



BENHA UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF ARCHITECTURE

AE1342-URBAN DESIGN(1)-LECTURE 5

URBAN TISSUE

DR. MONA SHEDID

ASSOCIATED PROFESSOR , FACULTY OF ENGINEERING, BENHA UNIVERSITY

SPRING 2019

التشكيل العمراني



هو:

1. العلاقة التبادلية بين الكتل والفراغات العمرانية.
2. مجموع ملامح نظام الفراغات البينية وشبكات الحركة.
3. المظهر العام للمناطق العمرانية

النسيج العمراني

Urban Fabric: النسيج العمراني:

هو مجموع نظام الفراغات البنائية وشبكات الحركة والاتصال وهو لغة المسارات وشبكات الحركة ومعايرها والفراغات البنائية في نطاق ما.

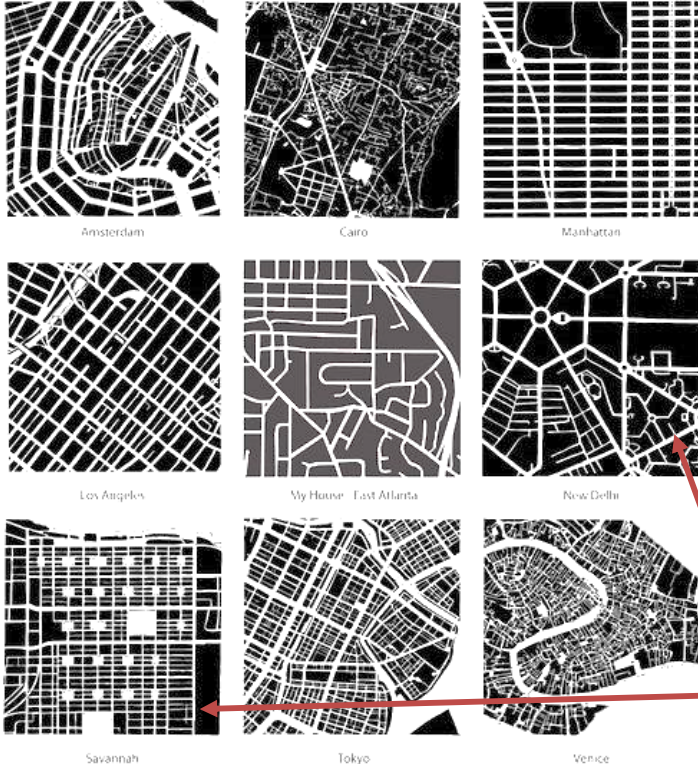
The city is composed of urban tissues.

Are constituted by a set of elements:

- urban form—streets
- plots and buildings

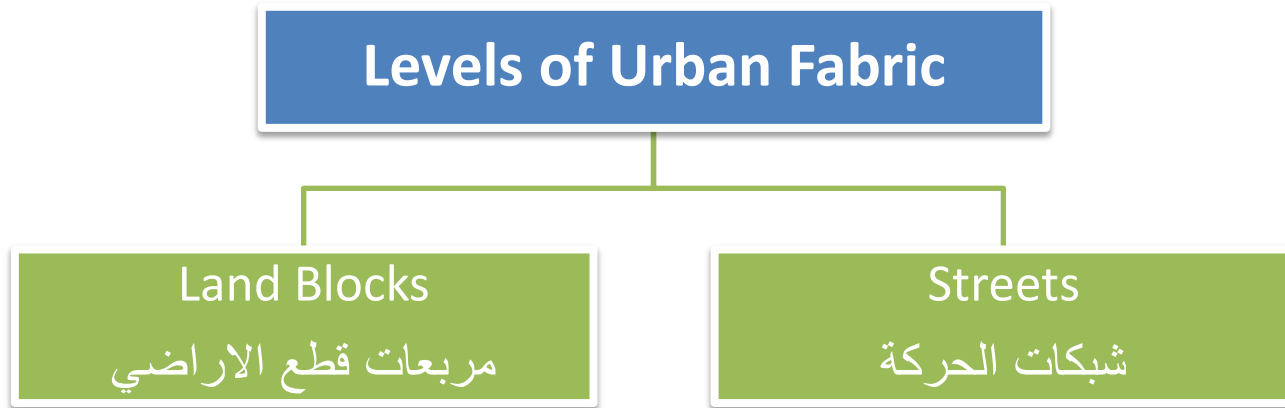


Combined in a **specific way, different types of tissues**



ELEMENTS OF URBAN CHARACTER

1- Types of Urban Fabric



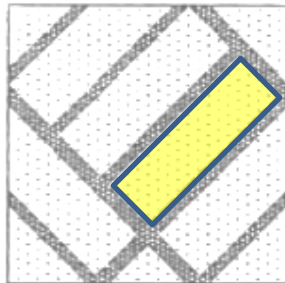
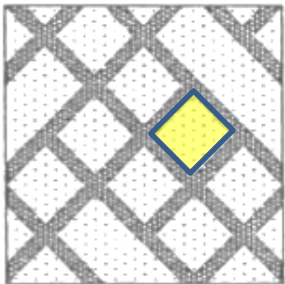
ELEMENTS OF URBAN CHARACTER

Classification of the Urban Fabric according to Street Networks:

Pattern of Street Network

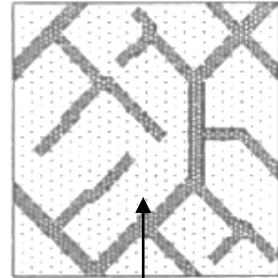
Regular Tissue

- Regular Streets.
- It has a clear direction.



Irregular Tissue

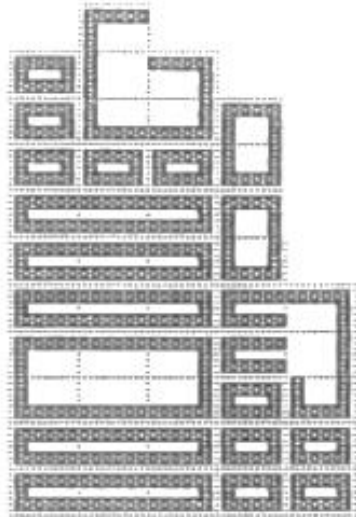
- Irregular Streets.
- It has no clear direction.
- Its main streets are branched into main and secondary paths.
- In old districts.



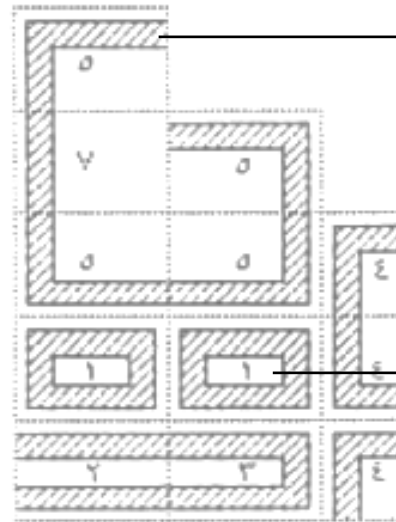
Ref.: عبد القادر. ن، التوني. س، إشكالية النسيج والطابع
Adapted by the Author

ELEMENTS OF URBAN CHARACTER

Tissue Zone Distribution (Habraken):



مثل لمنطقة قائمة في
مدينة هولندية (مع
تبسيط مقصود لمساور
الحركة).



Streets

Molecules الجزيئات
Or
Cells الخلايا

التعرف على الخلايا/
الجزيئات الشائعة.

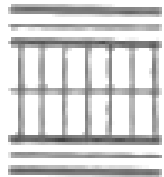
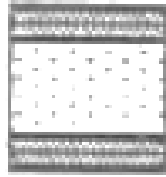
Ref.: عبد القادر. ن، التوني. س، إشكالية النسيج والطابع
Adapted by the Author

ELEMENTS OF URBAN CHARACTER

Different Types of Molecules or Cells:

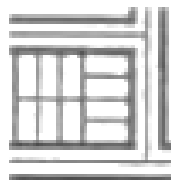
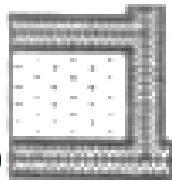
Land divisions bounded
by two parallel roads

Cell (A)

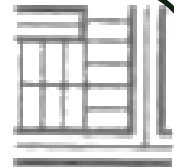
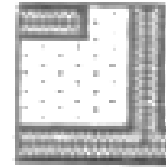


Land divisions bounded
by three parallel roads

Cell (B)

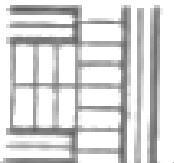
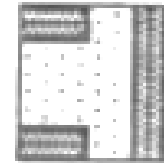


Cell (C)



Mix from Cell (A) & (B)

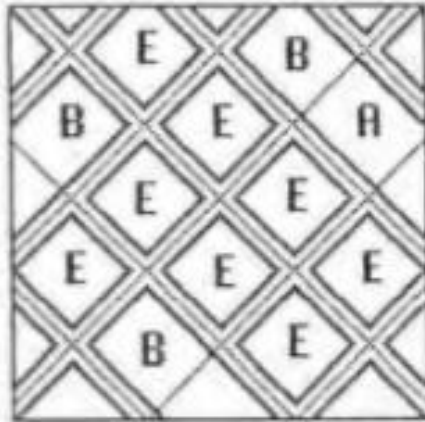
Cell (D)



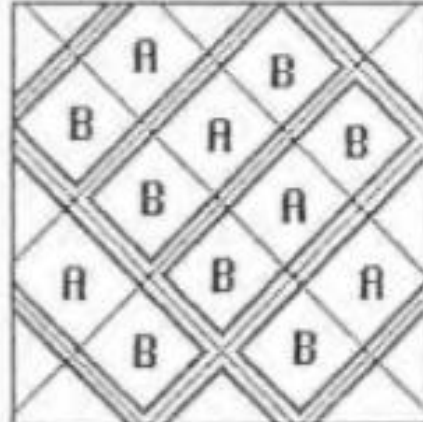
Ref.: عبد القادر. ن، التونسي. س، إشكالية النسيج والطابع
Adapted by the Author

ELEMENTS OF URBAN CHARACTER

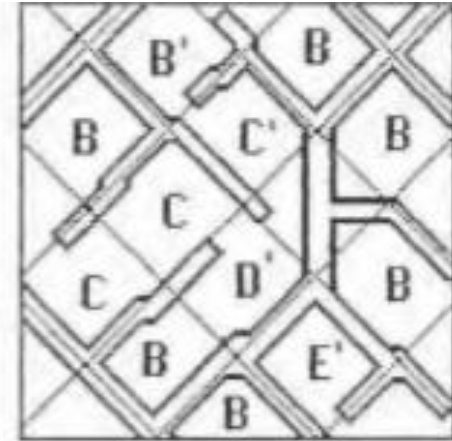
Different Types of Molecules or Cells:



Cells on regular tissue



Cells on regular tissue

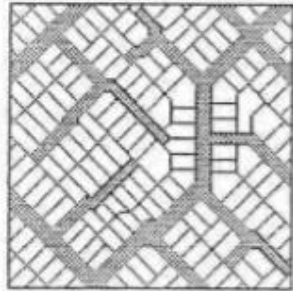


Cells on irregular
tissue

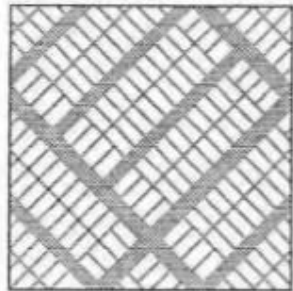
Ref.: عبد القادر. ن، التوني. س، إشكالية النسيج والطابع

ELEMENTS OF URBAN CHARACTER

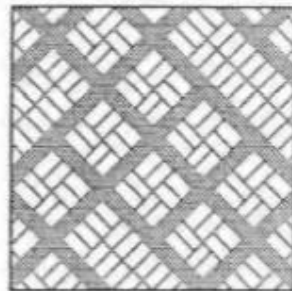
نسيج متشعب (شبكة
الحركة تعكس تكوين
عضوي متميز).



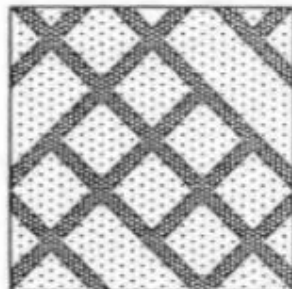
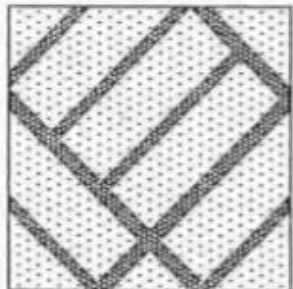
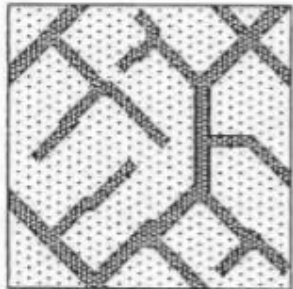
نسيج منتظم (مربعات
الأراضي ذات نسب
مستطيلة).



نسيج منتظم (مربعات
الأراضي ذات نسب
قريبة من المربع).

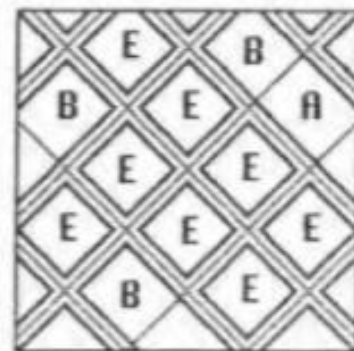
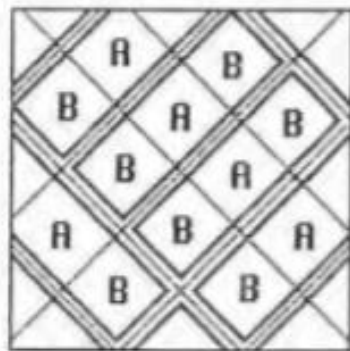
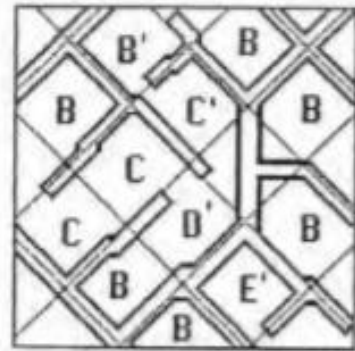
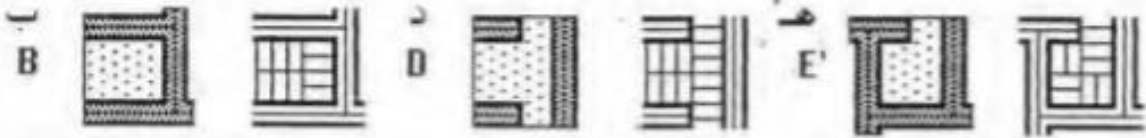
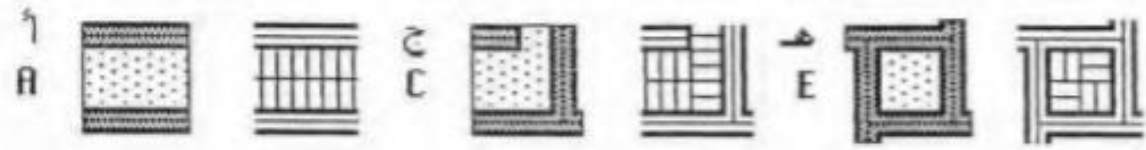


تقسيمات الأراضي
بين شبكات الحركة



شبكات الطرق
المحددة لمربعات الأراضي

ELEMENTS OF URBAN CHARACTER

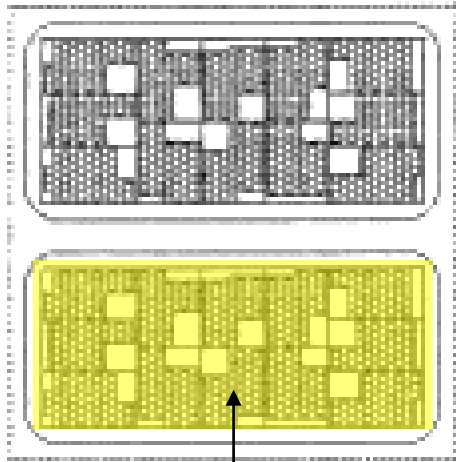


نماذج للجزئيات
(الخلايا)

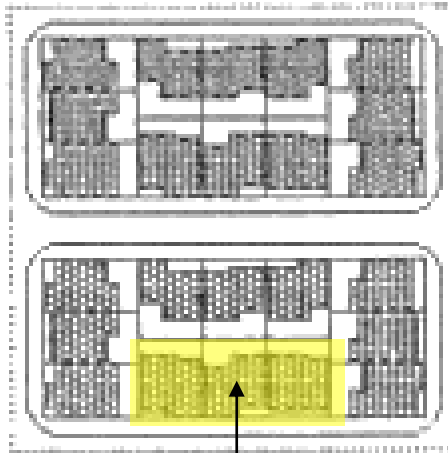
التعرف على نماذج
الخلايا المكونة للنسيج

ELEMENTS OF URBAN CHARACTER

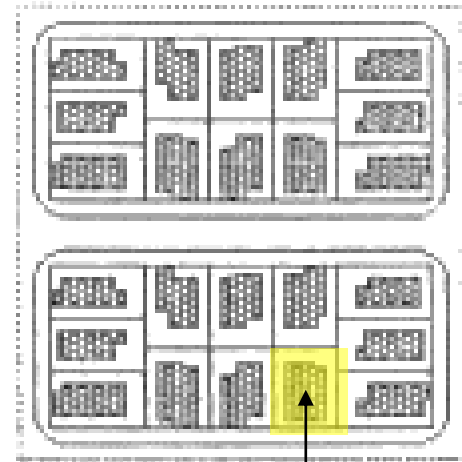
Classification of the Urban Fabric according to Land Blocks:



Compact Tissue



Linear Tissue



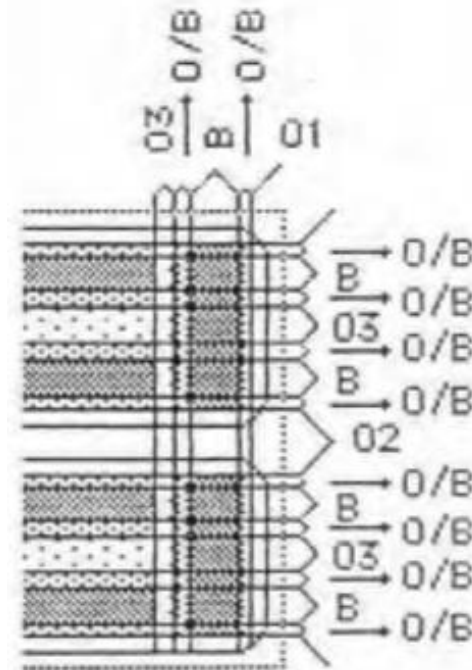
Point Tissue

Ref.: عبد القادر. ن، التوني. س، إشكالية النسيج والطابع
Adapted by the Author

ELEMENTS OF URBAN CHARACTER

Rules forming the Land Blocks (Habraken):

- Zone (B)= Built Zone.
- Zone (O)= Open Zone.
- Zone (O/B)= Open/Built Zone.

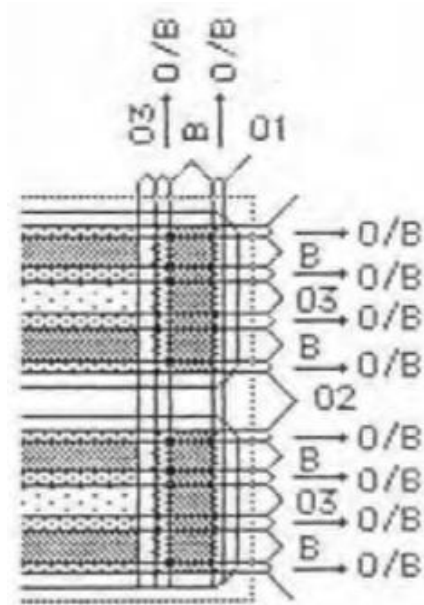


Definition of Zones

ELEMENTS OF URBAN CHARACTER

Rules forming the Land Blocks (Habracken):

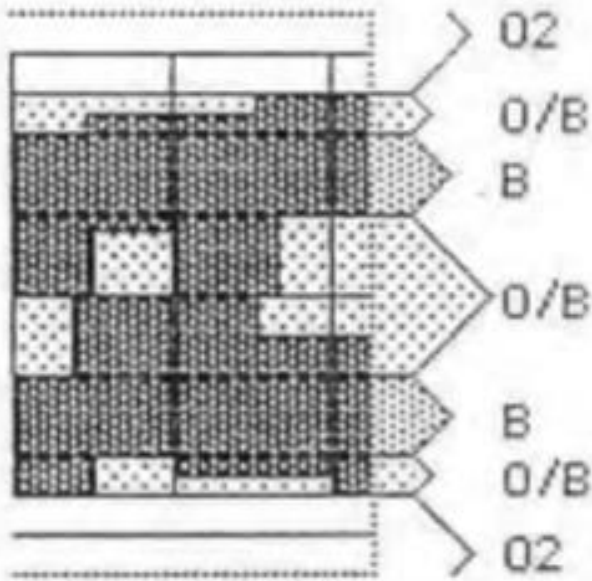
- **Zone (01)**= open spaces and street network.
- **Zone (02)**= semi public & semi private spaces
- **Zone (03)**= private spaces (only for pedestrian)



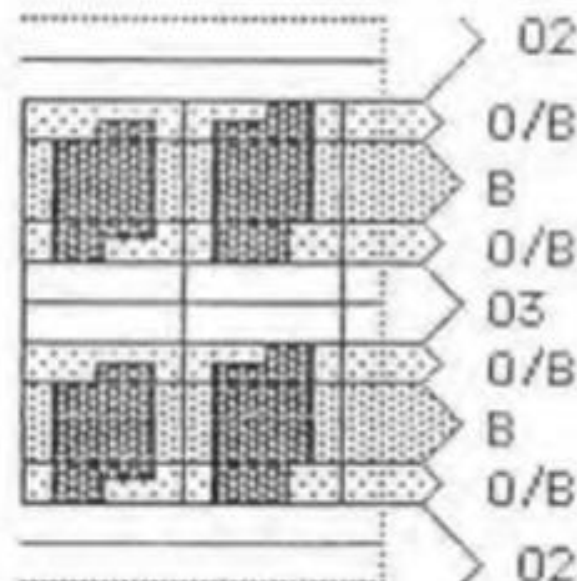
Definition of Zones

ELEMENTS OF URBAN CHARACTER

Rules forming the Land Blocks (Habracken):



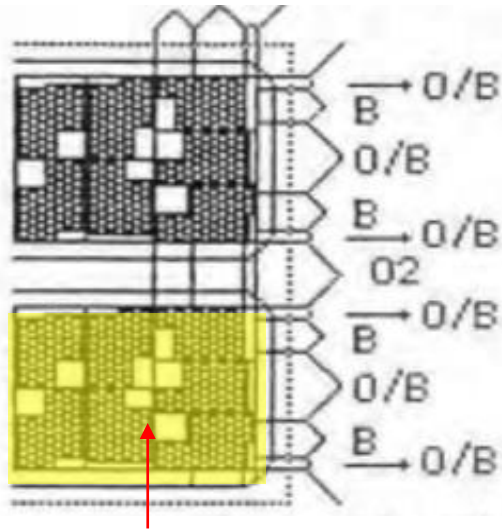
Example (1)



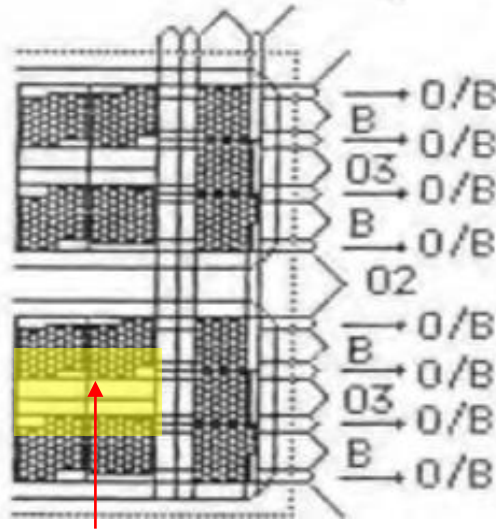
Example (2)

ELEMENTS OF URBAN CHARACTER

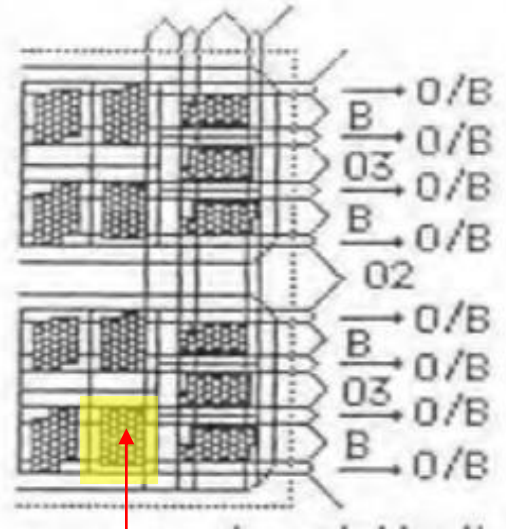
The Possibility of Combining the two Approaches "Tissue & Zone Classification":



Zones on compact tissue



Zones on linear tissue



Zones on point tissue

URBAN FORM

2- The Elements of Urban Form

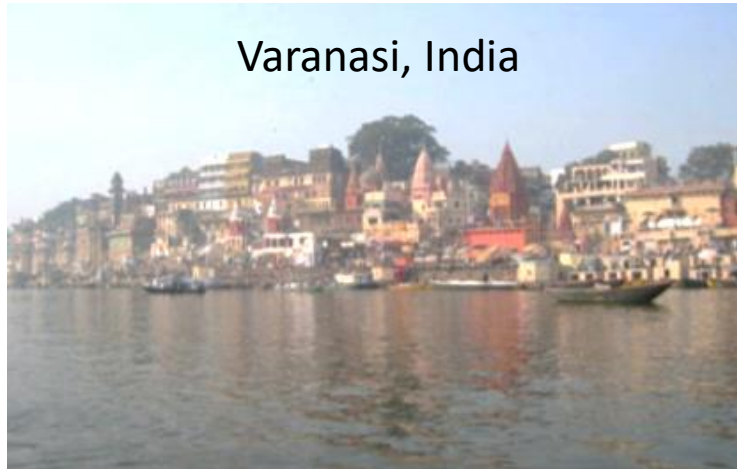
The Natural Context

Relationships between urban forms
and natural context



Venice, Italy

Ref.: eng.Wikipedia.org
Adapted by the Author



Varanasi, India

The urban forms
of this Indian city
seem to touch the
river, the life of its
inhabitants is
inseparable from
the Ganges River

Dr. Mona Y. Shedid

Ref.: eng.Wikipedia.org
Adapted by the Author

URBAN FORM

2- The Elements of Urban Form

The Streets System

There is a wide variety of streets, with different shapes and sizes, with different ways of relating with the other streets in the surroundings, and also with different urban functions.

Different streets in different cities



Broadway, intersection with the Champlain Street in New York
the Champs-Élysées Avenue in Paris

URBAN FORM

2- The Elements of Urban Form

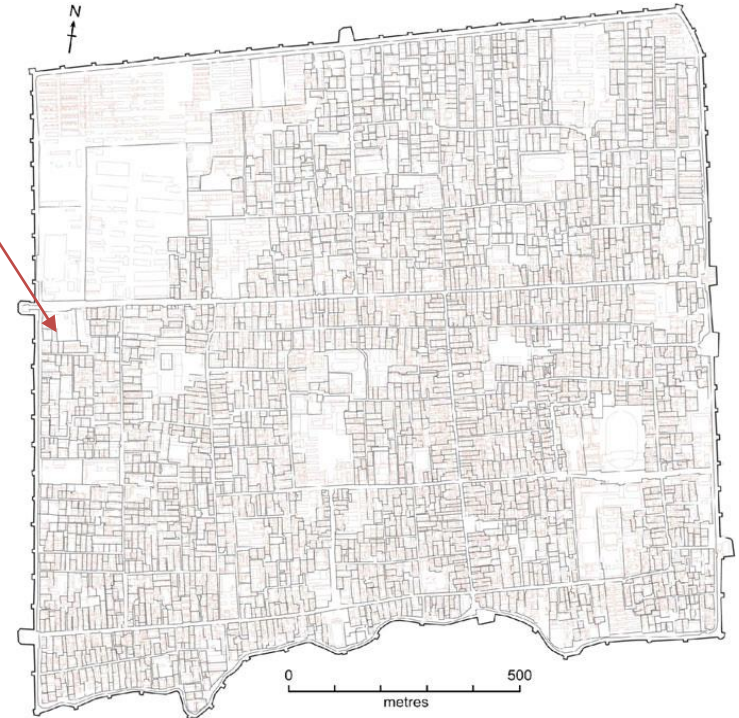
The Plots System

Is one of the most important elements of urban form, **separating the public domain and the private domain.**

An important element in the description and explanation of the physical form of the city is:

- The dimension of its street blocks.
- The number of plots per street block.
- How is each plot related with the street.

The plots system of a whole city, central Pingyao



URBAN FORM



2- The Elements of Urban Form

The Buildings System

Building Types:

Commercial

Residential

Political

...etc.

URBAN FORM

2- The Elements of Urban Form

The Buildings System

Building Character

Dubai



Nubia



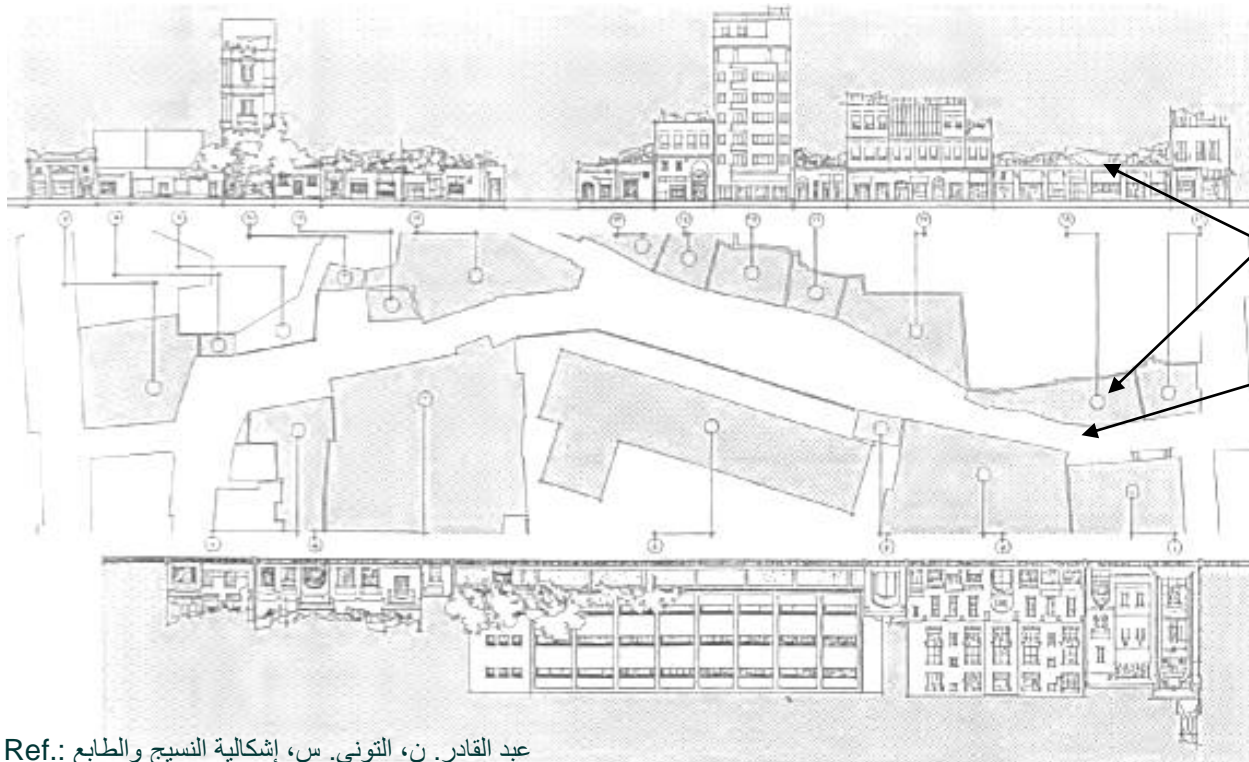
Chicago



Ref.: arabianbuisniss.com
Adapted by the Author

Tunisia

URBAN FORM



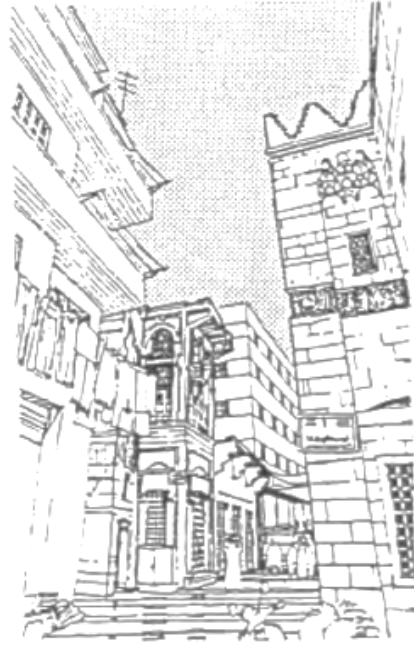
Relationship between
Buildings and Urban
Spaces

Ref.: عبد القادر. ن، التوني. س، إشكالية النسيج والطابع

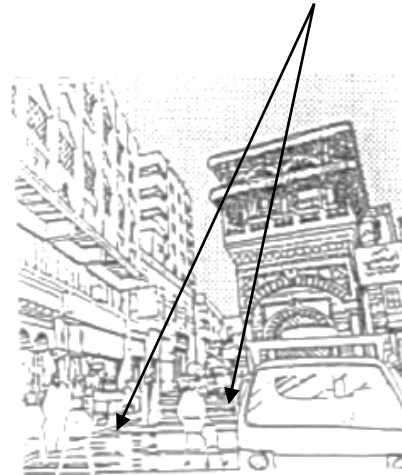
Adapted by the Author

URBAN FORM

Ref.: عبد القادر. ن، التوني. س، إشكالية النسيج والطابع
Adapted by the Author



Relationship between
Buildings and Urban
Spaces



Architectural and urban product

Architecture Character...

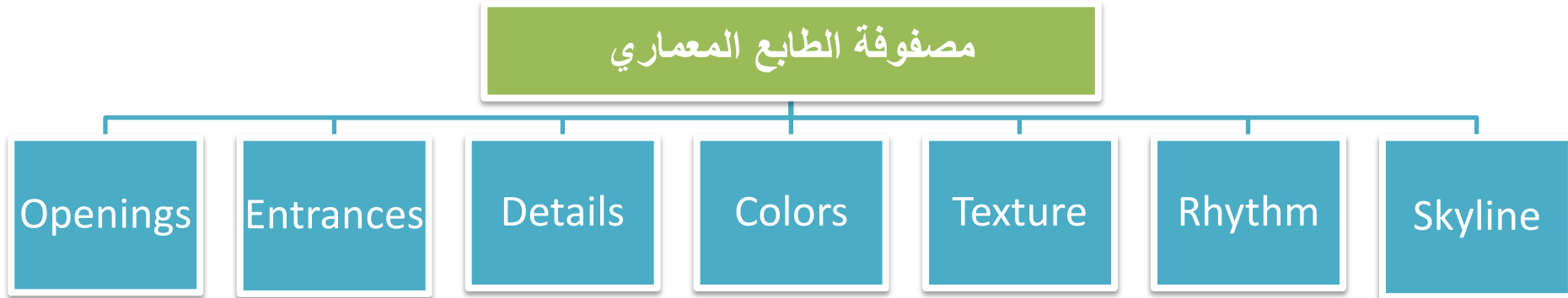
DEFINITION OF ARCHITECTURE CHARACTER

Elements include the overall shape of the building, its materials, craftsmanship, decorative details, interior spaces and features, as well as the various aspects of its site and environment.



Ref.: eng.Wikipedia.org
Adapted by the Author

DEFINITION OF ARCHITECTURE CHARACTER



Examples...



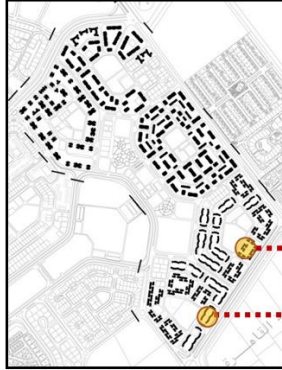
□ تصنيف النسيج وفقاً لملامح شبكات الطرق

Road Network



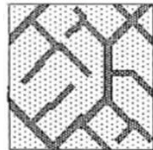
□ تصنيف النسيج وفقاً لنمط التنمية على مربعات الأراضي

Housing Blocks

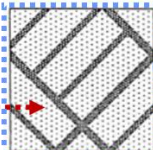


المصدر: خريطة هيئة المساحة، 2008.

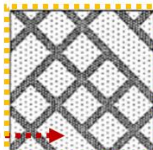
Road Network



نسيج متشعب

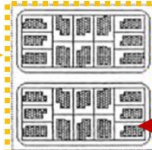


نسيج منظم

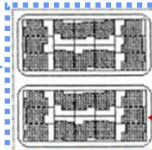


نسيج منظم

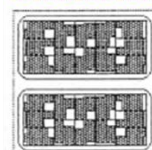
Housing Blocks



نسيج نقطي

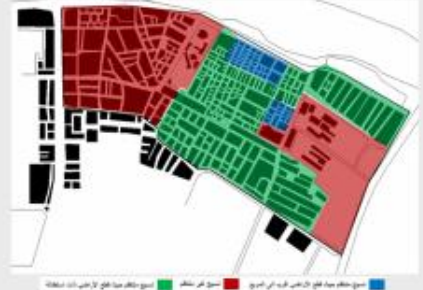


نسيج شريطي



نسيج متضام





نوع النسيج السكني (اللون الأحمر) - نوع النسيج التجاري (اللون الأخضر) - نوع النسيج العام (اللون الأزرق)

الفراغات العامة تتمثل في
مساحات - حدائق - تعليمي
الفراغات الشبه عامة تتمثل في
تجاري - خدمات
الفراغات الخاصة تتمثل في
العمران السكنية



الفراغات الخاصة (اللون الأحمر) - الفراغات العامة (اللون الأخضر) - الفراغات شبه عامة (اللون الأزرق)



نظارة عميقة - حوائط عالية



مبنى ذو طابق جديد - مبنى ذو طابق متوسط



نسيج نظيف - نسيج متوسط - نسيج شريطي

1- التشكيل الطبيعي :
1- تطل المنطقة المدروسة على فرع نهر النيل وذلك أدى إلى تكوين التواريس الطبيعية الممتدة على كورنيش النهر.

2- حدود الأراضي الزراعية .



فرع نهر النيل - الأراضي الزراعية - منطقة الغزل



الأرض من الطابق 4-4 - الأرض من الطابق 3-3 - الأرض من الطابق 2-2 - الأرض من الطابق 1-1



شبكة الطرق



المساحات الأرضية الممتدة على طول 3-3 - كتلة الأرض الممتدة على طول 3-3 - كتلة الأرض الممتدة على طول 3-3



جامع (اللون الأزرق) - قسم HABRAKEN (اللون الأصفر) - مدرسة الفتح (اللون الأخضر)



5- القطاع :

نجد أن اللون السائد في المنطقة المدروسة هو اللون البرتقالي بدرجاته في المباني السكنية والتجارية والحكومية



rectangular lots



cell B square lots



irregular lots pasarsaric photo



cell D rectangular tissue



cell C square block



cell C square block



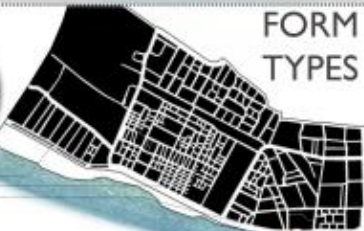
Irregular tissue



Regular tissue square lands



Regular tissue rectangular lands



FORM TYPES



CELL A buildings surrounded with 3 streets



CELL B buildings surrounded with 4 streets



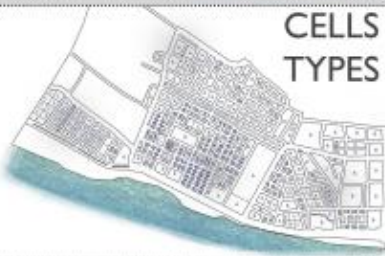
CELL C corner buildings surrounded with 2 streets



CELL D buildings between 2 streets



CELL E buildings overlooking 1 street



CELLS TYPES



Irregular streets



Regular streets square lands



Regular streets rectangular lands



STREET SYSTEM



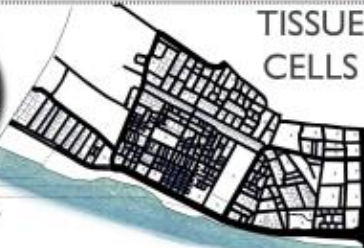
CELLS IN IRREGULAR TISSUE



CELLS IN REGULAR TISSUE (square)



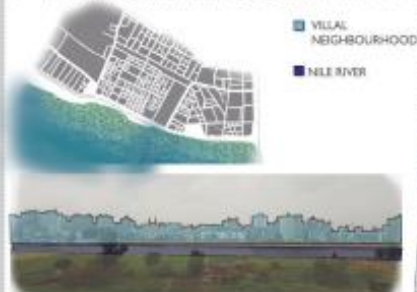
CELLS IN REGULAR TISSUE (rectangular)



TISSUE CELLS

URBAN FORM : VILLAL NEIGHBOURHOOD

1 NATURAL CONTEXT



2 STREET SYSTEM



ARCHITECTURAL CHARACTER

1- DETAILS



2- COLOR



3- RYTHM

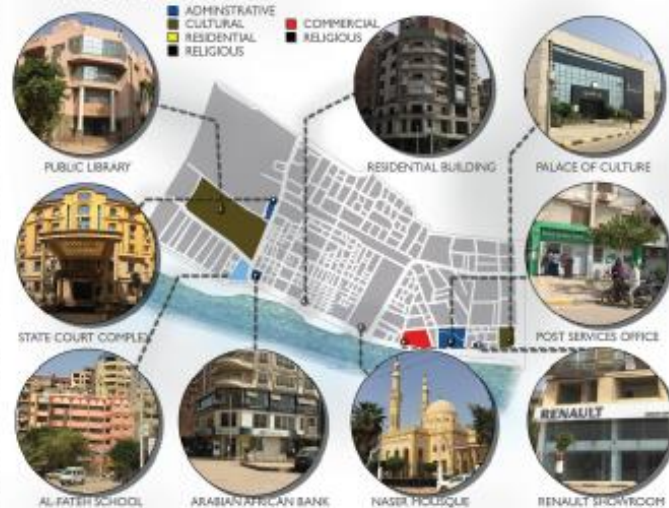


4-MATERIAL AND TEXTURE



3 BUILDING SYSTEM

A- BUILDINGS TYPES



B- BUILDINGS CHARACTER



4 PLOT SYSTEM

A- STREET DIMENSIONS



C- THE PLOT SYSTEM OF THE NEIGHBOURHOOD



REFERENCES :

THE CASE OF URBAN FORM AND TISSUE -

DR. SAIED ALTONY

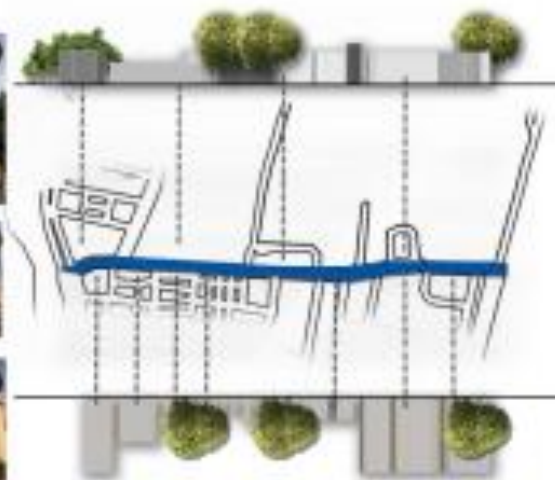
DR. MONA YEHIA LECTURE

PHOTOS BY STUDENT | RANA AGEL -

RAWAN HAYTHAM - RANA EMAD

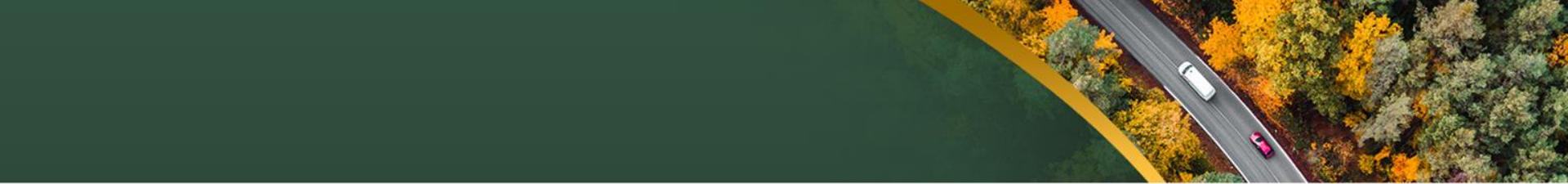
5 URBAN CHARACTER

A- STREET FORM



B- URBAN SPACES IN THE NEIGHBOURHOOD





Architectural Styles

This infographic illustrates architectural styles with circular callouts pointing to specific features on a building facade. The callouts include:

- Square arcade
- Distinct column types.
- Smaller Islamic arcs on 2nd floor.
- Red marble column shaft.
- Column crown ornaments.
- Neo-Moorish column.
- Islamic ornaments between columns.
- Complex arcs at the end of each facade.
- Pointed arcs make up most of the arcade.
- Wider arcs on adjacent buildings.

Two specific buildings are identified at the top right:

- El-Ethabeya Palace
- Baron Empire Palace

REFERENCES

An aerial photograph showing a two-lane road curving through a landscape. The road is paved and has a white line on the left side. A white car is driving in the left lane, and a red car is driving in the right lane. The surrounding area is filled with trees, some of which have yellow and orange leaves, suggesting autumn. The top left corner of the slide is a dark green gradient.

The references to multiple sources are text & figures
(sketches, drawings, pictures, photos,..etc.)

**ALL THE RIGHTS BELONG TO ORIGINAL
AUTHORS**

ASSIGNMENT #6....

Assignment #6

An aerial photograph showing a two-lane road with a white car and a red car. The road is bordered by a yellow curb on the left and a dense line of trees with autumn foliage on the right. The background is a dark green field.

Each group should study the urban fabric of a new neighborhood in Egypt.

Assignment #6 submission is next week in a **Hard-copy (A2) format as well as Soft copy.**



ANY QUESTIONS???

THANK YOU...