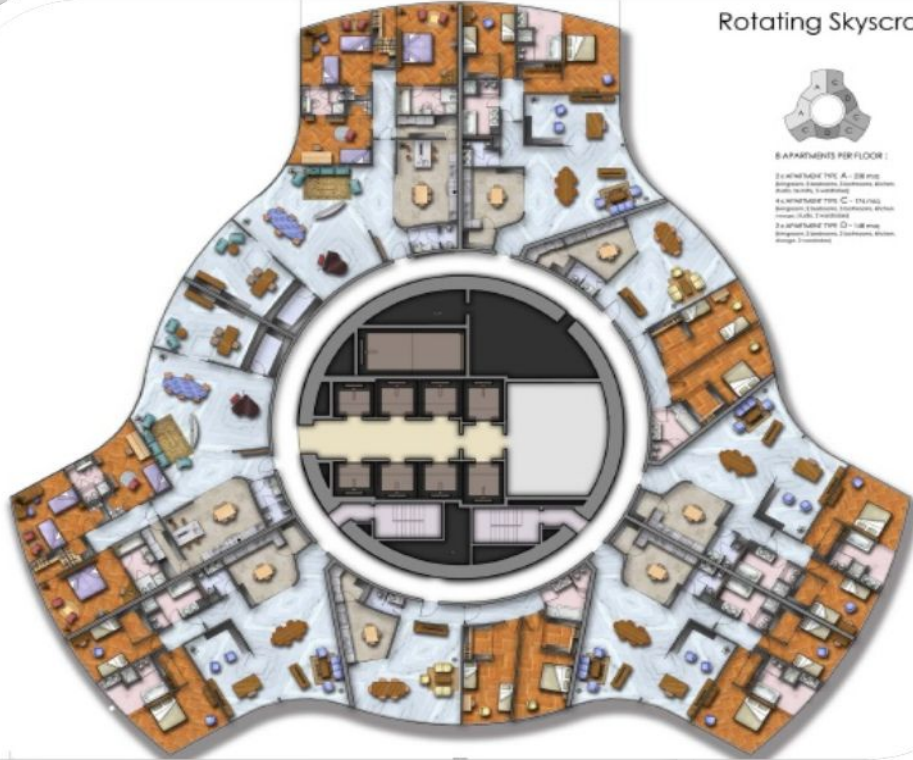
The Rotating Tower in Dubai

Rotating Skyscraper



APARTMENTS PER FLOOR:

- 2x APARTMENT TYPE A - 2BR plus
Bathroom, Balcony, Livingroom, Kitchen,
Walk-in-closets, Terraces
- 4x APARTMENT TYPE C - 3BR plus
Bathroom, Balcony, Livingroom, Kitchen,
Walk-in-closets, Terraces
- 2x APARTMENT TYPE D - 1BR plus
Bathroom, Balcony, Livingroom, Kitchen,
Walk-in-closets



Plan of Rotating Tower in Dubai consists of 8 apartments (2 & 3 bedrooms)

Rotating Skyscraper

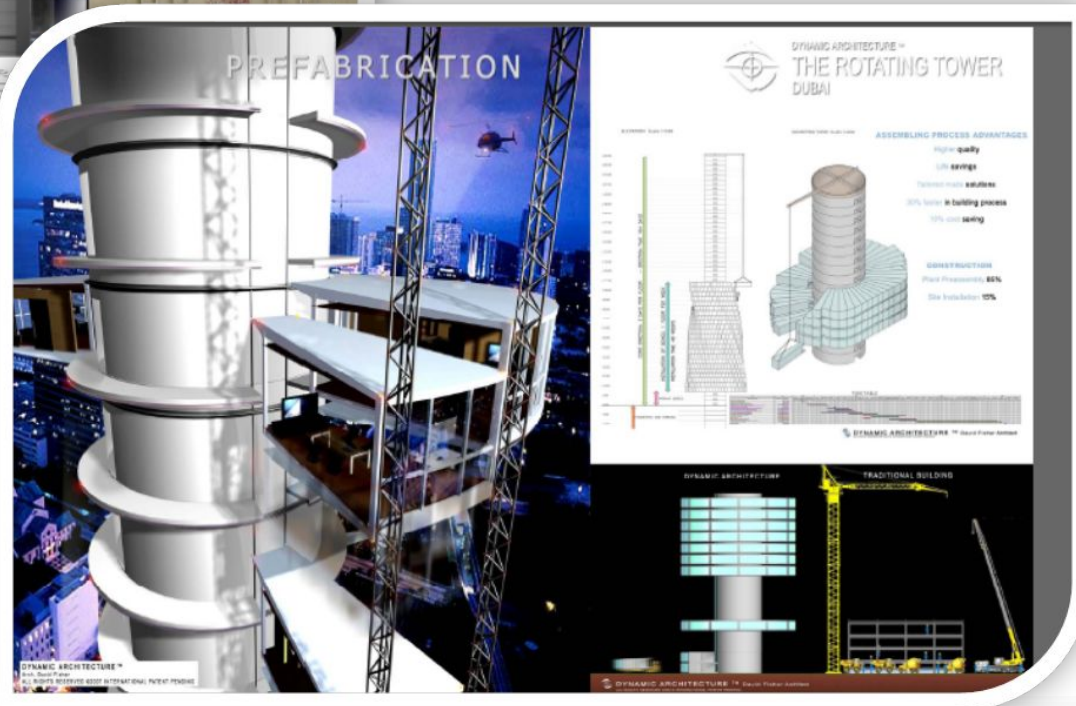


VILLA FLOOR



Plan of the villa in Rotating Tower in Dubai with upper private garage

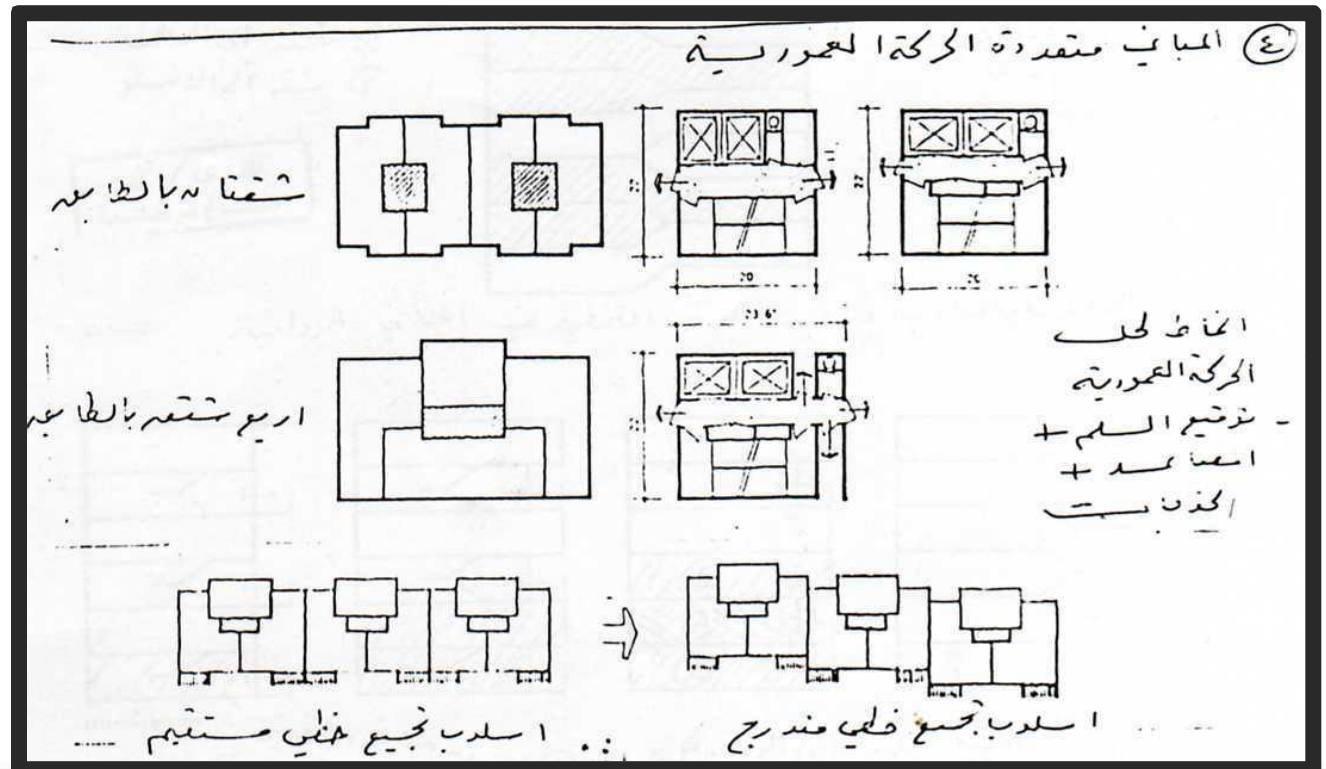
Section of Rotating Tower in Dubai



Details of Rotating Tower in Dubai

:Multi-core type -4

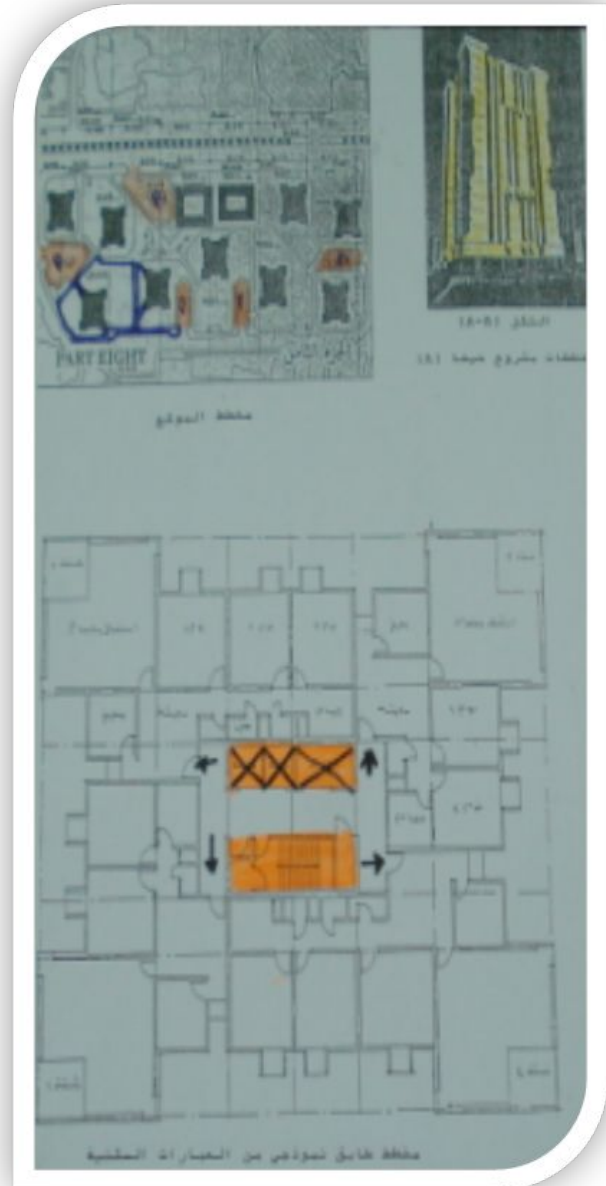
It is a residential style That consisting of two apartments and sometimes three serving with a vertical movement. The buildings are connected to each other so that they are connected on both sides (derived from the Row Houses in the horizontal housing) and open as a direction with front and .back elevation



This pattern is very expensive in the case of elevators and the reason is the large number of vertical movement points. This pattern takes multiple forms either linear or gradient depending on the location and the surrounding streets. In this mode all apartments achieve the correct direction required.

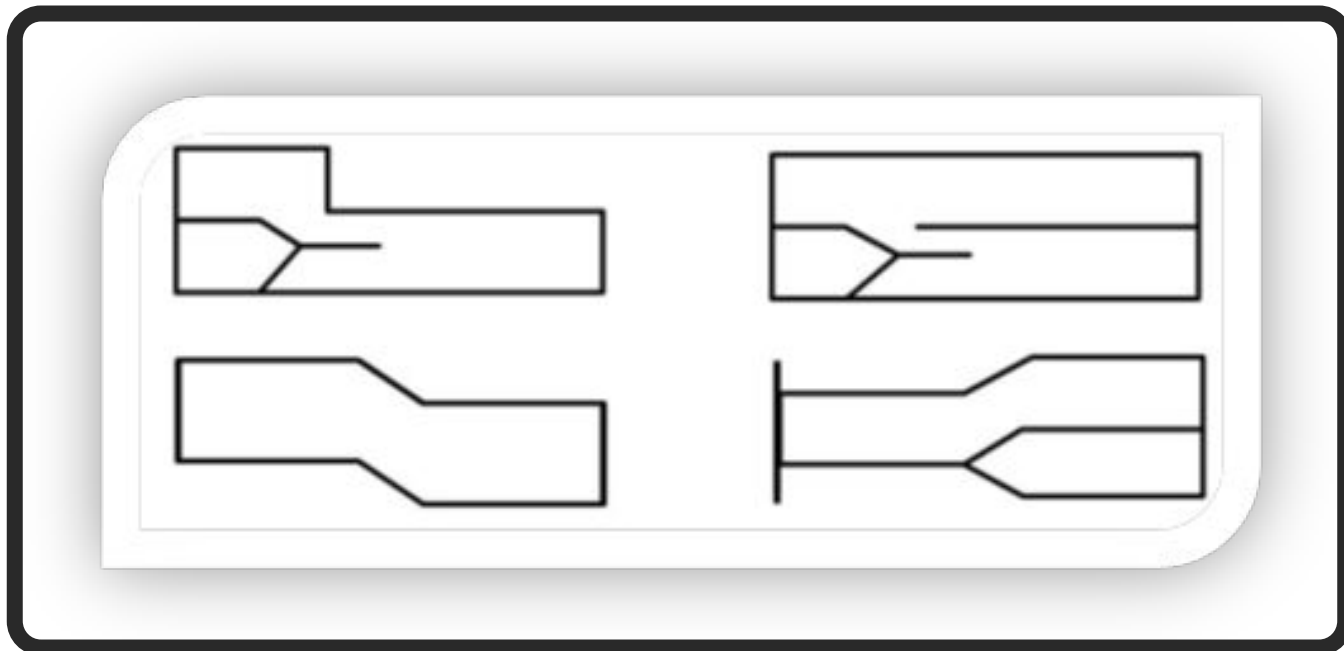
Examples include the buildings on Haifa Street near Bab al-Mu'atham and they are also tower buildings.

Haifa Street Buildings
in Baghdad



:Skip-stop type -4

The horizontal plan of these buildings is either the form of the Gallery or Corridor buildings, and it is called this name because the elevators are not standing on each floor, either between the floor and the floor when the apartment has two floors or each two floors when the apartment is 3 floors. Examples include the Marseille apartments designed by Le-Corbusier.



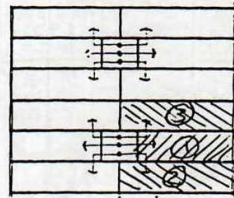
نظم الوقوف المتكثف skip stop

مقاطع عمودية

DESIGN METHODOLOGY

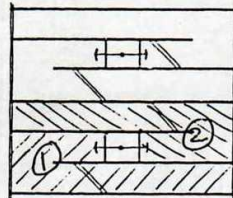
Combining the three basic types with regular apartments permits almost unlimited combinations.

انماط الوصول في المباني ذات الوقوف المتكثف في المباني الدخيلزية

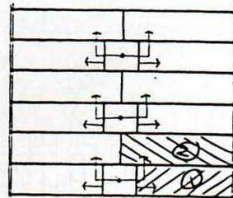


CENTRAL CORRIDOR

شقق الى اليمين شقق الى اليسار

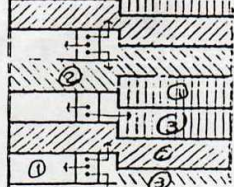


شقق ذات طابقين
شقق ذات طابقين



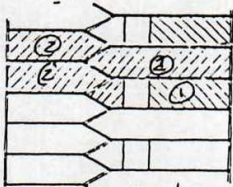
شقق ذات طابق واحد
في نفس مستوى الوحدة العمودية
شقق الى اليمين

الدهليز
شقق
طوابق
مساكن

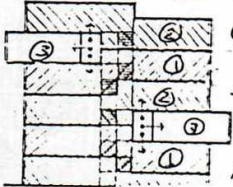


CENTRAL CORRIDOR AND MULTICOPE

المصعد يستخدم شقق في نفس الطابق
شقق الى اليمين
شقق الى اليسار

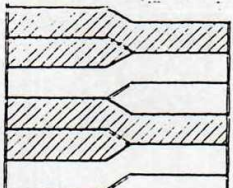


شقق ذات
شقق طوابق Triplex
شقق ذات طابقين



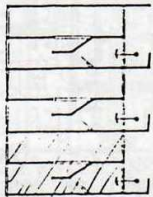
المصعد يستخدم شقق في نفس الطابق
شقق ذات طابقين
شقق الى اليمين
شقق ذات طابقين
Decplex
الى اليسار

الدهليز
شقق
طوابق
مساكن
Mezzanine
(مسطحة)



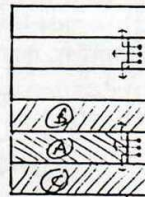
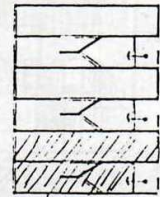
MULTICOPE

انماط الوصول في المباني ذات الوقوف المتكثف في المباني الرواقية

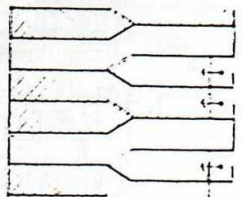


EXTERNAL CORRIDOR

عنا في رواقية
الرواق بسمة طابق واحد
والشقق ذات طابقين
Decplex



الرواق لكل
طابقين والوصول
شقق في نفس الطابق
شقق الى اليمين
شقق الى اليسار



طابقين ورواق
رطابقين ورواق
والشقق ذات طابقين
طوابق Triplex

Thank You