



BENHA UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF ARCHITECTURE

AE1441-URBAN DESIGN(2)-LECTURE04

النسيج العمراني للمناطق السكنية

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SPRING 2020



النسيج العمراني للمناطق السكنية؟؟؟



المحتويات

1. المقدمة
2. النسيج العمراني
3. شبكة الطرق ومسارات الحركة
4. البحث الثاني





المقدمة

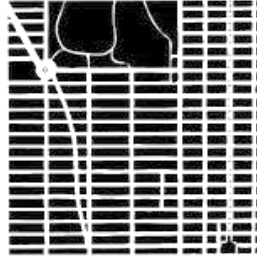
النسيج العمراني:



Amsterdam



Cairo



Manhattan



Los Angeles



My House - East Atlanta



New Delhi



Savannah



Tokyo



Venice



هو لغة مسارات وشبكات الحركة ومعاييرها
والفراغات البنينة في نطاق ما.



أي علاقة الكتل بالفراغات

2

النسيج العمراني

الانماط المختلفة للنسيج العمراني – مفردات النسيج العمراني

الأنماط المختلفة للنسيج العمراني:

يختلف تصنيف الأنسجة العمرانية المستخدمة في التجمعات السكنية طبقا لعدة عوامل وهي:

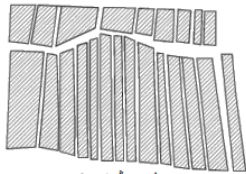
2- تصنيف الأنسجة العمرانية تبعا لمستوى التحضر



نسيج بدوي



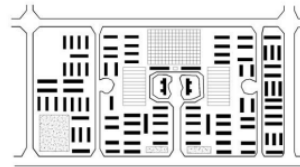
نسيج ريفي



نسيج شبه حضري



نسيج حضري تقليدي



نسيج حضري حديث

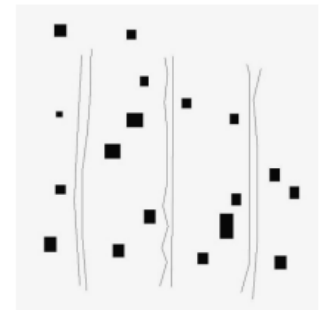
1- تصنيف الأنسجة العمرانية تبعا للعلاقة بين الكتل والفراغات



نسيج متضام

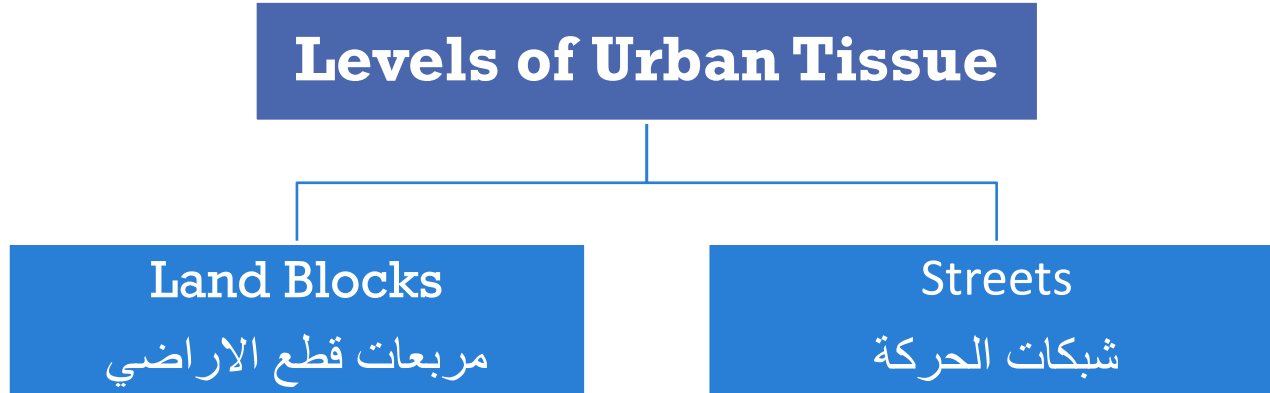


نسيج متداخل أو ممتد



نسيج مبعثر

تصنيف الأنسجة العمرانية تبعا للعلاقة بين الكتل والفراغات

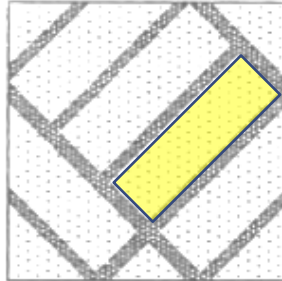
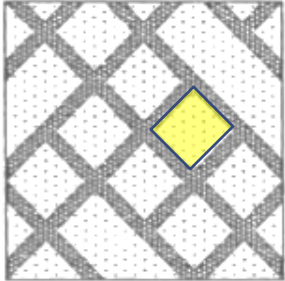


تصنيف الأنسجة العمرانية تبعا لشبكة مسارات الحركة:

Pattern of Street Network

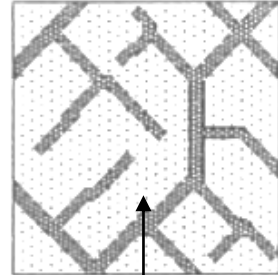
Regular Tissue

- Regular Streets.
- It has a clear direction.



Irregular Tissue

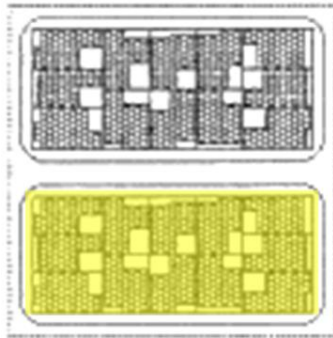
- Irregular Streets.
- It has no clear direction.
- Its main streets are branched into main and secondary paths.
- In old districts.



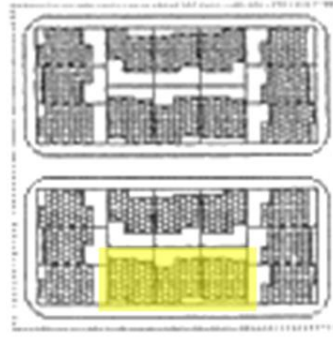
تصنيف الأنسجة العمرانية تبعا لمربعات قطع الاراضي:

ACCORDING TO LAND LOCKS

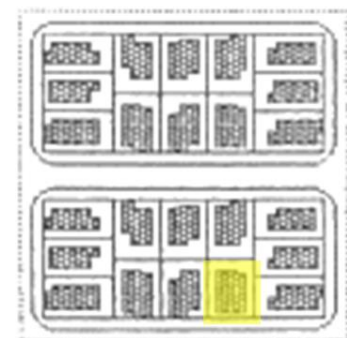
COMPACT TISSUE



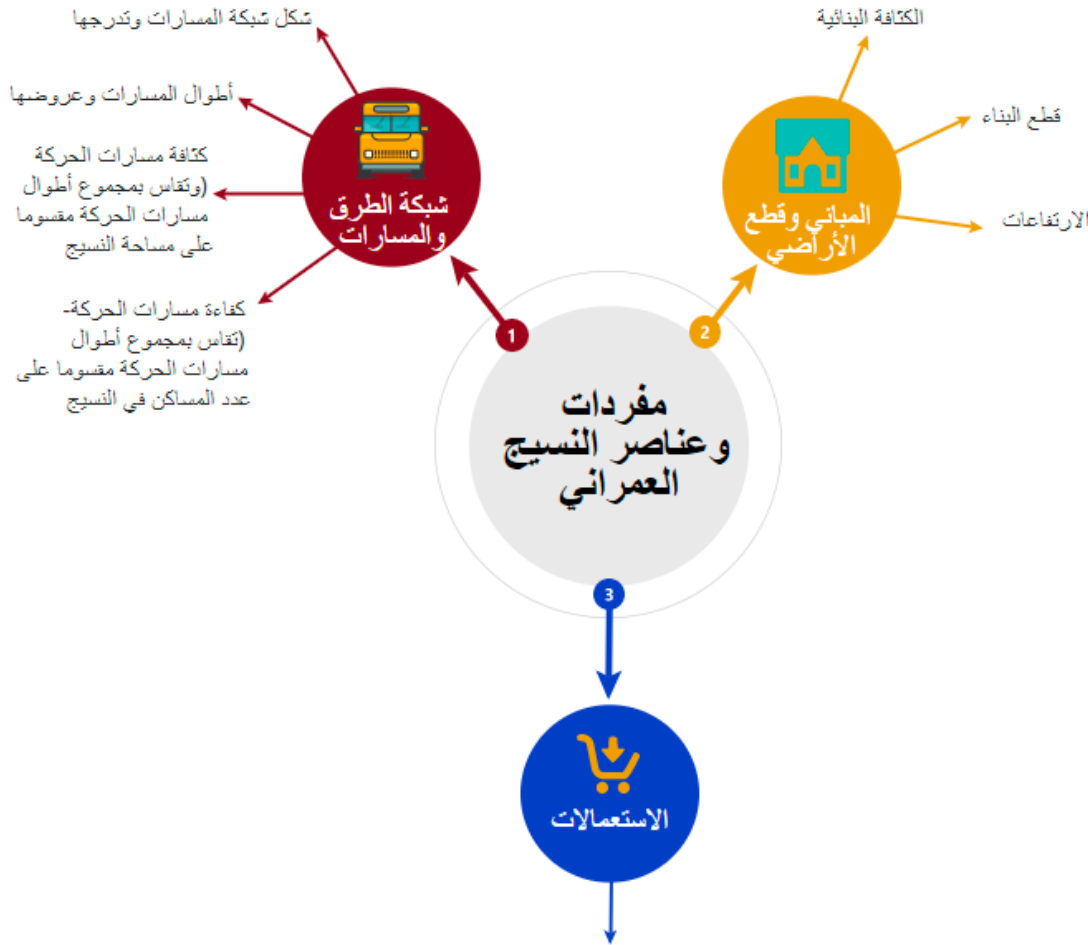
LINEAR TISSUE



POINT TISSUE



مفردات وعناصر النسيج العمراني:

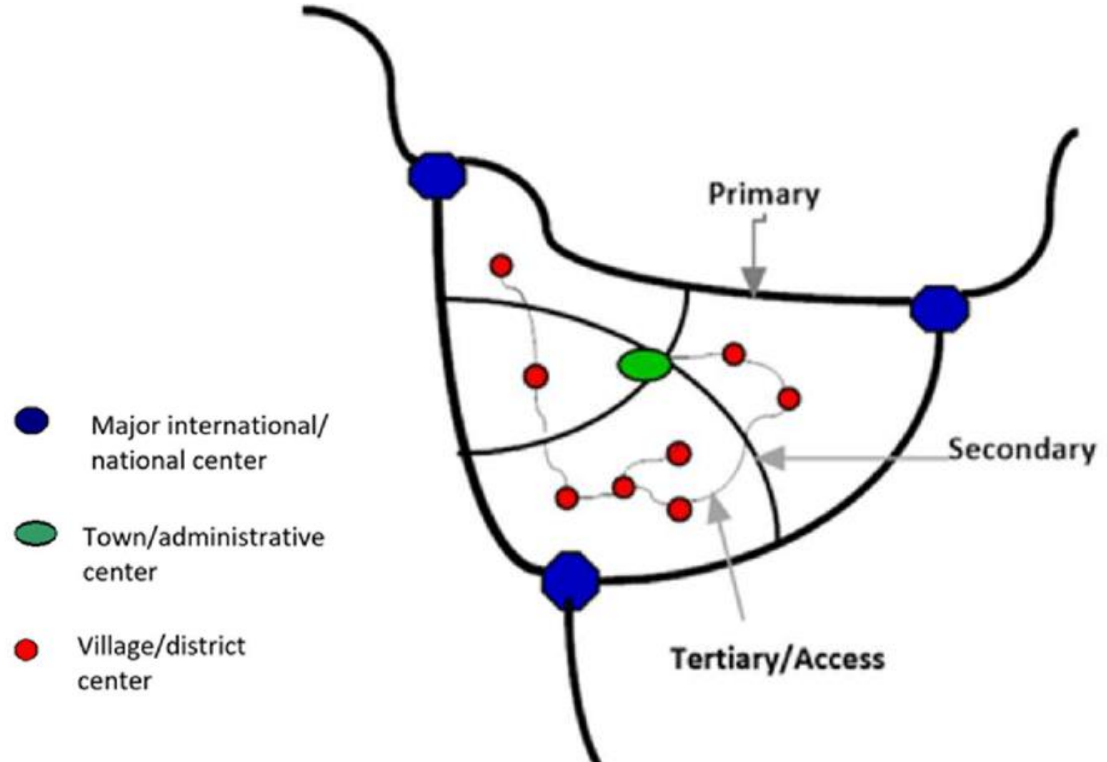


تشمل الوظائف المؤداه داخل النسيج والنسب بين المساحات التي تشغلها الاستعمالات المختلفة

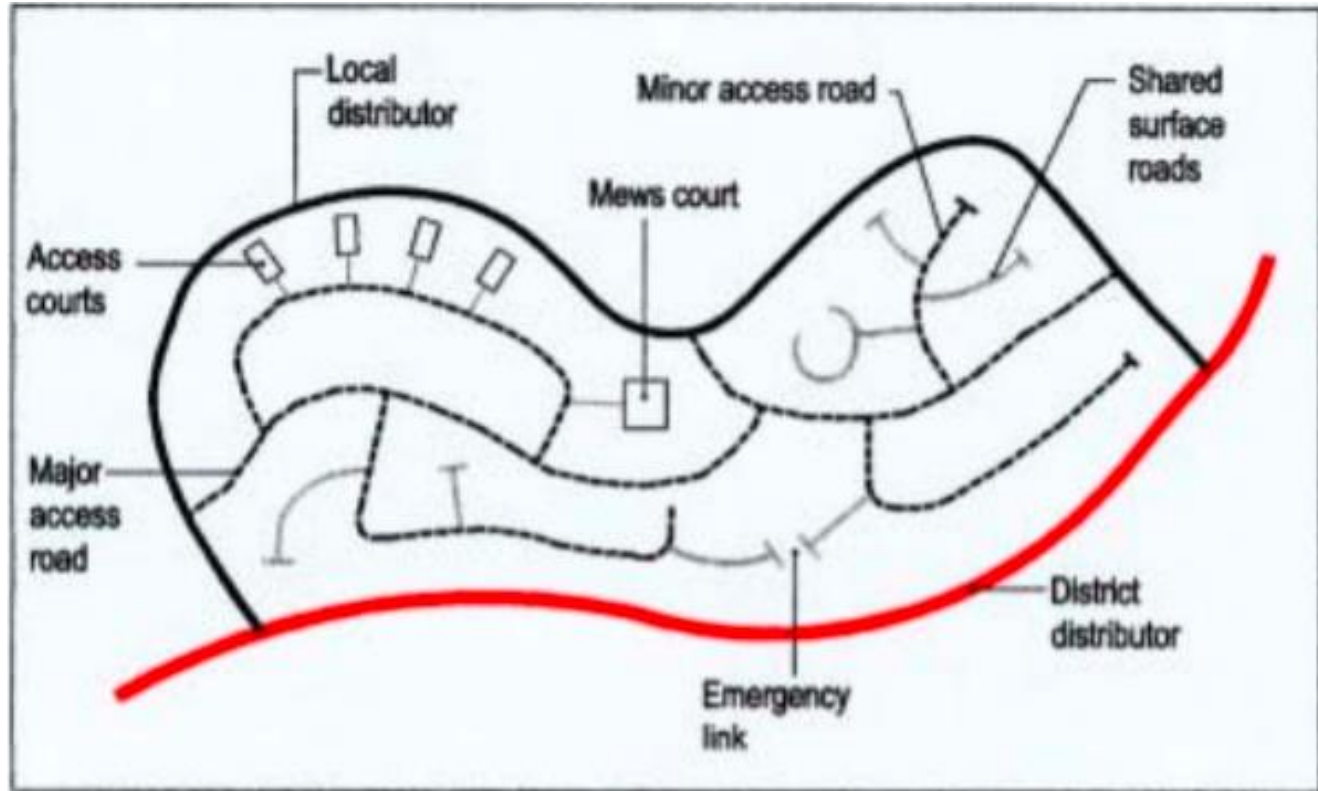
شبكة الطرق وممرات المشاه:

ندرج شبكة الطرق – عروض مسارات الحركة المختلفة - مواقف إنتظار السيارات ومقاسمتها وانواعها - عروض ممرات المشاه - ممرات المشاه داخل المناطق السكنية والاوزاع الصحيحة لها - ممرات المشاه وعلاقتها بالفراغ وما حوله – مسارات الدرجات - أسس التصميم

❖ Typical Road Hierarchy Diagram



❖ Schematic hierarchy of urban roads



❖ Schematic hierarchy of urban roads: **Local Distributor Roads**

Linking residential access roads within the primary residential districts of a town

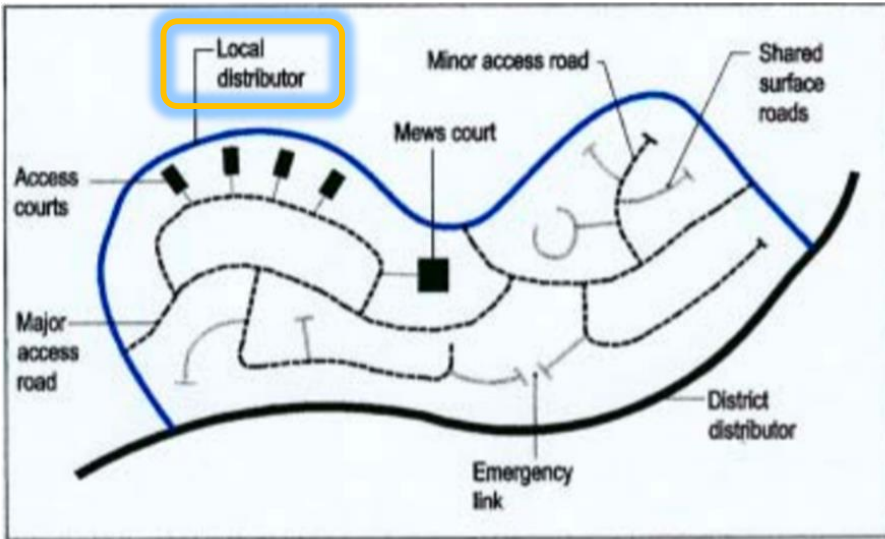


Diagram showing a Local distributor road with scope for an avenue of tree planting, cycle way and footway combined.



Local Distributer







District Distributer



Dr. Mona Y. Shedid

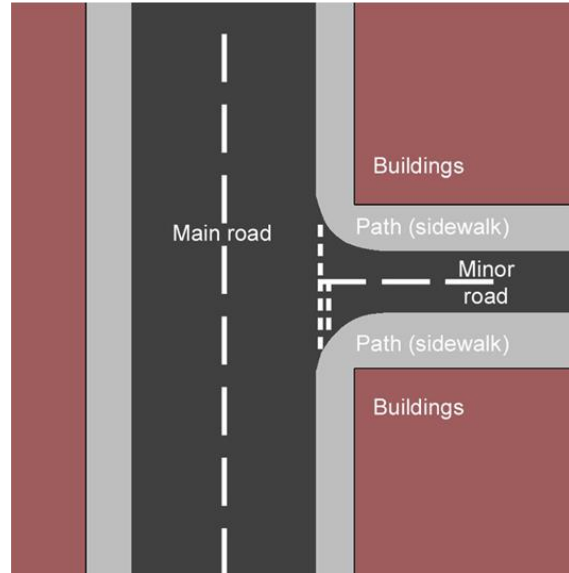
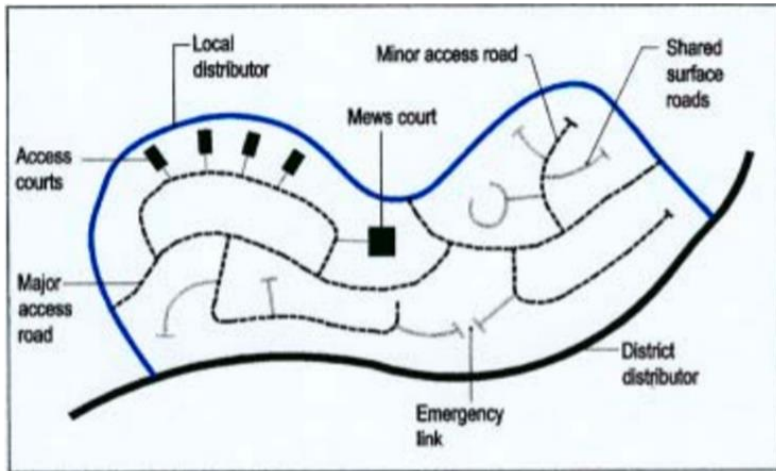


-  Primary distributors
-  District distributors
-  Local distributors
-  Environmental area boundaries



❖ Schematic hierarchy of urban roads: **Residential Access Roads**

These are roads linking Shared Surface Roads, dwellings and parking areas to the distributor road network.
The different categories are: Major and Minor access roads.



❖ Schematic hierarchy of urban roads: **Major Access Roads**

1. Gives direct vehicle and pedestrian access to dwellings and often links several residential areas to a local distributor road.
2. Provides an opportunity for boulevard or avenue planting.

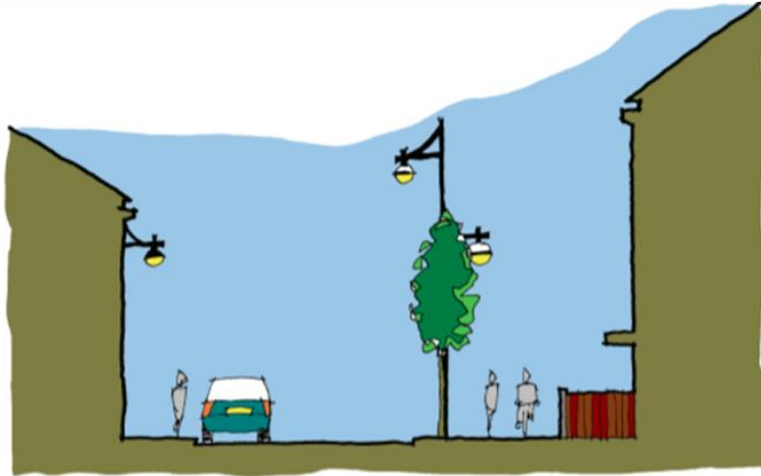
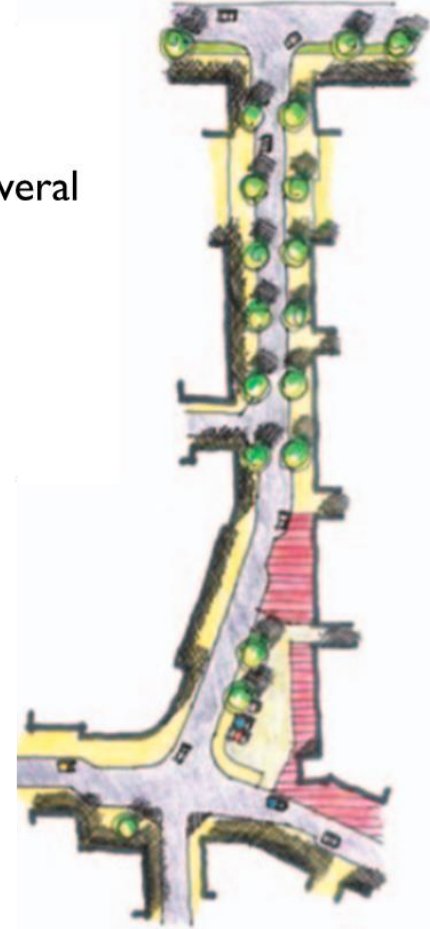
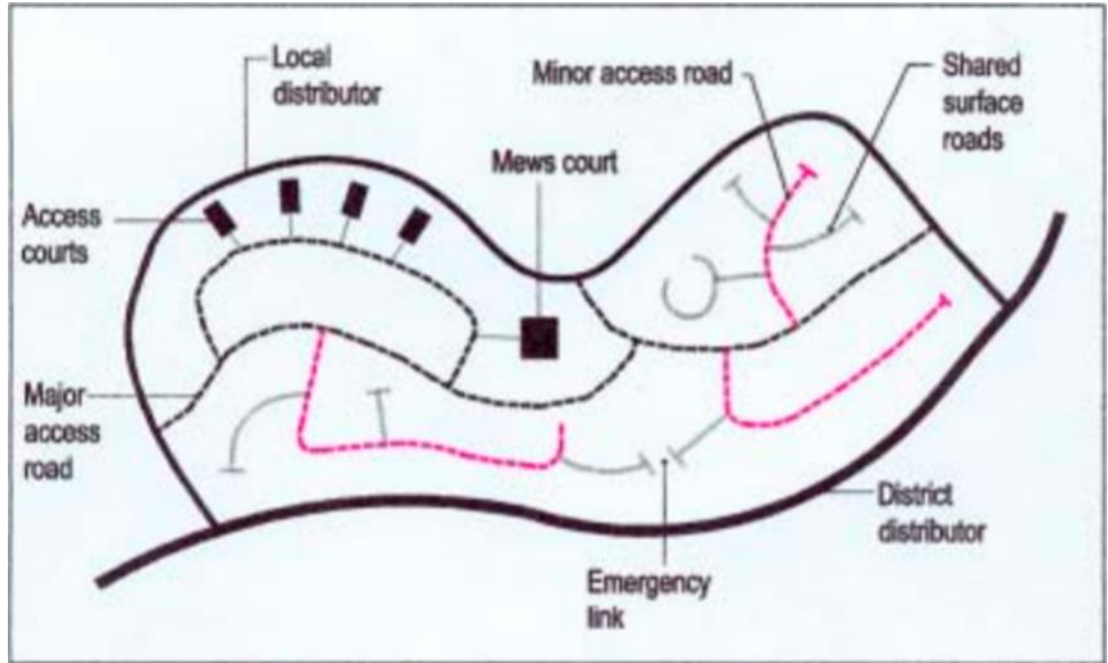


Diagram showing a section through a major access road with widened footway with cycle way on one side.



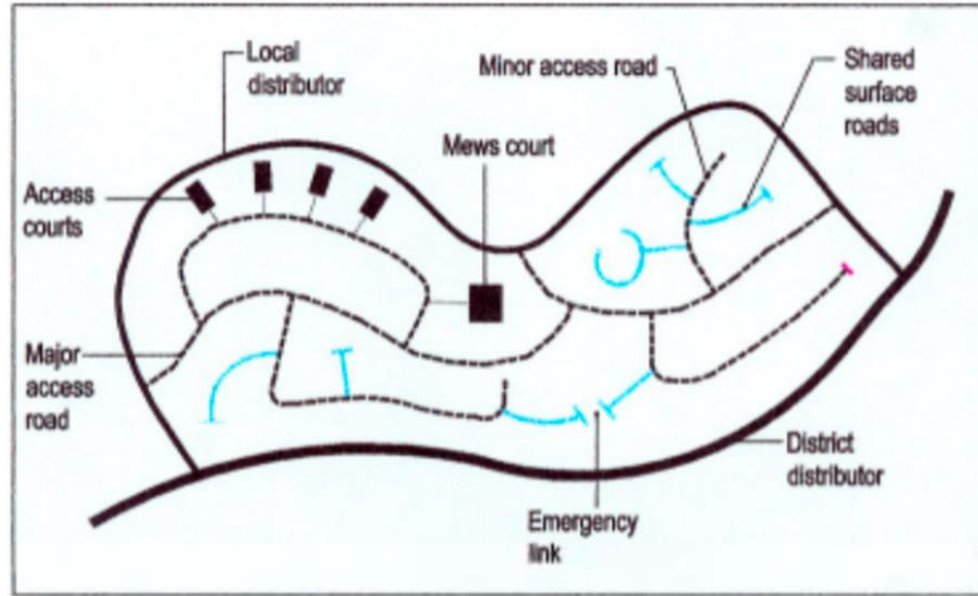
❖ Schematic hierarchy of urban roads: **Minor Access Roads**

Are narrow roads connected to major roads.

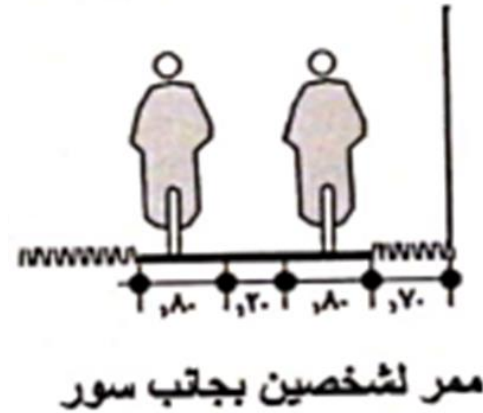
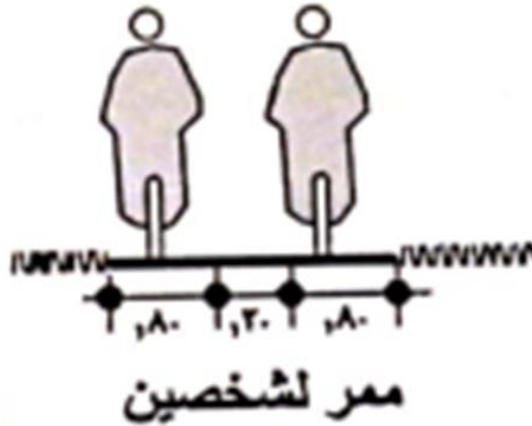
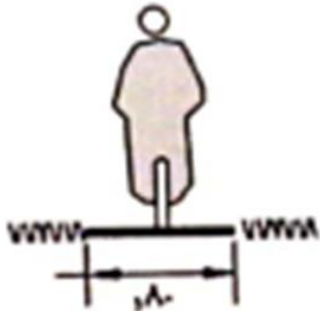
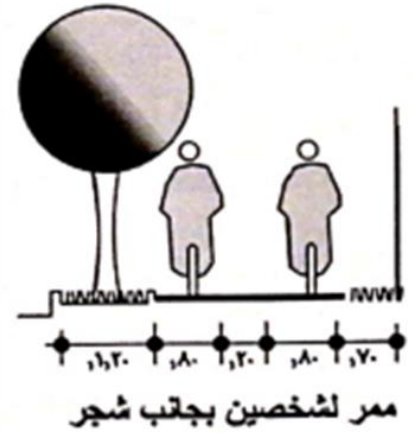


❖ Schematic hierarchy of urban roads: **Shared Surface Roads**

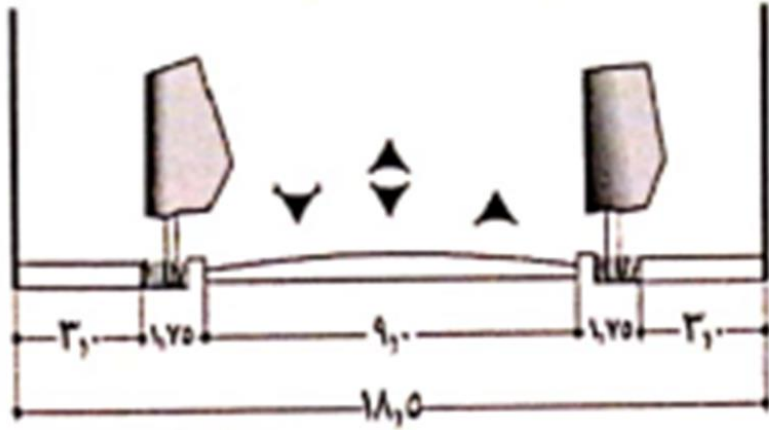
The primary purpose of these roads is to provide direct access to dwellings, they are engineered with low traffic speeds and help create a sense of community.



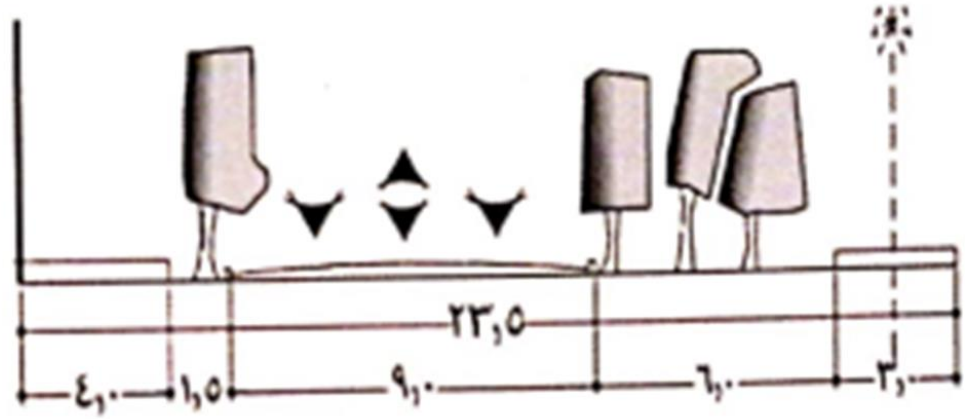
❖ Dimension of Roads



❖ Dimension of Roads

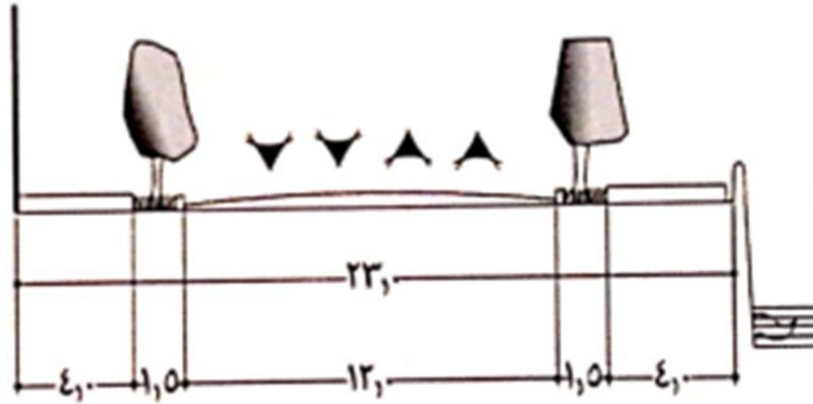


طريق 3 حارات

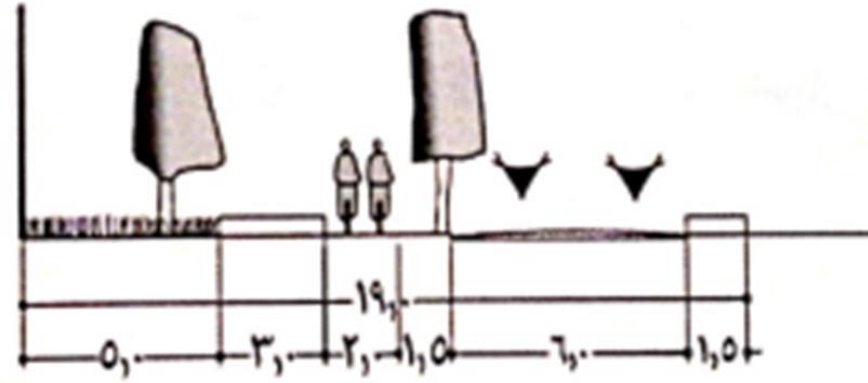


طريق 3 حارات ومنطقة خضراء

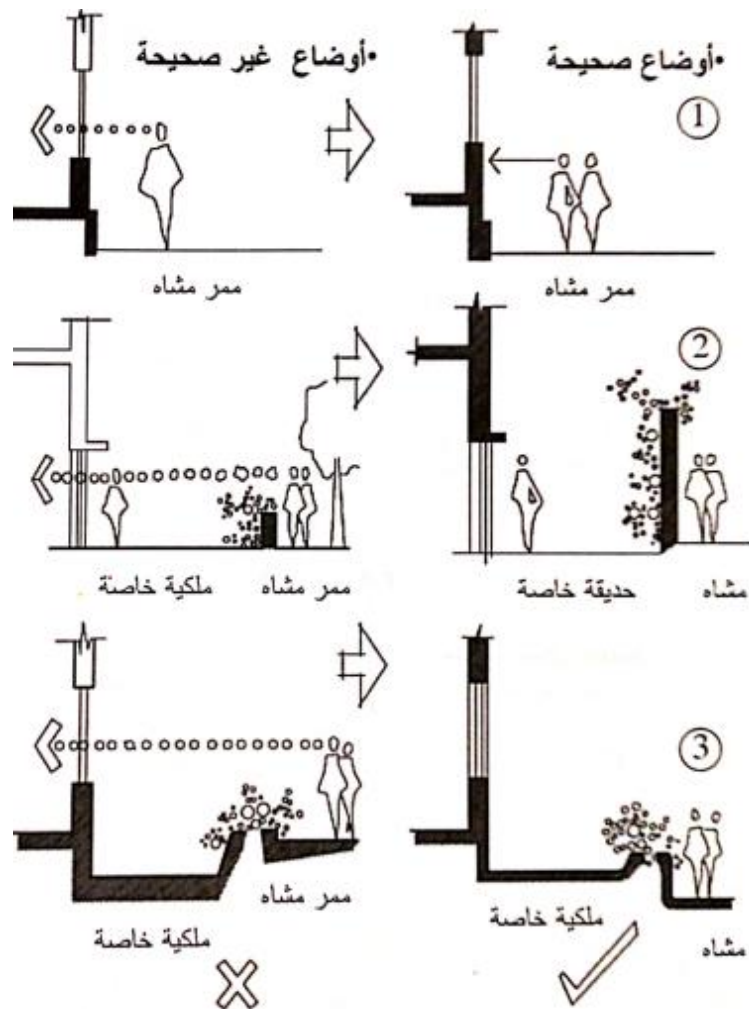
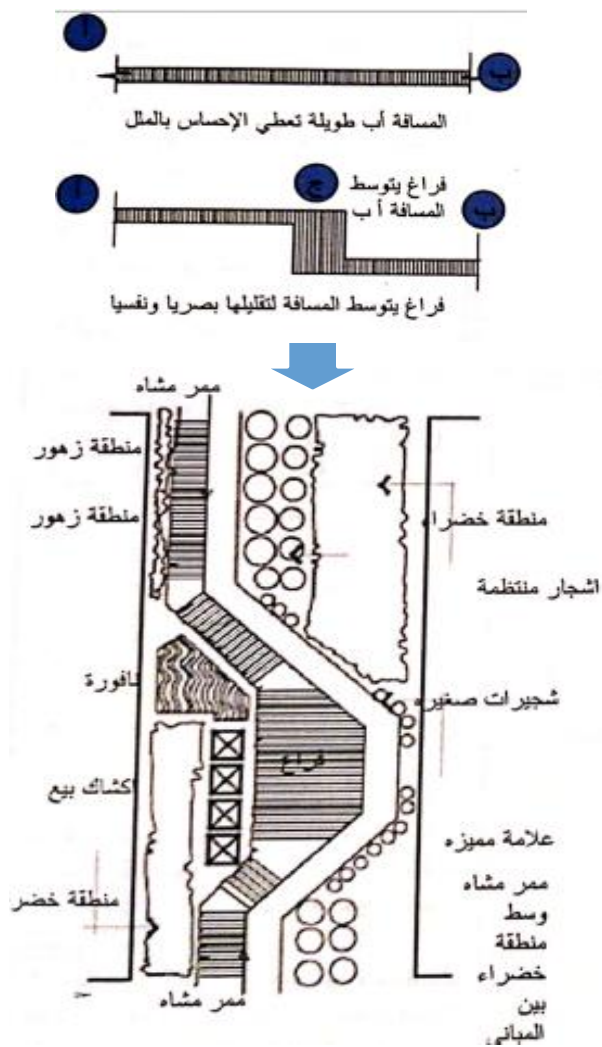
❖ Dimension of Roads



طريق 4 حارات على شاطئ



طريق حارتين ومناطق خضراء ومسارات دراجات



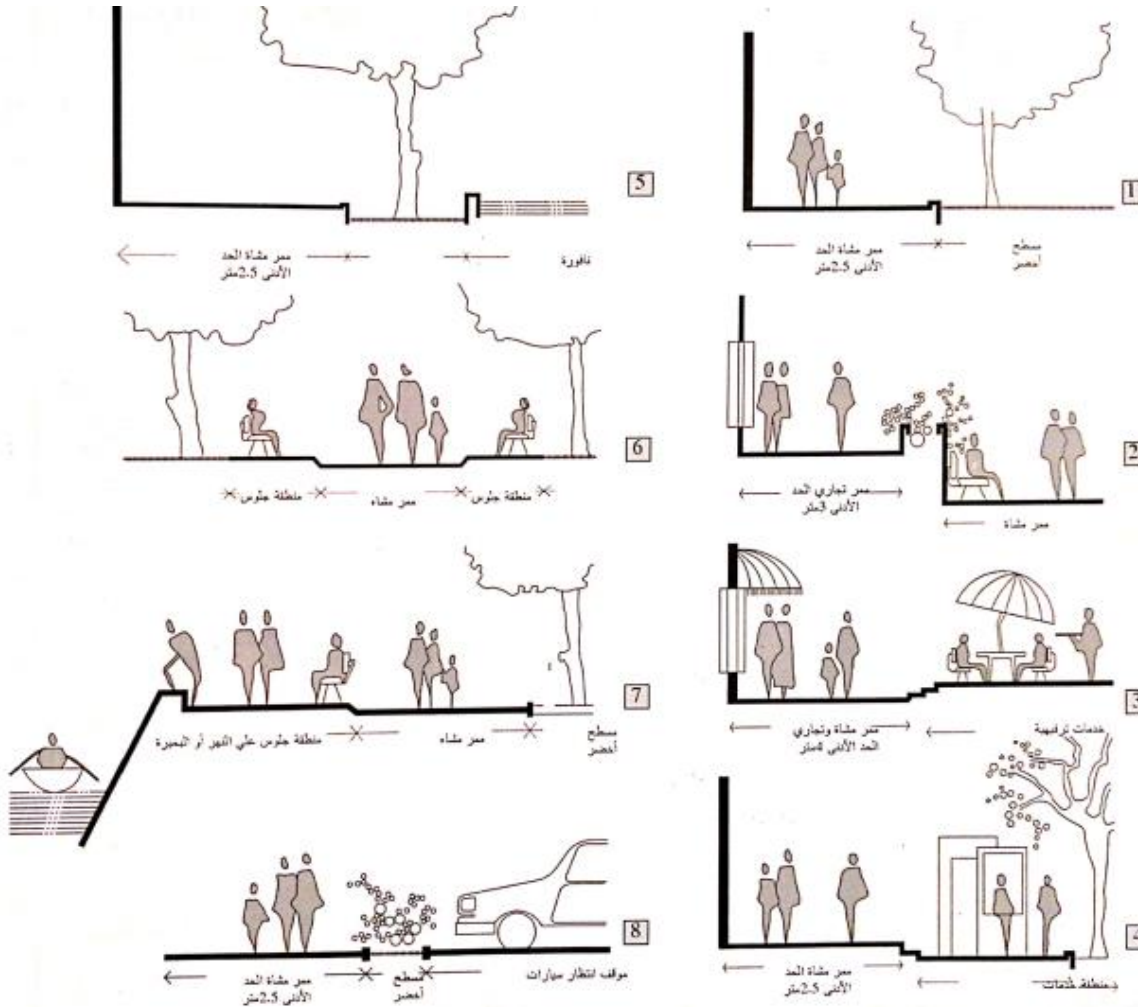
ممرات المشاه داخل المناطق السكنية والاطواع الصحيحة لها:

ممرات المشاه وعلاقتها بالفراغ وما حوله:

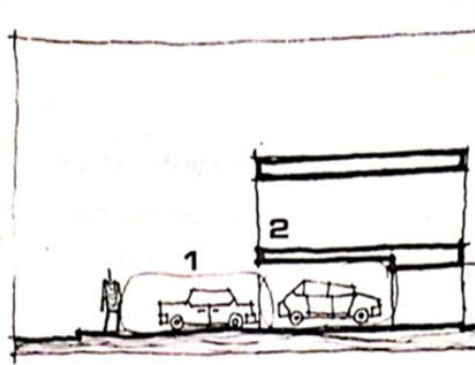
أمثلة لممرات مشاه وسط منطقة خضراء

أمثلة لممرات مشاه وسط منطقة تجارية

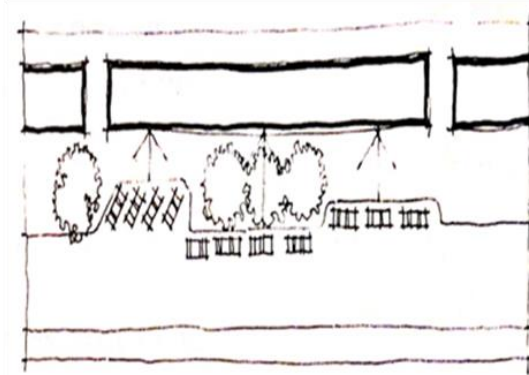
أمثلة لممرات مشاه وسط منطقة ترفيهية



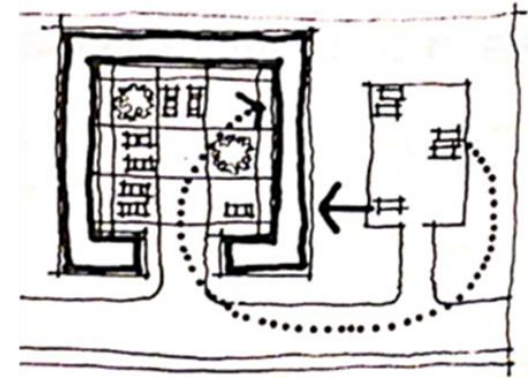
❖ Types of Parking Lots



الإنتظار في الطريق

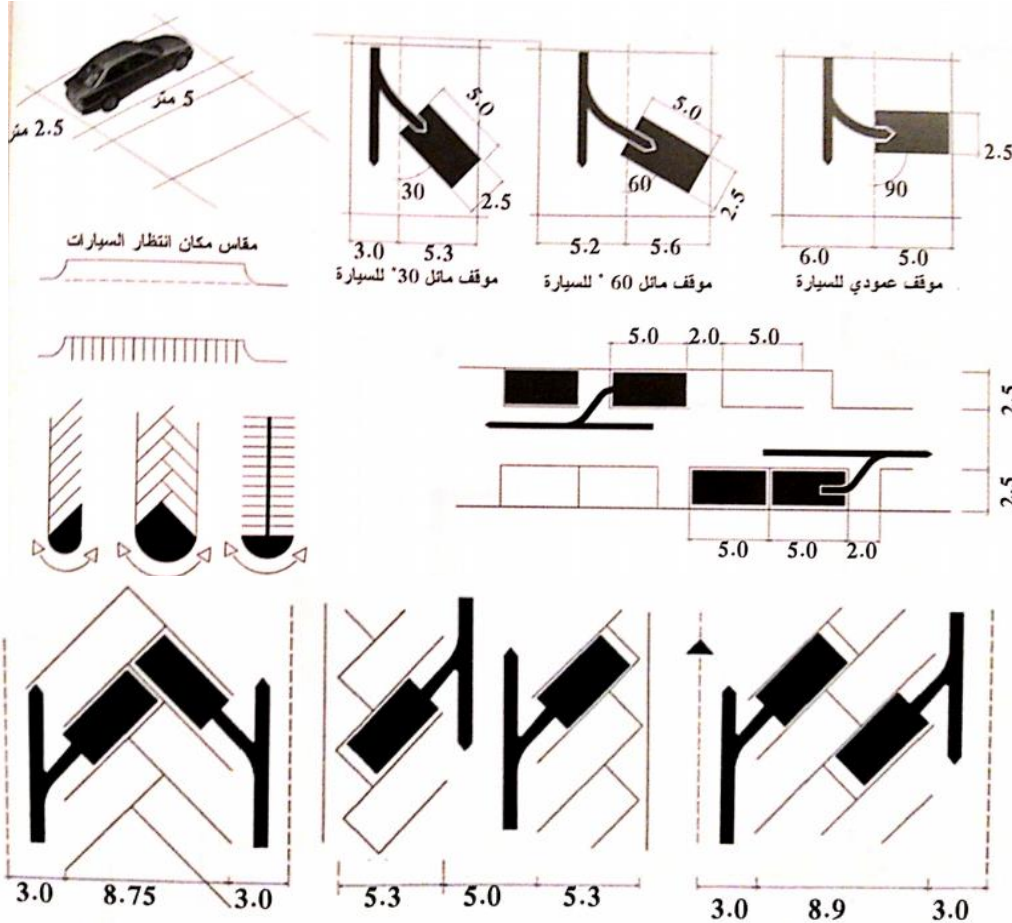


الإنتظار في الطريق



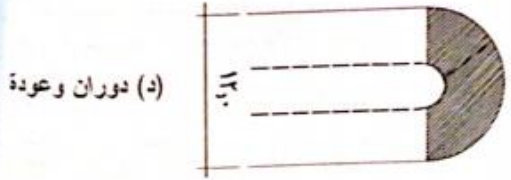
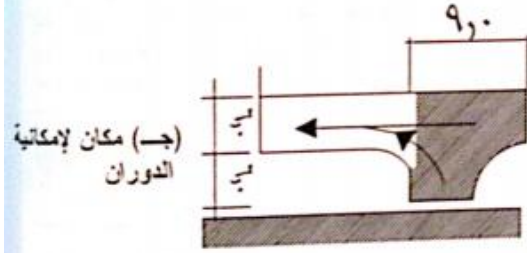
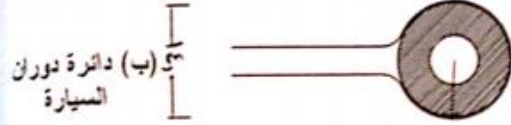
الإنتظار في ساحة الإنتظار

مواقف إنتظار السيارات ومقاساتها وانواعها:



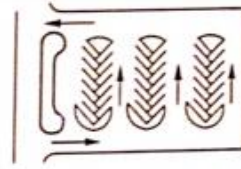
أماكن انتظار السيارات والطرق المختلفة للانتظار من عمودي الى مائل الى موازي الى متداخل

مواقف إنتظار السيارات ومقاستها وانواعها:

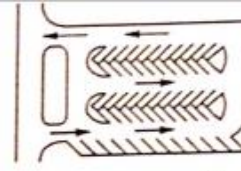


امكانيات نهايات الطرق المغلقة للدوران

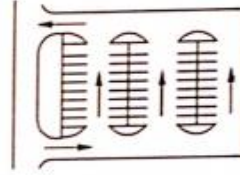
بدائل مختلفة
لمواقف السيارات
في مكان موحد



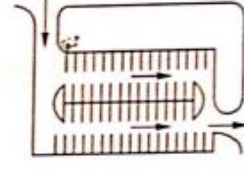
(ب)



(ا)

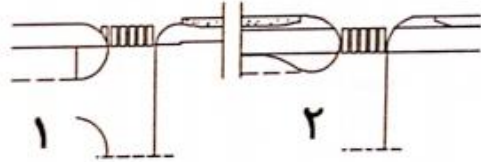


(د)



(ج)

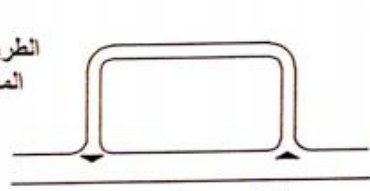
عبور المشاة
لمداخل مواقف
انتظار السيارات



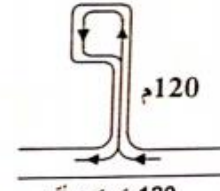
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الطريق ذو النهاية
المغلقة والآخر
دائري



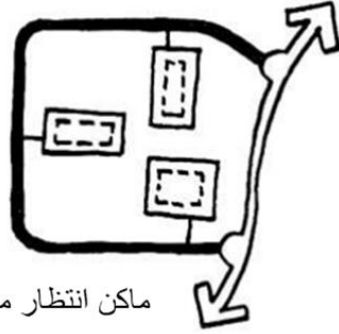
200 متر كحد أقصى LOOP



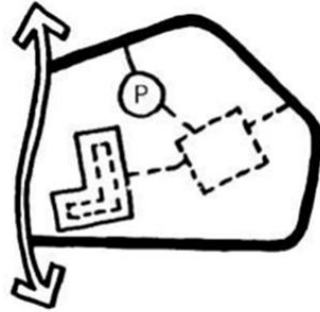
120 م 120 متر كحد أقصى (cul - de - sac)

نماذج من الطرق المختلفة لأماكن انتظار السيارات

❖ Places of Parking Lots

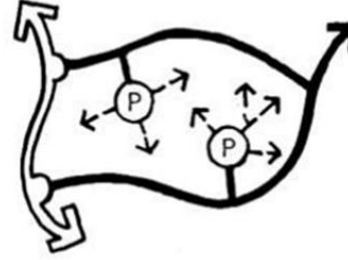


ماكن انتظار مجمعة غير متصلة



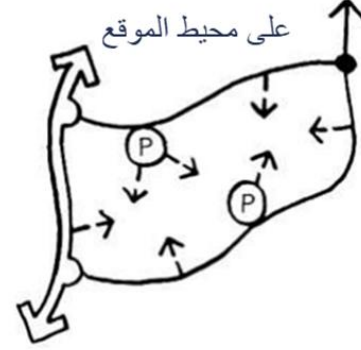
اندماج الطرق المغلقة مع
أماكن انتظار مجمعة مع
طرق المشاة

طرق وصول قصيرة تنتهي
بأماكن انتظار السيارات

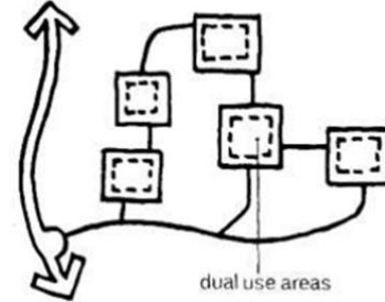


- يسمح بتقصير مسافة المشي إلى
الوحدات السكنية في حين يبقى
الموقع خالي من أخطار
السيارات
- تزويد الموقع بطرق منفصلة
لوصول سيارات الطوارئ

على محيط الموقع



أماكن انتظار مجمعة تتصل مع
بعضها لتكون شبكة



dual use areas

معدلات إنتظار السيارات:

عدد أماكن الانتظار (وحدة سيارة خاصة مكافئة)	نوع الأشغال
1.0 مكان انتظار لوحدة لا تزيد عن 200 م ²	سكني
1.25 مكان لكل وحدة من 200م ² - 250م ²	
1.50 مكان لكل وحدة من 250 م ² - 300م ²	
2.00 مكان لكل وحدة من أكبر من 300م ²	

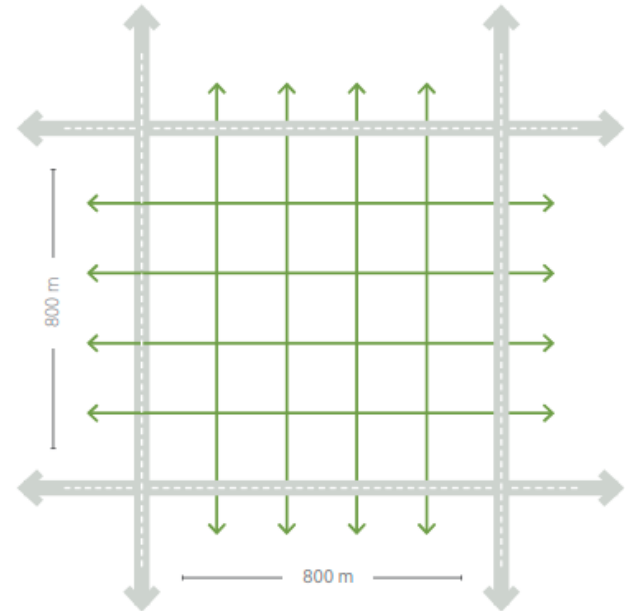
Transport Structure:

Enabling people to get around without a car requires a street network that supports:

- 1- Transport
- 2- Suitable size
- 3- Density of population
- 4- Mixture of land uses



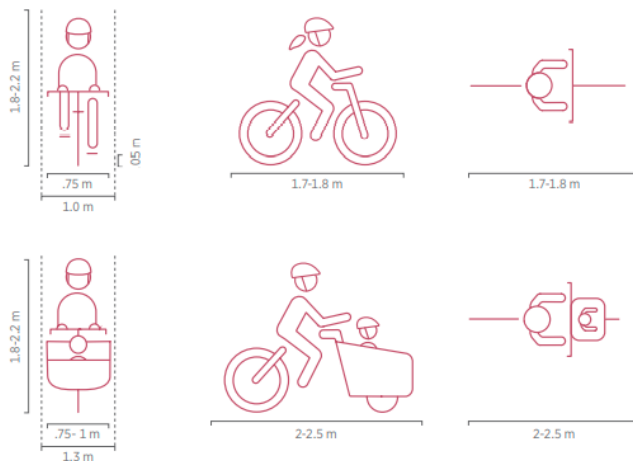
MAJOR STREETS & LOCAL NETWORK



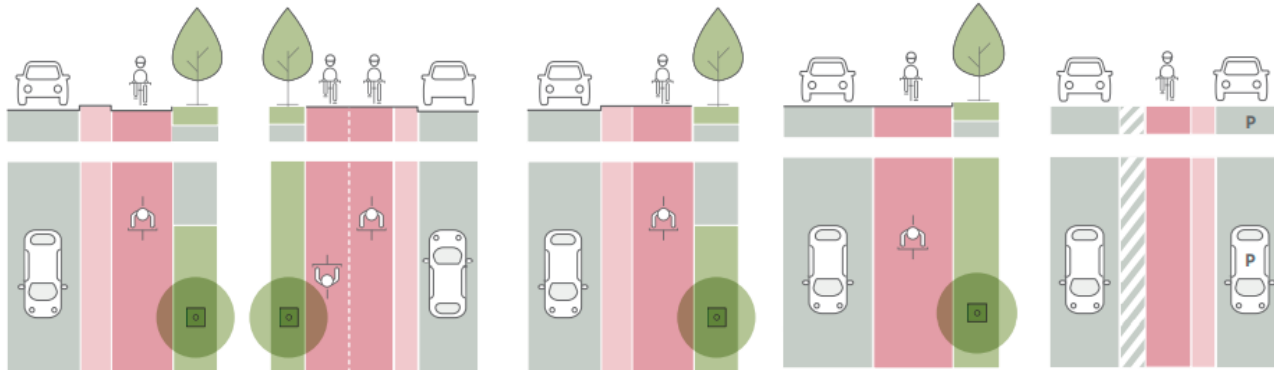
The integrated planning and location of appropriate land uses for good access to the public transport network can further enhance this.

Cycle Lane:

PROTECTED CYCLE PATHS



Minimum envelope for bike users is 1.0 m wide, allowing for some weaving for stability, especially uphill.



Separated Cycle Path

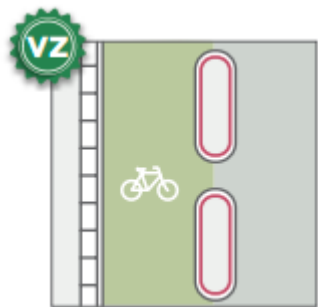
Bi-directional Cycle Path

Raised Cycle Path

Conventional Cycle Lane

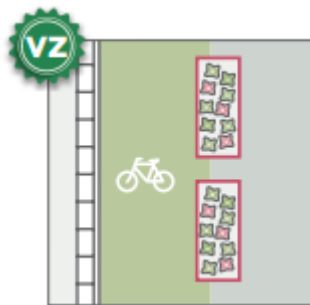
Buffered Cycle Lane

Cycle Lane: ELEMENTS OF CYCLE PATHS



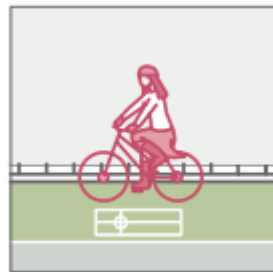
CONCRETE DIVIDER

Concrete dividers can occupy the buffer space to offer a significant form of physical separation.



PLANTED DIVIDER

Vertical elements provide additional physical protection from traffic as well as visual distinction.



BICYCLE DETECTION

Sensors can be embedded within the asphalt to detect people on bicycles and trigger a green signal phase.

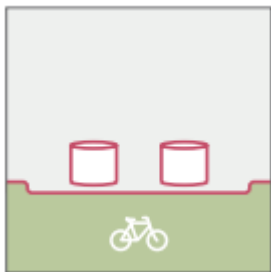


SIGNAGE & WAYFINDING

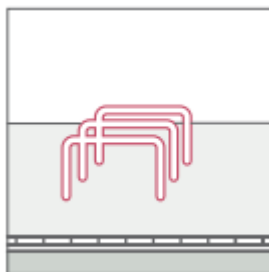
They should always be posted at decision points, and must include information, including distance and/or cycling time, on the next destinations along a route.



CYCLE SIGNALS



TRAFFIC DIVERTERS



TRAFFIC RACK



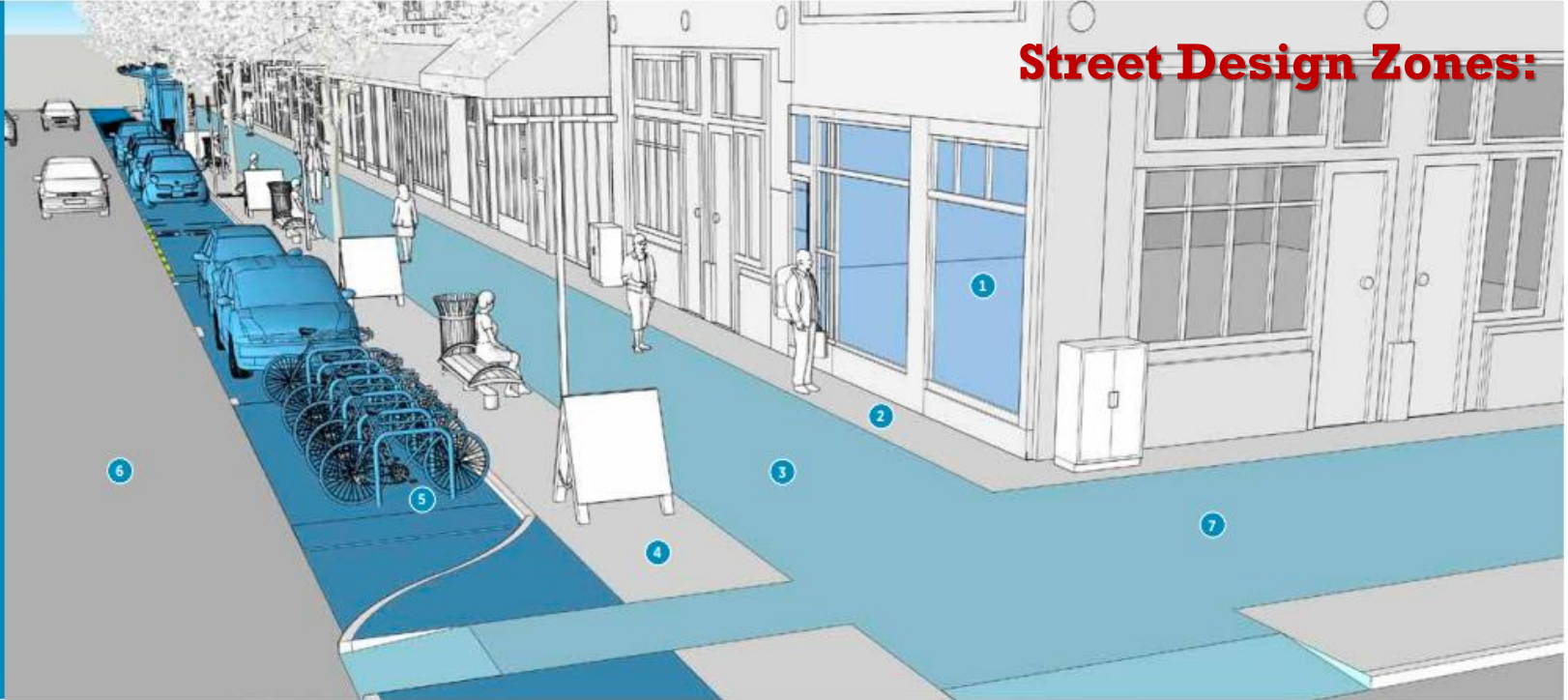
CYCLE LANES AT PUBLIC TRANSPORT STOPS

Street Design Zones:

Different zones can be identified across the road reserve in high-density urban areas. From the building to the travelled way, they include:

- Adjacent lands
- Frontage zone
- Pedestrian clear path
- Street furniture zone
- Ancillary zone
- Carriageway

The following zones are considered when setting out a street cross section.



1 ADJACENT LANDS

The adjacent lands often contain active land uses, including places to eat and drink and ground-floor retail. The adjacent lands host the types of active land use that draws people to the street, and also serves as the point of origin for many pedestrians using the footpath.

2 FRONTAGE ZONE

The frontage zone is the space adjacent to the building edge where ground-floor uses spill out onto the footpath. It can be an extension of the active land uses found along a street. The frontage zone is where the features found along the edge of a street interact with the street use.

3 PEDESTRIAN THROUGH ROUTE

The pedestrian through route (also referred to as pedestrian through zone) provides a movement zone for pedestrians that is clear of any obstacles, facilitating through access for people walking along a street, regardless of age and abilities. Frequent safe crossings provide continuity for people on foot.

4 STREET FURNITURE ZONE

The street furniture zone is the designated area for a variety of features. It provides space for signs, light and signal poles, street trees, public transport stops, rubbish bins, and any additional underground infrastructure.

5 ANCILLARY ZONE

The ancillary zone sits between the street furniture zone and the carriageway, and offers opportunities to provide temporary pedestrian uses such as kerb build-outs, patios and parklets. Other uses include cycle and car parking, loading zones, taxi stands, pick-up/drop-off zones and public transport stops.

6 CARRIAGEWAY

The carriageway provides space for travelling through the street for vehicles, public transport and for the delivery of goods. In off-peak hours, this space may be partially used for parking and loading. On occasions, access to vehicles might be restricted to provide space for events and festivals.

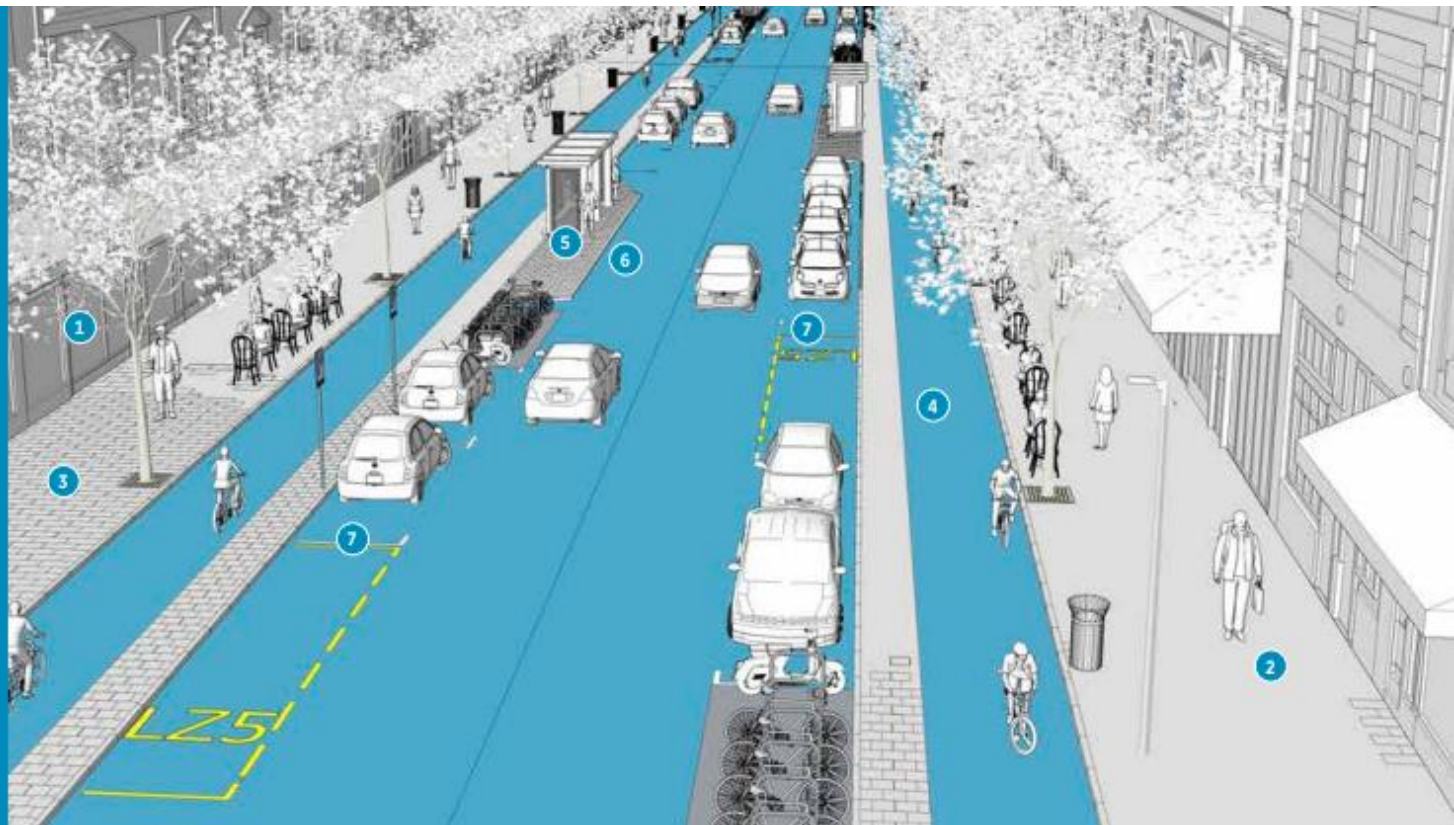
Street Design Zones: MAIN STREET WITH CYCLING PROVISION

Main streets are vibrant public places and major centres of activity in Auckland's town centres. They are destinations, well-known locations and places to meet and enjoy public life. Main streets are also important movement corridors that tend to be found along long, continuous corridors connecting regional destinations.

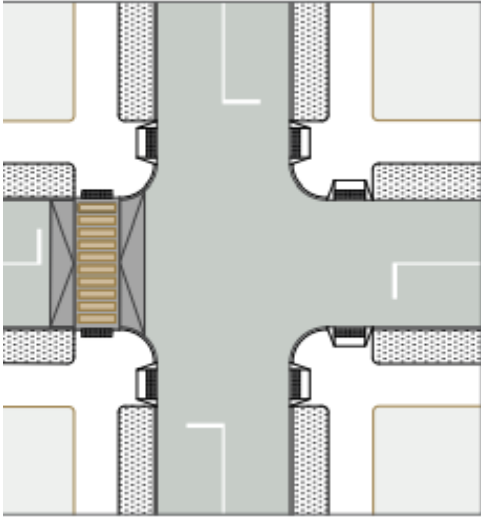
Because main streets are located on logical routes and have a concentration of destinations, cycle facilities should be considered.

Main streets may be no wider than one lane in each direction, which presents challenges for cycleway provision. This street type will also see moderate, slow-moving vehicle traffic (30 km/h), and have a high expectation of kerbside parking.

This street type and its associated function as an urban living space and retail destination creates demand for all transport modes. In turn, its function as a destination is also supported by its walking, cycling, public transport and vehicular access.

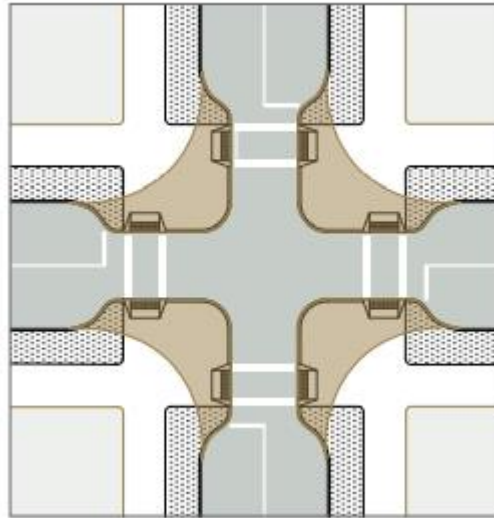


Intersection Elements:



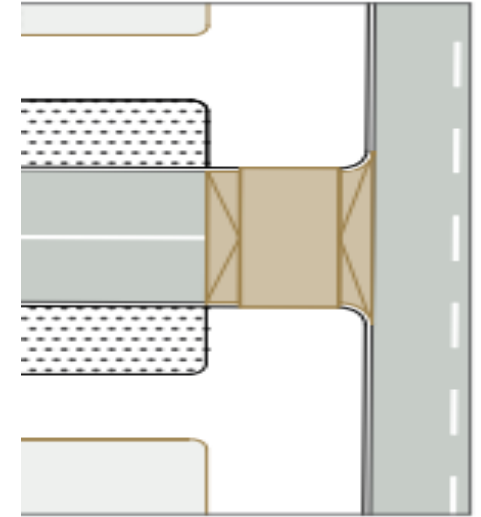
PEDESTRIAN CROSSING

The pedestrian crossing consists of striped roadway markings running from curb to curb. They are not recommended on streets with traffic speed over 50 km/h or where there are more than two lanes in any direction.



KERB EXTENSIONS

They are a commonly used tool to enhance pedestrian crossings, as they shorten the crossing distance and make pedestrians waiting to cross more visible, and allow pedestrians to see oncoming traffic.



RAISED TABLE

This design solution makes it easier for pedestrians to cross and slows vehicle movements. Raised tables are appropriate in town center contexts with high pedestrian volumes and at local or collector street intersections.

System Design: Movement Through Places

System design requires the designer to understand the components of a system and how they interact to result in an outcome.

1



PEOPLE

Looking, deciding & action

People vary, and their actions depend on what they want to do, where they want to go. Design must consider the full range of people and behavior that can be expected.

2



VEHICLES

To carry out their actions

Vehicles are chosen by people (trains, bus, car, bike, scooter, wheelchair,...) We include shoes as “vehicles”, for people on foot.

3



PLACES

That they act within

Places provide opportunities and constrains for what people may do, and how their chosen vehicle may operate.

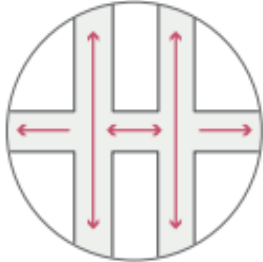
Network Principles:

1



DESIGN FOR
PEOPLE

2



CONNECTIVITY

3



STREET VEGETATION
& GREEN
INFRASTRUCTURE

4



PERSONAL SAFETY &
SECURITY

5



STREETS CAN
CHANGE

6



STREETS ARE MULTI-
MODEL

6



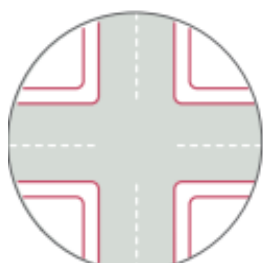
STREETS CARRY
PEOPLE & GOODS

7



HUMAN SCALE

8



QUALITY

9



STREETS INFLUENCE
OUR HEALTH

10



DESIGN FOR
CONTEXT

11



STREETS ARE PUBLIC
SPACES



Learning Moments



البحث الثاني:

البحث الثاني:

- على كل طالب مناقشة الأسس التصميمية لمسارات الحركة داخل المجموعة السكنية، كما يجب إستيفاء جميع النقاط التالية:
- تعريف وشرح لكل عنصر من عناصر أسس تصميم مسارات الحركة داخل المجموعات السكنية.
 - الشرح يكون من الامثلة المختلفة والرسومات التوضيحية.
 - تحليل مسارات الحركة والمشاه داخل احدى المجاورات السكنية بناءا على تلك الأسس التصميمية، وذلك من خلال:

1. نبذه عن المشروع.

2. تدرج مسارات الحركة داخل المجاورة السكنية

3. تحليل الاسس التصميمية على تلك المسارات

4. ذكر النقاط السلبية والايجابية

❖ التسليم الاسبوع القادم على **softcopy (PowerPoint presentation)**

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

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أي أسئلة؟؟؟؟

شكرا....