



ALGERIAN DEMOCRATIC AND POPULAR REPUBLIC
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC RESEARCH



UNIVERSITY BLIDA 01
INSTITIUT OF ARCHITECTURE AND URBANISM

Title Of The Presentation

**« The Preservation Of the Traditionnal Building System In the Saharan
Environnement as Factor of Sustainability »
Case of Study ; Timimoun the Red Oasis.**



Dt ,ARCh. MOURAD MAROC

Expert of Monuments and Protected Sites
Ministry of Culture .Algeria



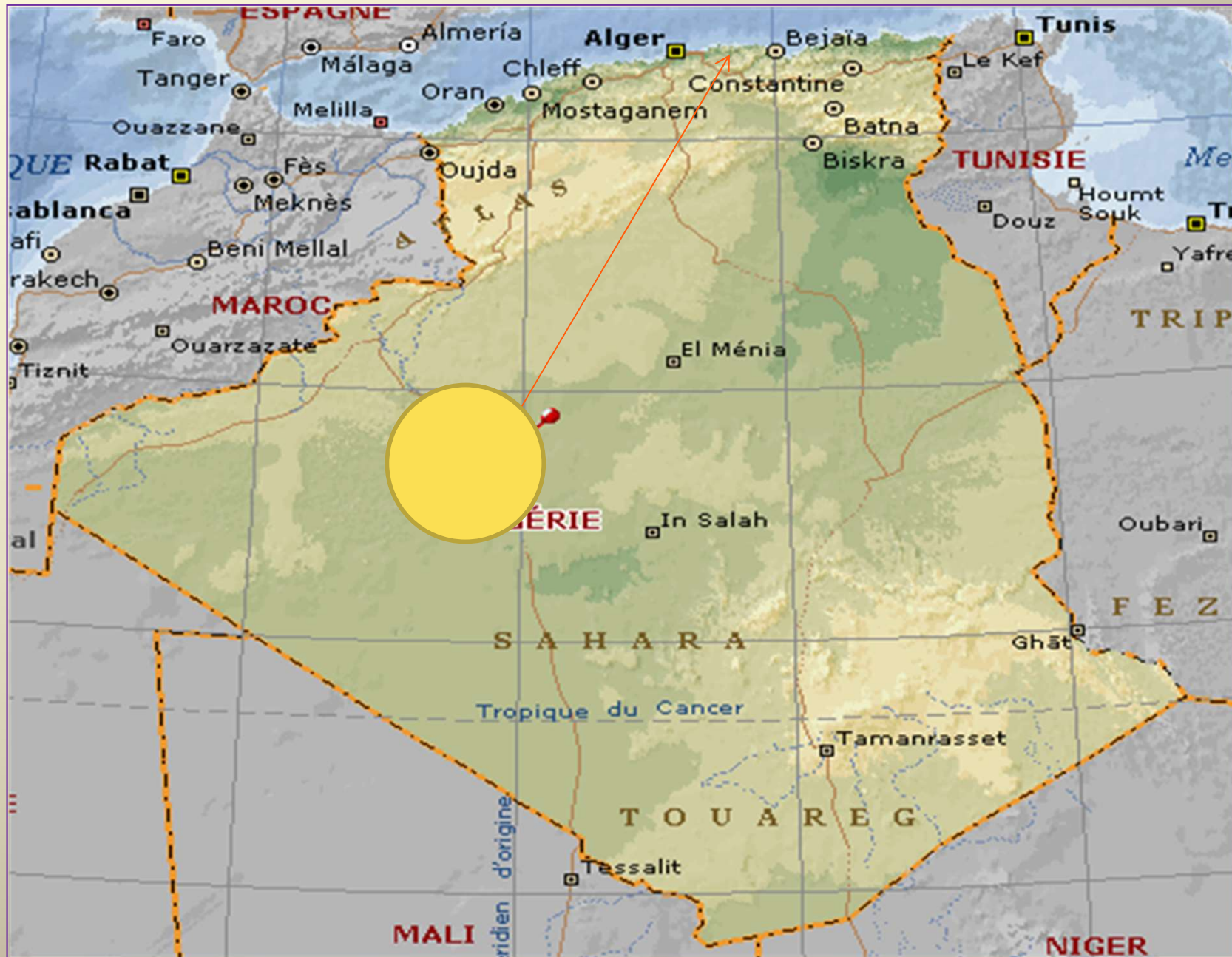
INTERNATIONAL SUMMER SCHOOL
******* Orvieto – Todi / - jully 21-27th, 2024 *******



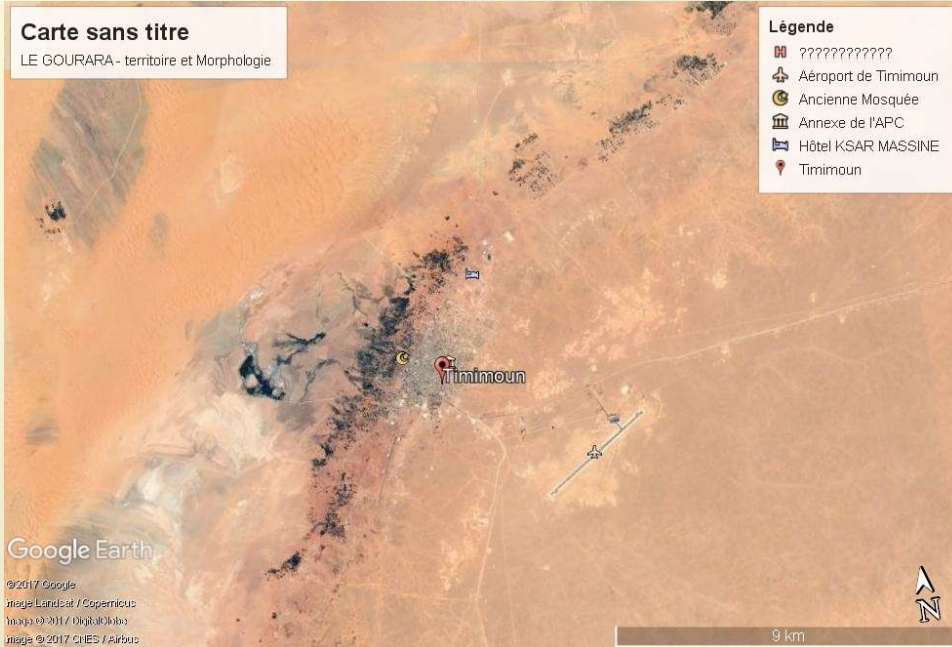
TIMIMIMOUN " the " Red Oasis " Sanctuary of Saharan Architecture in Algeria



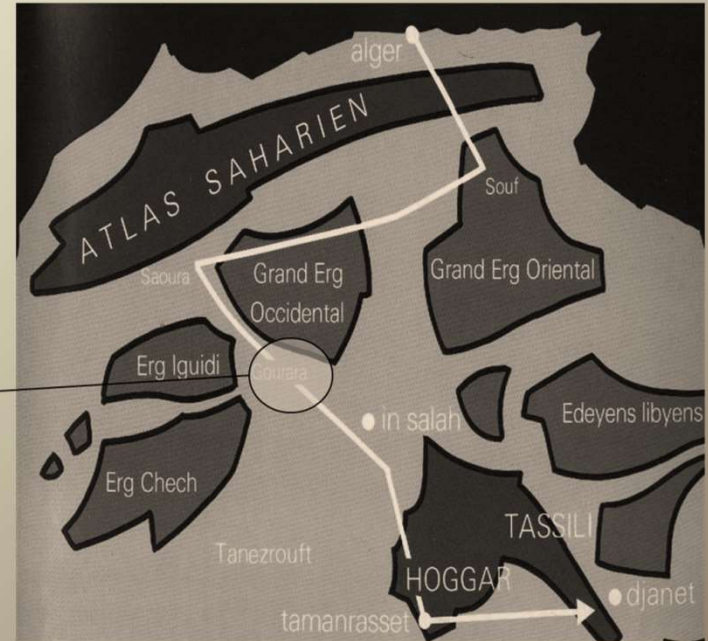
Geographical situation of Timmimoun



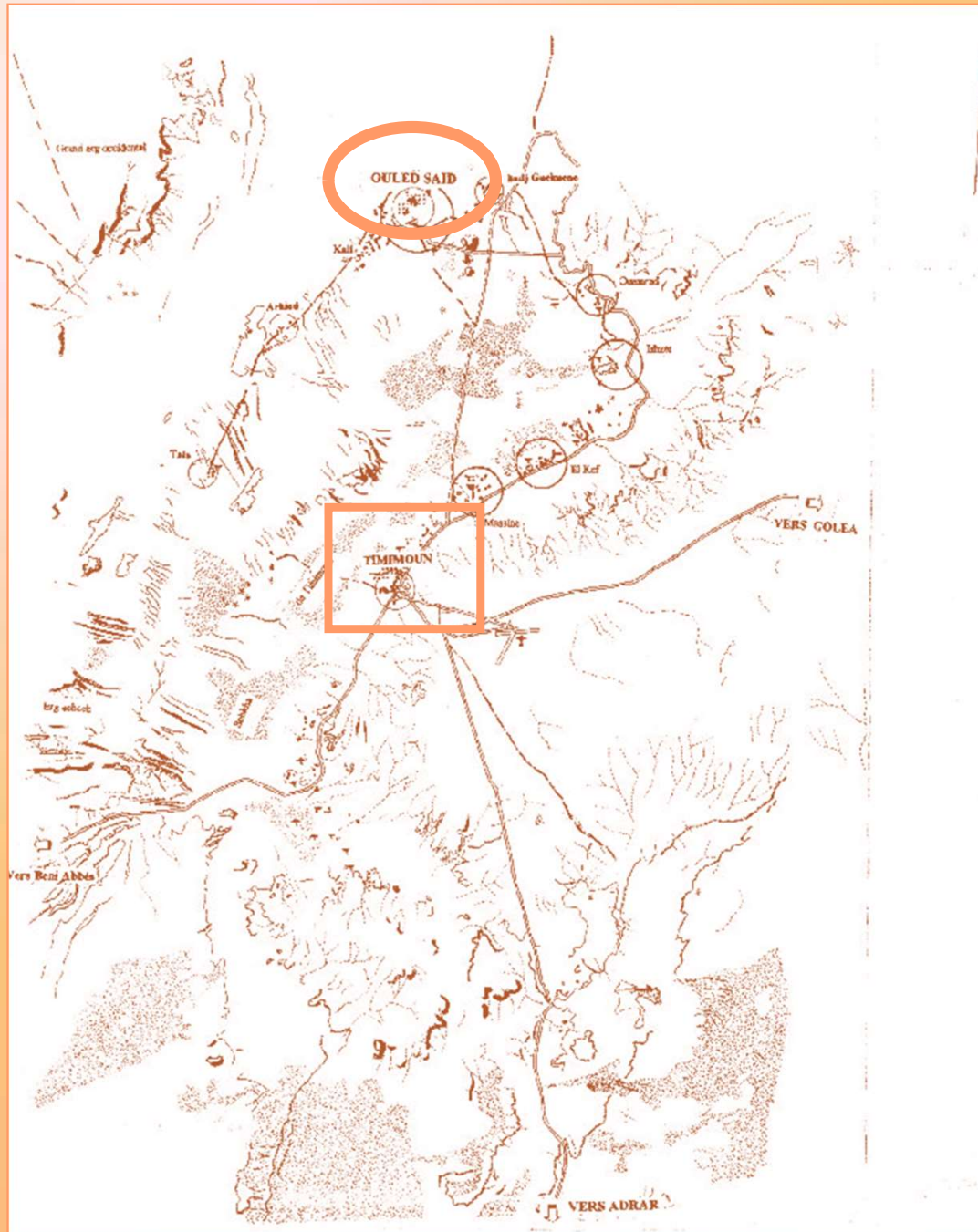
Presentation of the territory of « Timmimoun »



Gourara
au centre
du Sahara



Situation of the Ksour (Old City) – Territory Presentation



Route revêtu de moins de 6 Mètres	
Piste stabilisée et entretenue	
Piste non entretenue ou temporaire balisé	
Autre piste automobile	
Piste charretière	
Voies ferrées : 1. multiples - 2. A une voie	
Talus	
Palaise rocheuse (1) - Gars (2)	
Crête rocheuse (1) - Adoucement (2) - Pilon (3)	
Efflorescences gypseuses (1) - Zone sablée (2)	
en cordons (1) - en vague (2)	
Crêtes de dunes (siouf)	
Sommet (3)	
Ondulations, celles avec petites dunes vagues orientées	
Bornes (1) - Borne et numéro (2)	
Frontières	
Non bornés (1) - non délimités	
de 1er ordre (1)	
de 2e ordre (2) - de 3e ordre (3)	
Position géodésique (1) - astronomique (2) - cote	
Plantation (1) - banquet d'arbres ou d'arbustes (2)	
Arbres isolés : Palmier (1) - Arbres ou buais (2)	
Puits de pétrole ou de gaz (1) - Sondage (2) - Mine (3)	
Terrain d'aviation avec installations (1) - sans installations (2)	
Station radio	
1 - Constructions Permanentes	
Zone bâtie	
2 - Autres construction	
Constructions isolées	
Eglise (1) - Kouba (2) - Borej (3) - Ruines (4)	
Eri d'oued	
Dats - Sebkhé	
Point d'eau permanent	
Puits (1) - Guelta (2)	
Points d'eau temporaires	
Point d'eau non identifié sur les photographies aériennes	
Seguia (1) - Foggara (2)	

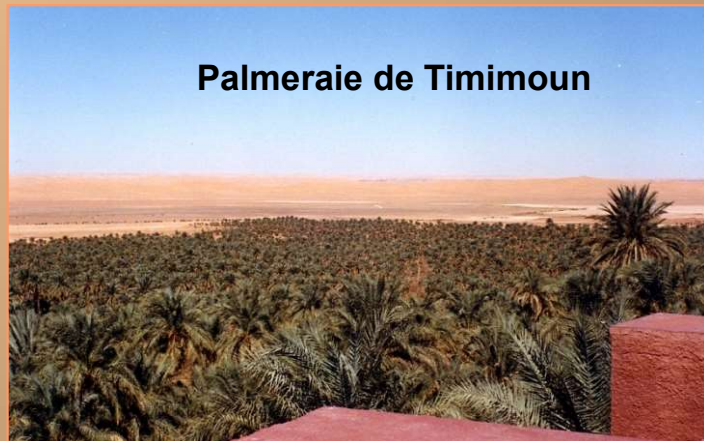
Identification of geomorphological components of the Timimoun Ksour territory



Echelle: 1/1 000 000
Structure géomorphologique de la région étudiée.

- ① Erg occidental
- ② Plateau du Tademaït
- ③ Reg Meguiden
- ④ Sebka
- Bordure d'érosion
- * Butte témoin

Different forms of landscapes: nature / culture of the Timimoun Ksour



Identification of intervention themes on the Timimoun Ksour



Degradation of the Ksar



Identification of intervention themes on the Timimoun Ksour



Water as a structuring factor (système OF FOGGARA)

وَنَبِّئُهُمْ أَنَّ الْمَاءَ قِسْمَةٌ بَيْنَهُمْ ۖ كُلُّ شِرْبٍ مُّحْتَضَرٌ ۚ 28, سورة القمر

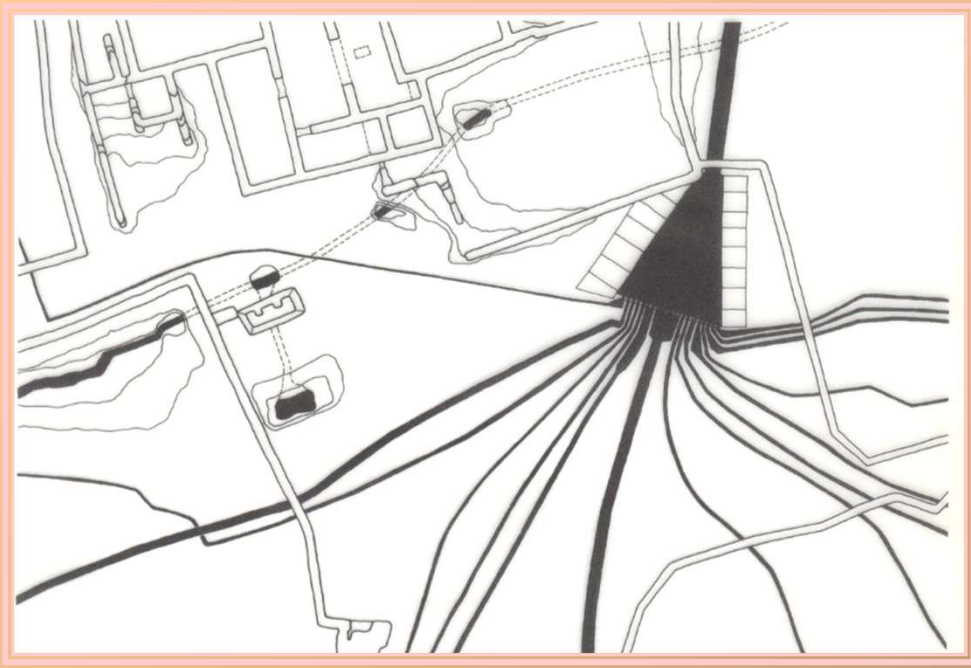
And inform them that the water is shared between them, each [day of] drink attended [by turn].





VivaVideo

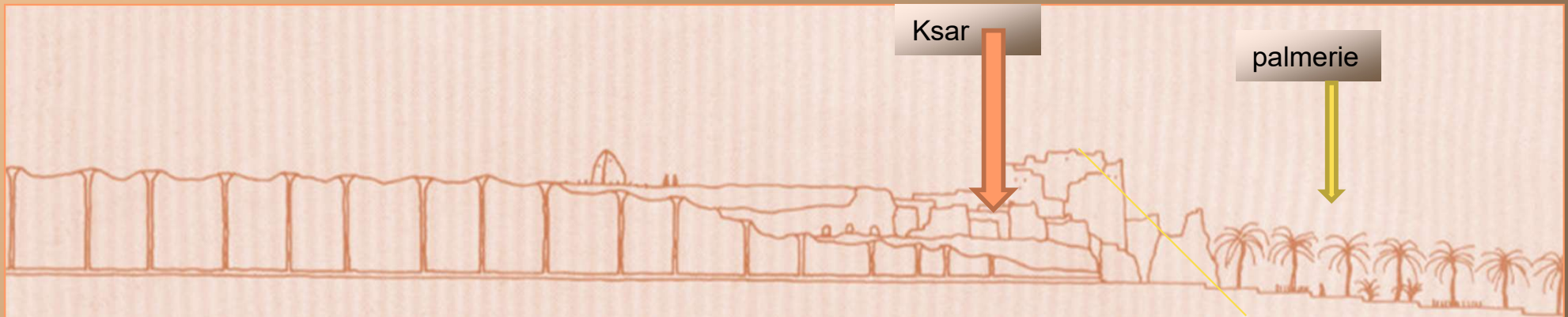
Water as a structuring factor (système OF FOGGARA)



VIEW in plan of the Kasseria Of Foggara

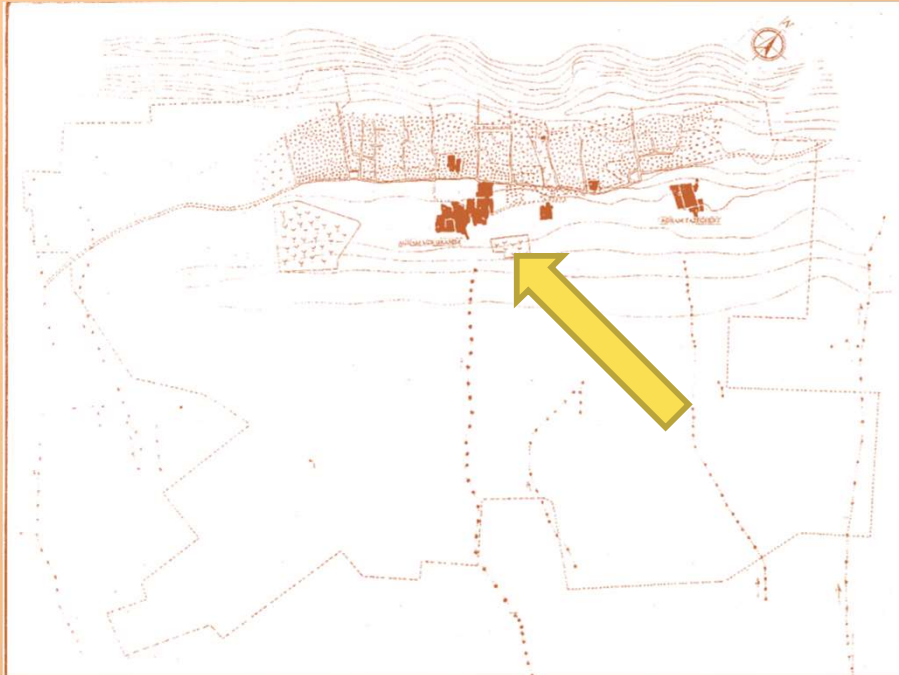


Overview of the Kasseria

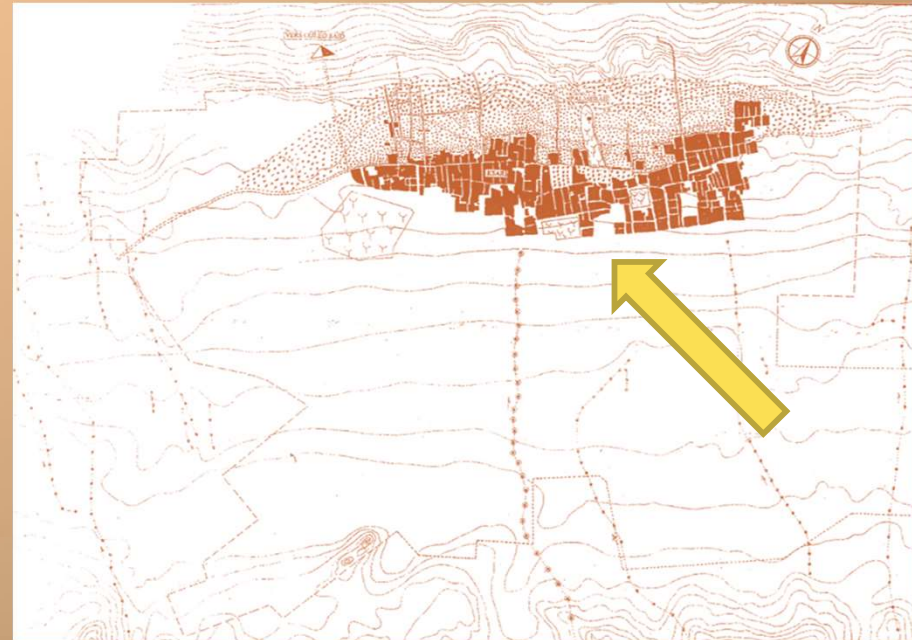


Cross section on the Foggara system

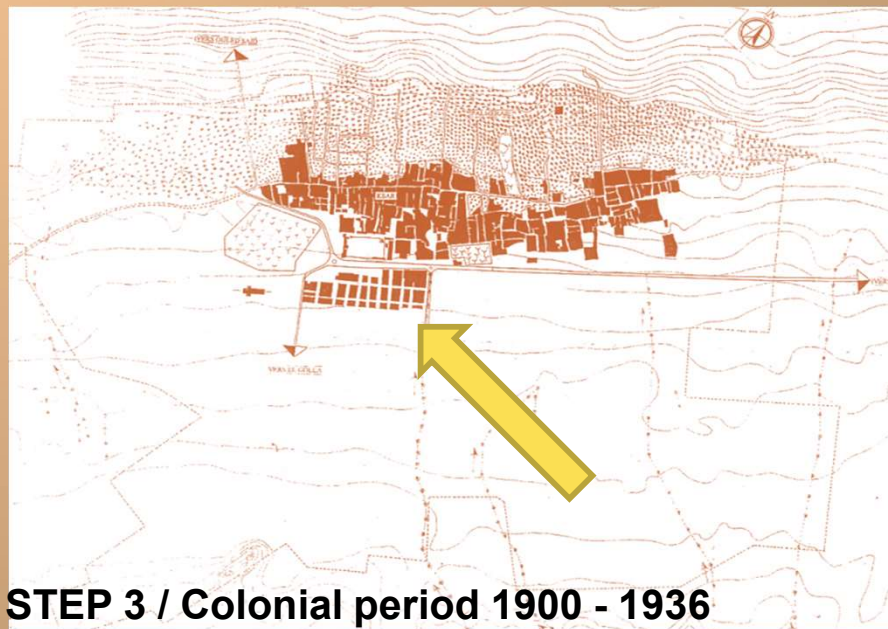
Historical process of formation / transformation - Ksar de Timimoun



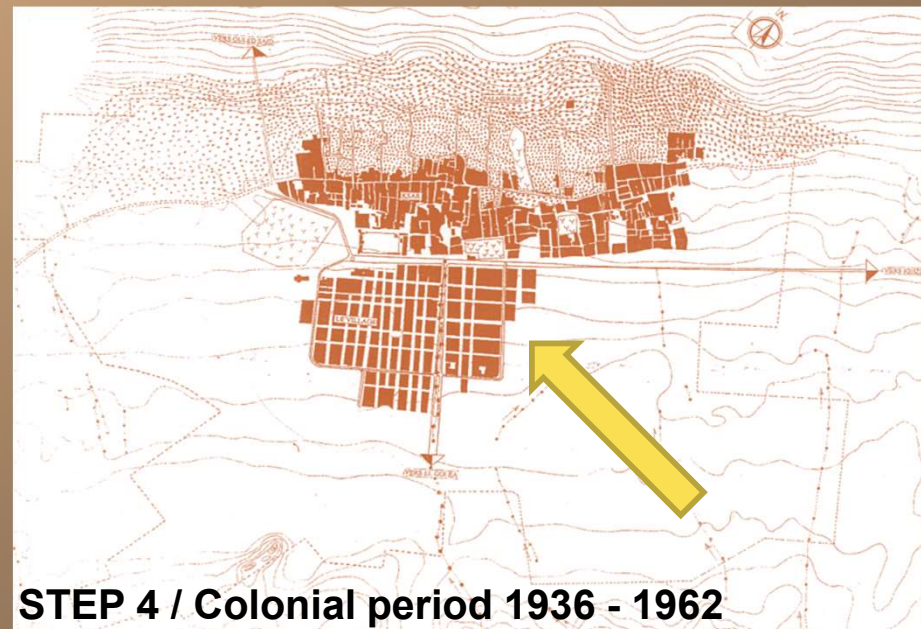
STEP 1 / Intramural period 300 AJC



STEP2 / Period extra- muros X in the 19th century

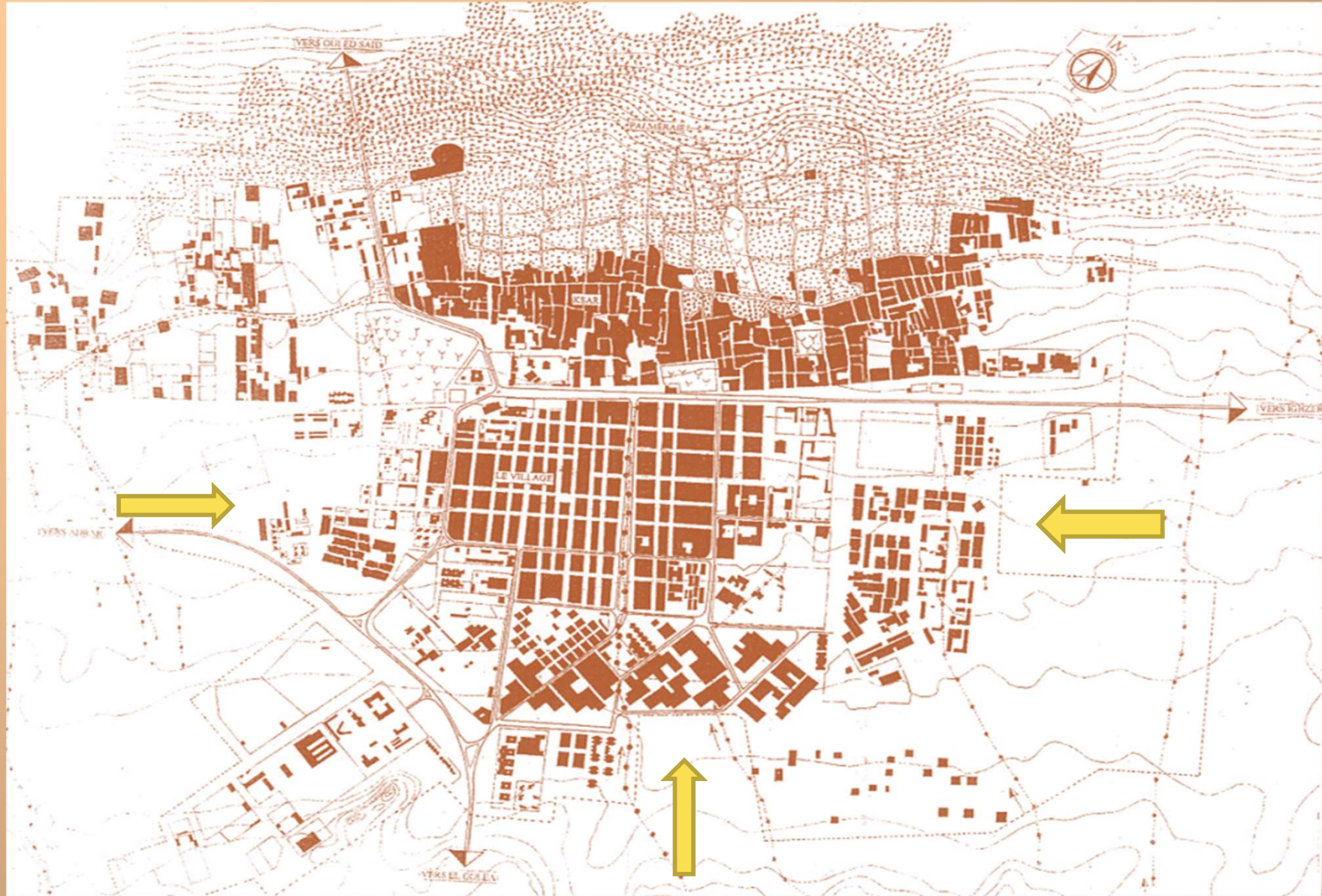


STEP 3 / Colonial period 1900 - 1936



STEP 4 / Colonial period 1936 - 1962

Historical process of formation / transformation - Ksar Of - Timimoun



STEP 5 / Post-colonial period 1962 -1992

Presentation of the city of Timimoun

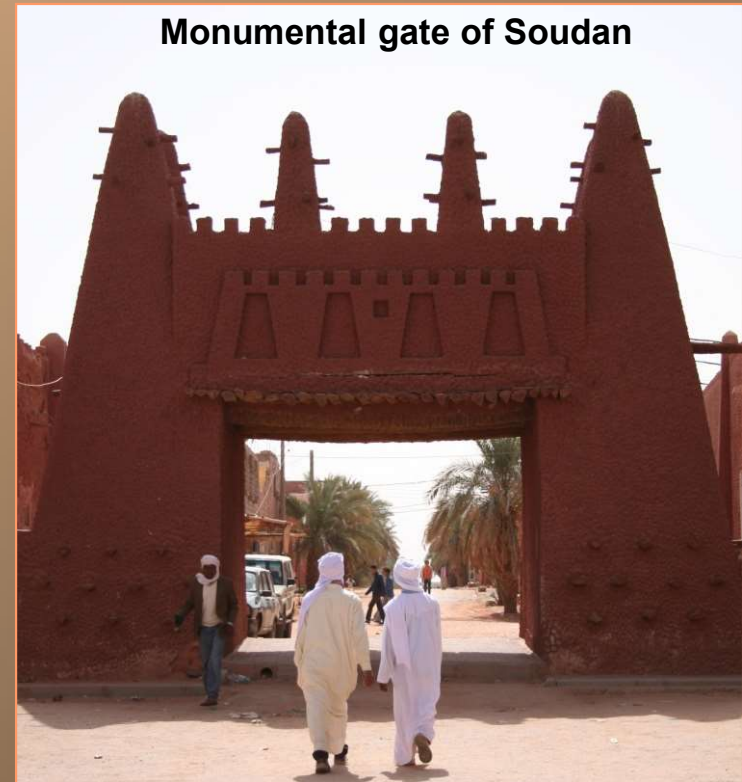
Central market place



Administrative Headquarters

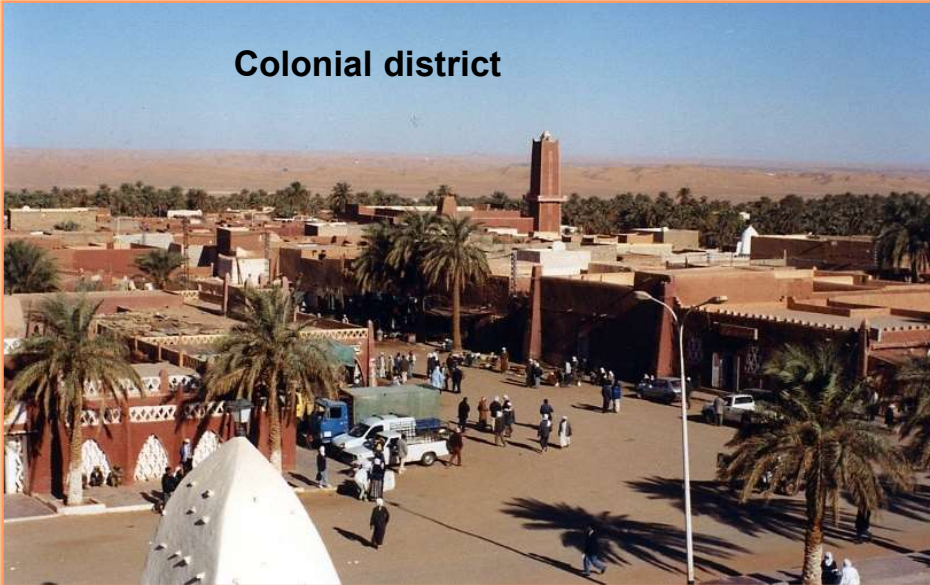


Monumental gate of Soudan

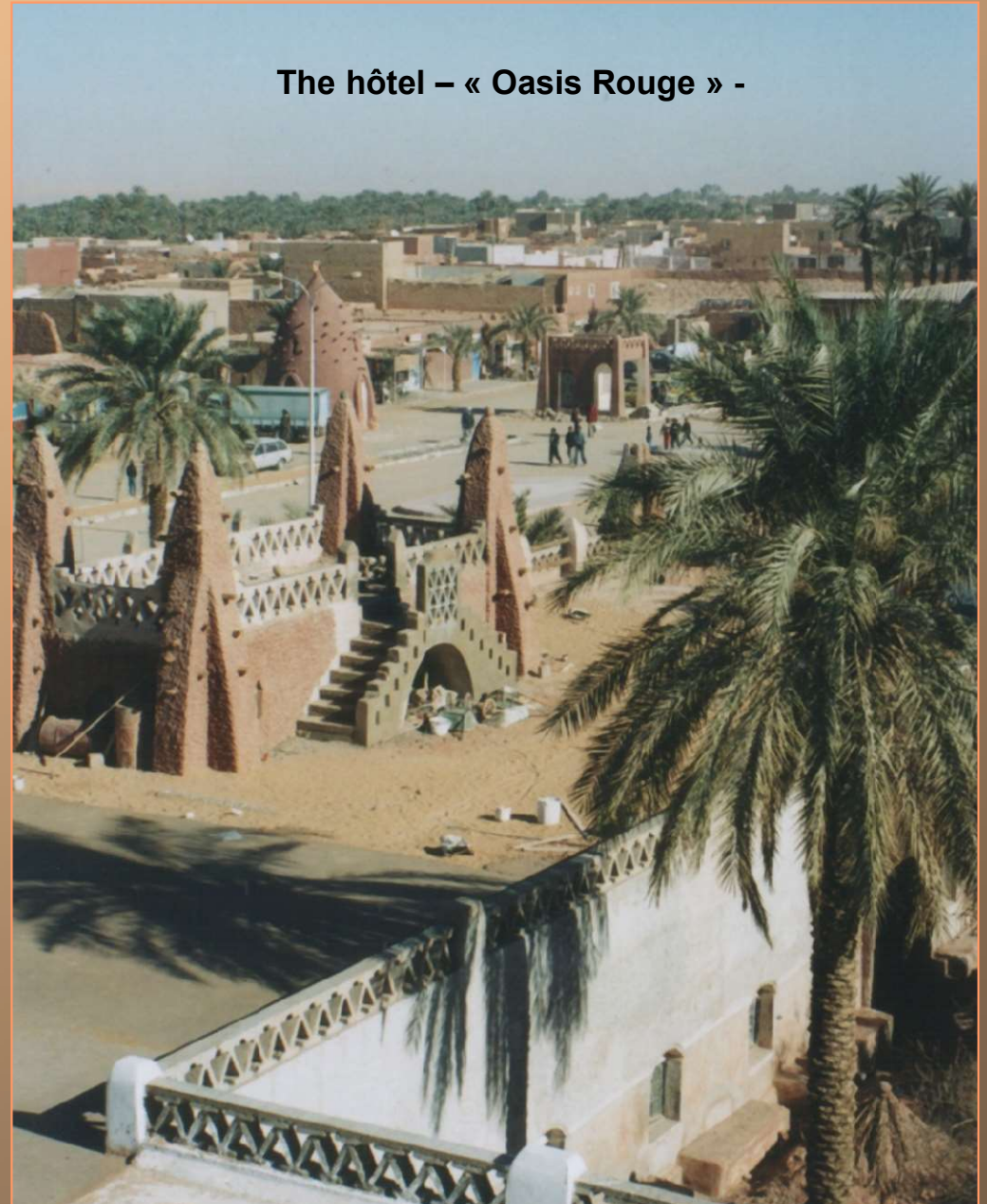


Presentation of the city of Timimoun

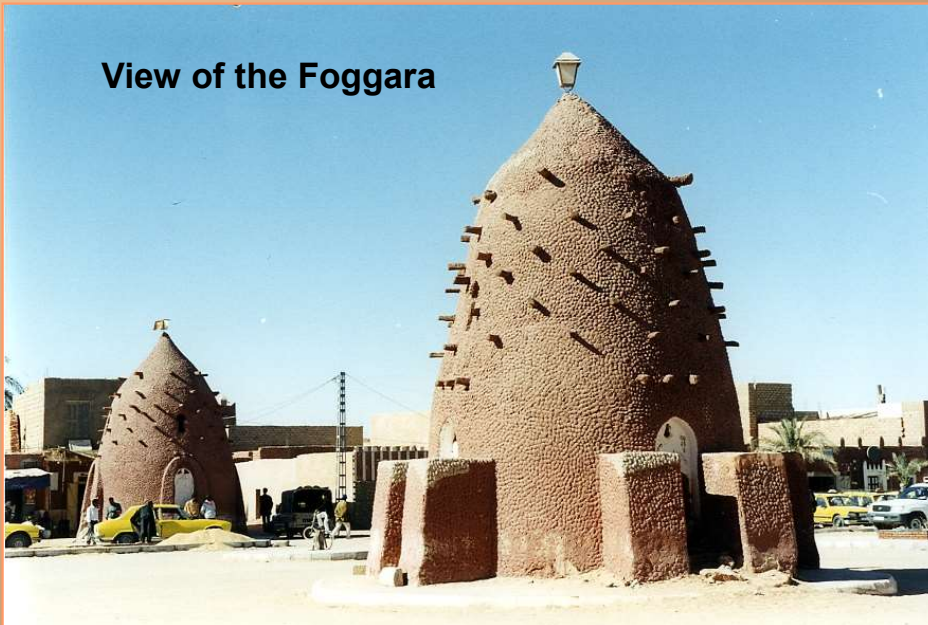
Colonial district



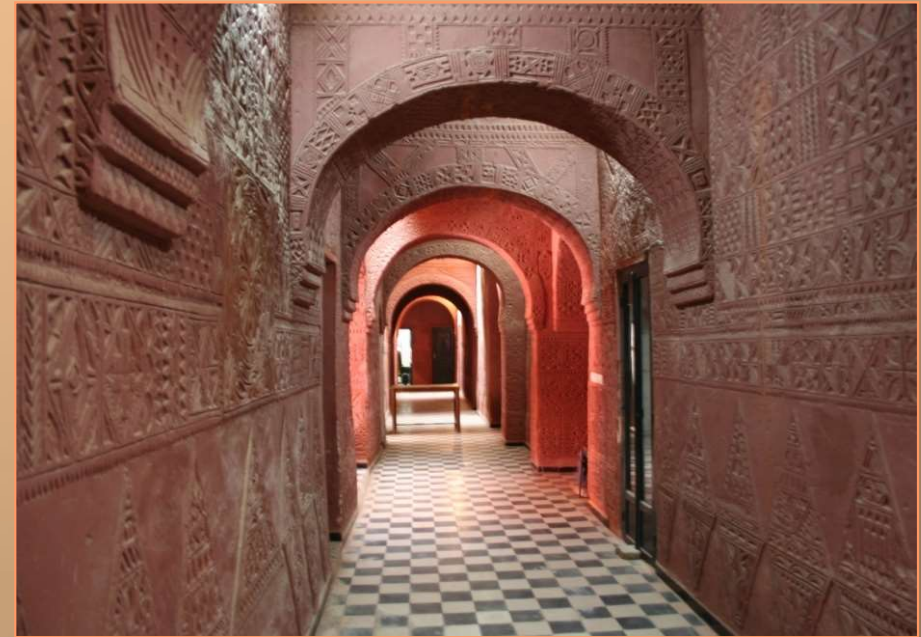
The hôtel – « Oasis Rouge » -



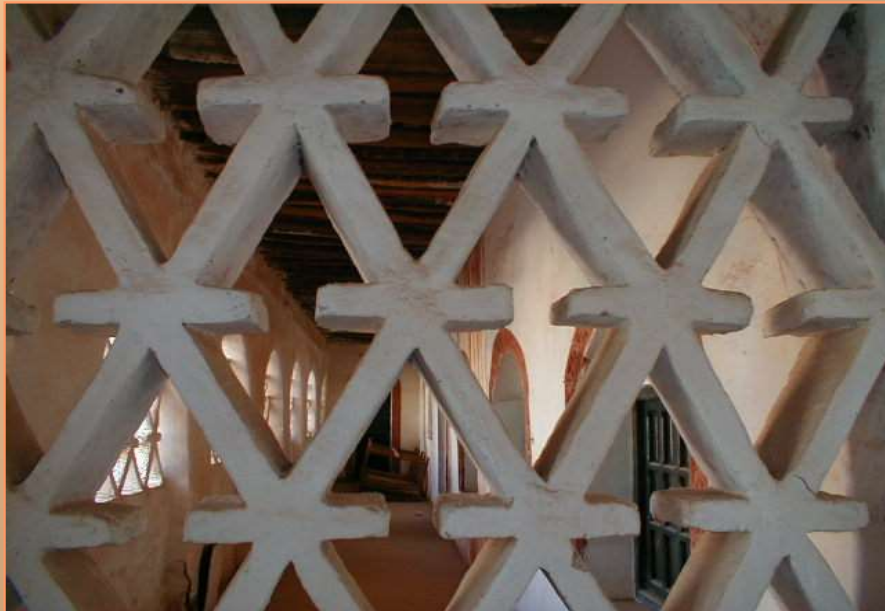
View of the Foggara



Different views for the l'hôtel – RED Oasis -

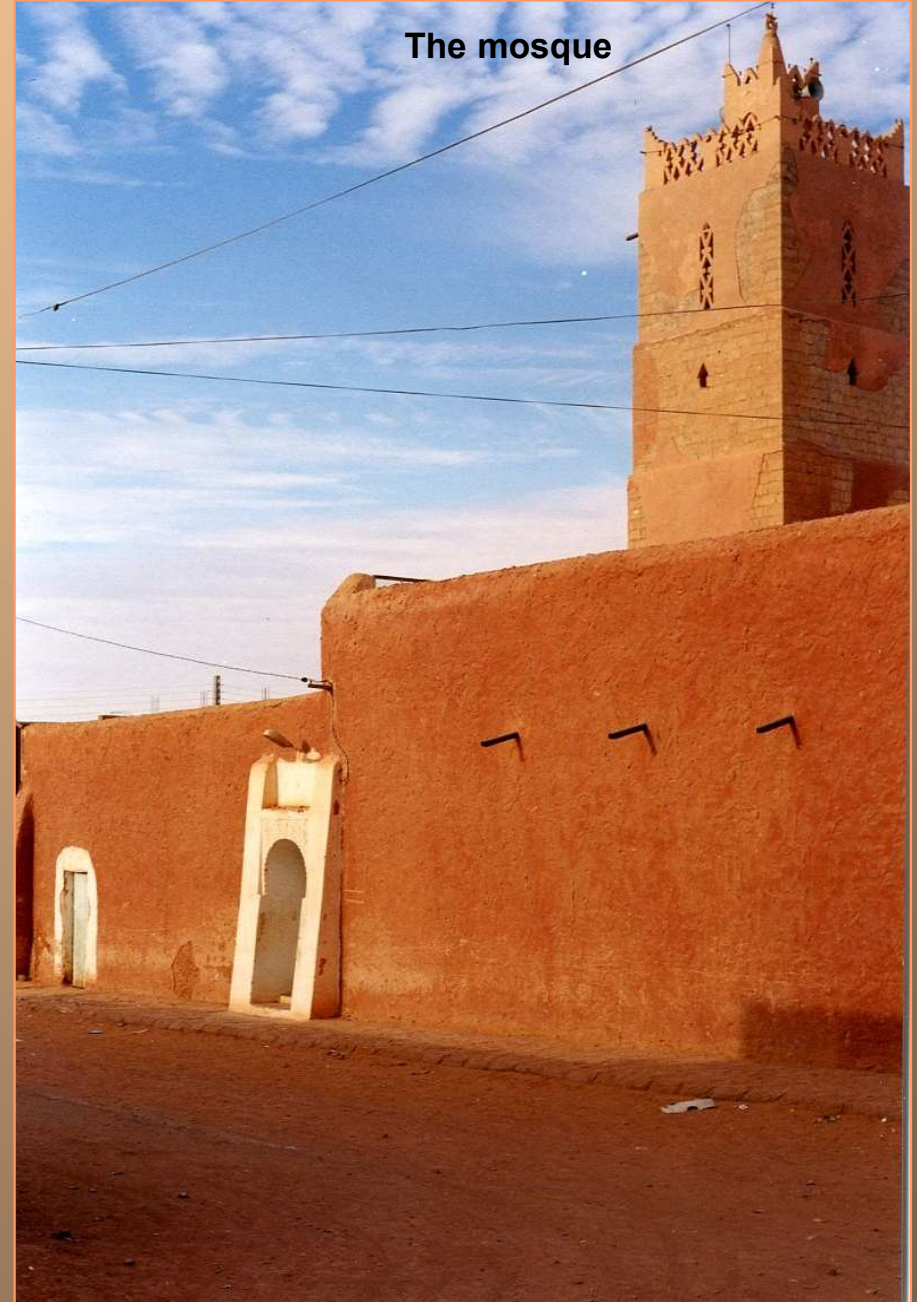


Architectural details OF the hôtel – Red Oasis -

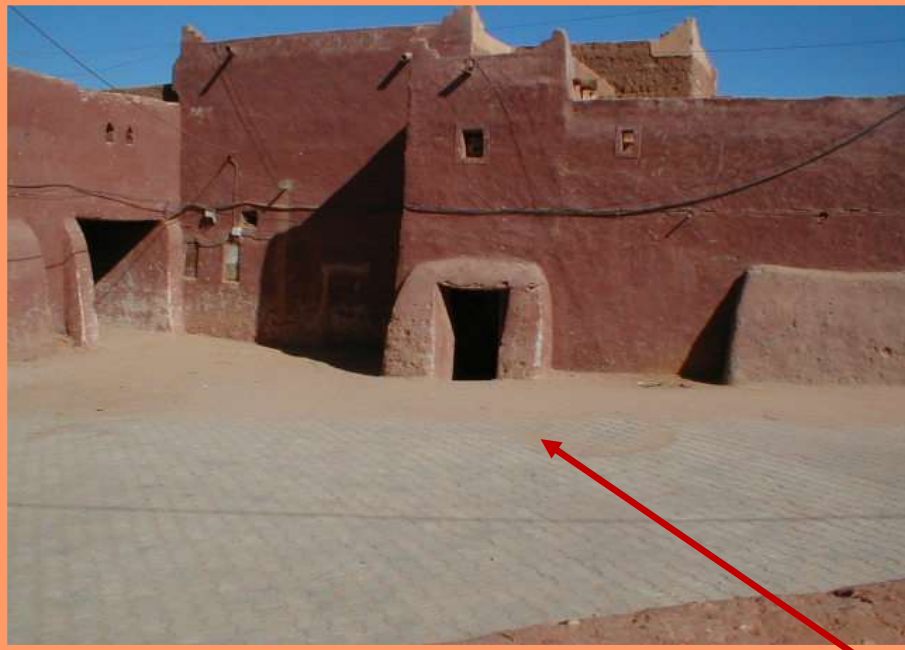




urban dwellings



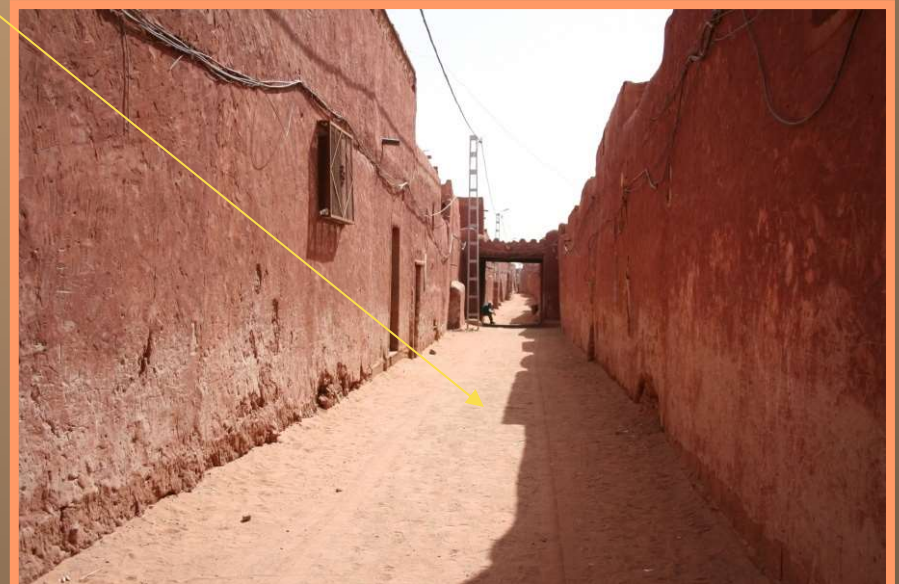
Distribution system for the traditional compact ksours fabric



View of the Rahbas (plots)



the classic street in the ksar

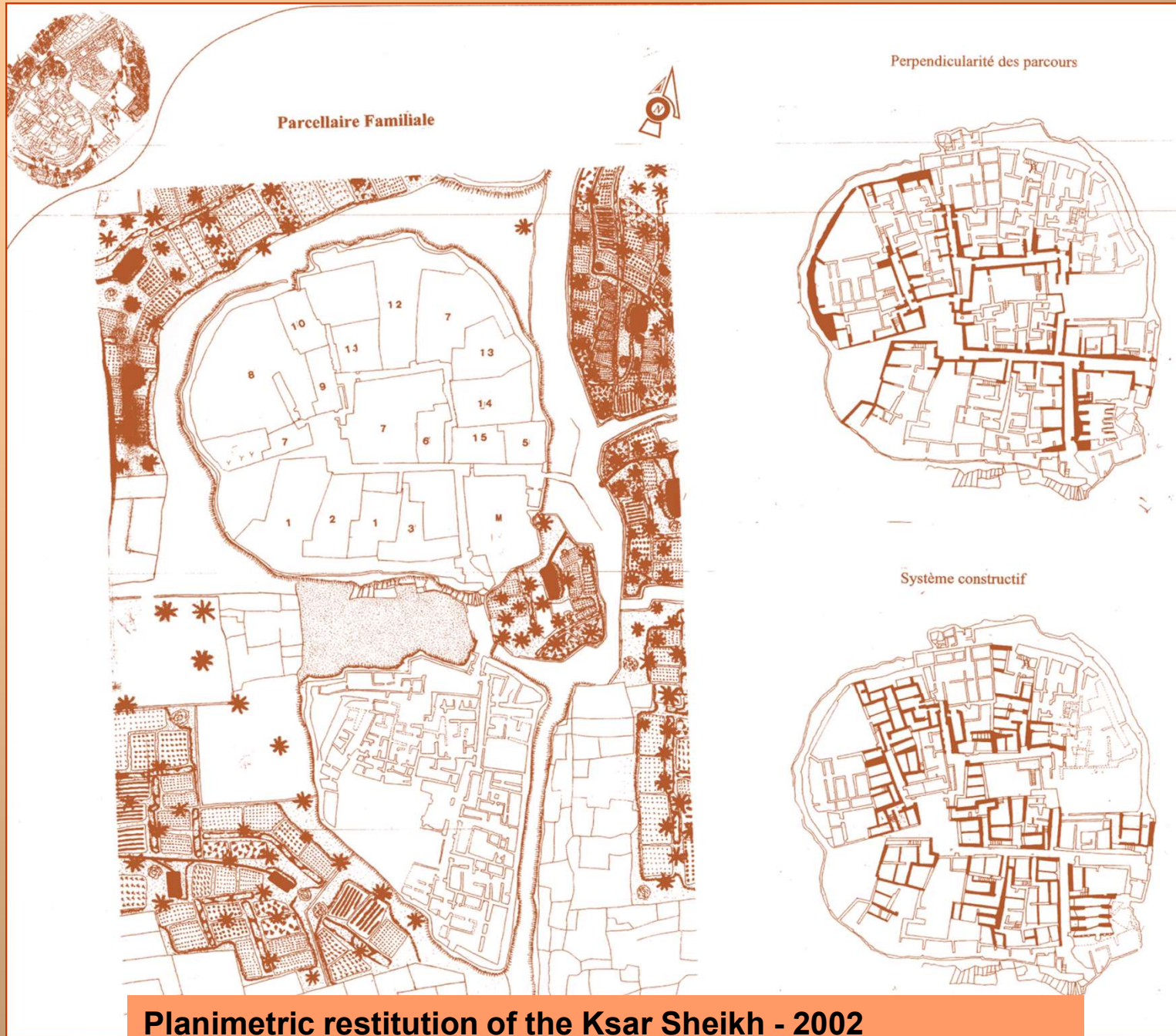


Historical process of formation / transformation -of the Ksar



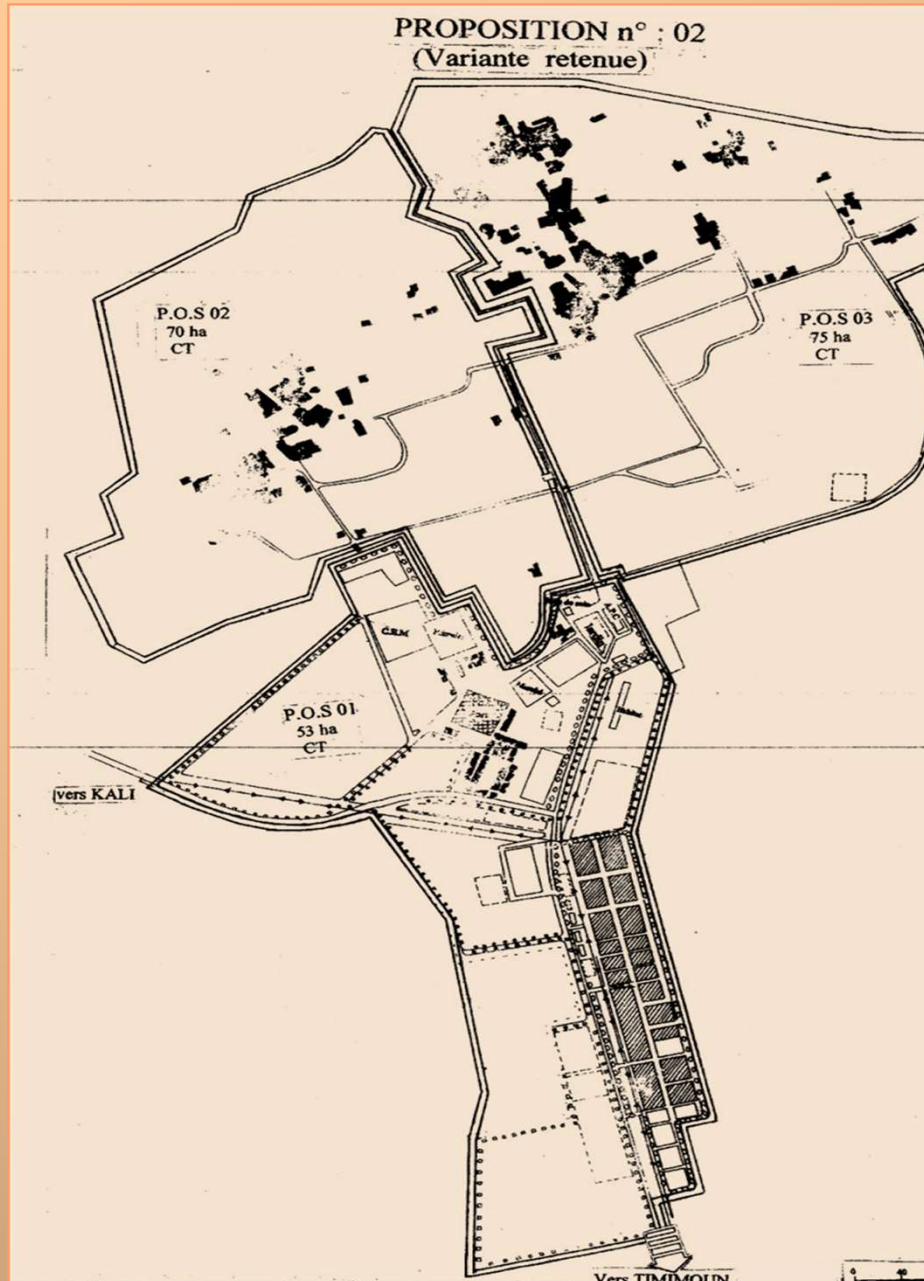
Planimetric restitution of the Ksar Sheikh - 2002

Historical process of formation / transformation -of the Ksar

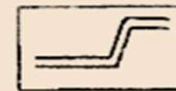


Planimetric restitution of the Ksar Sheikh - 2002

Historical process of formation / transformation -of the Ksar



LEGENDE



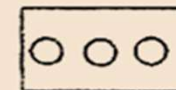
Périmètre urbain.



Périmètre d'urbanisation a court terme.



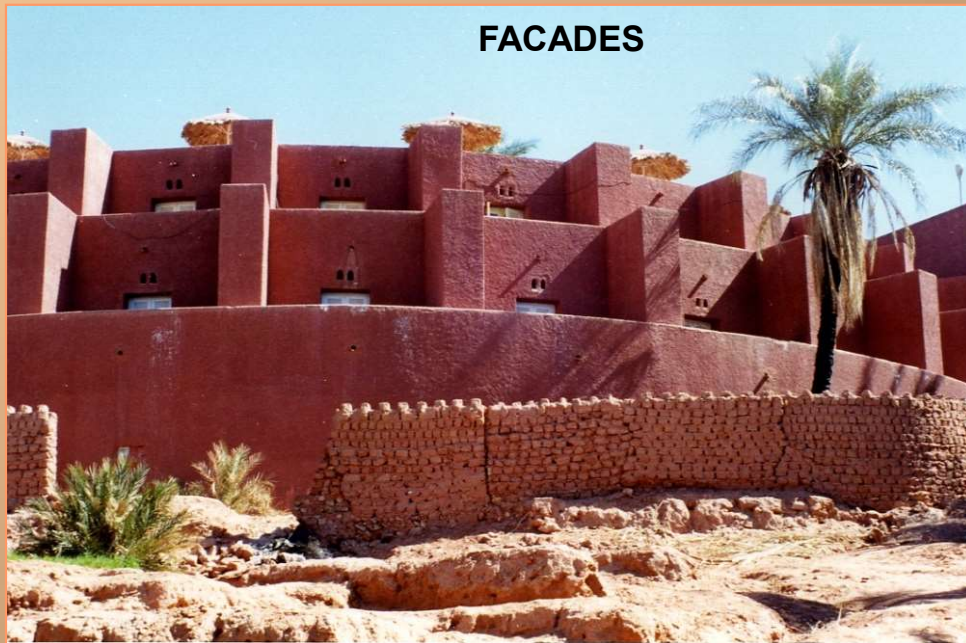
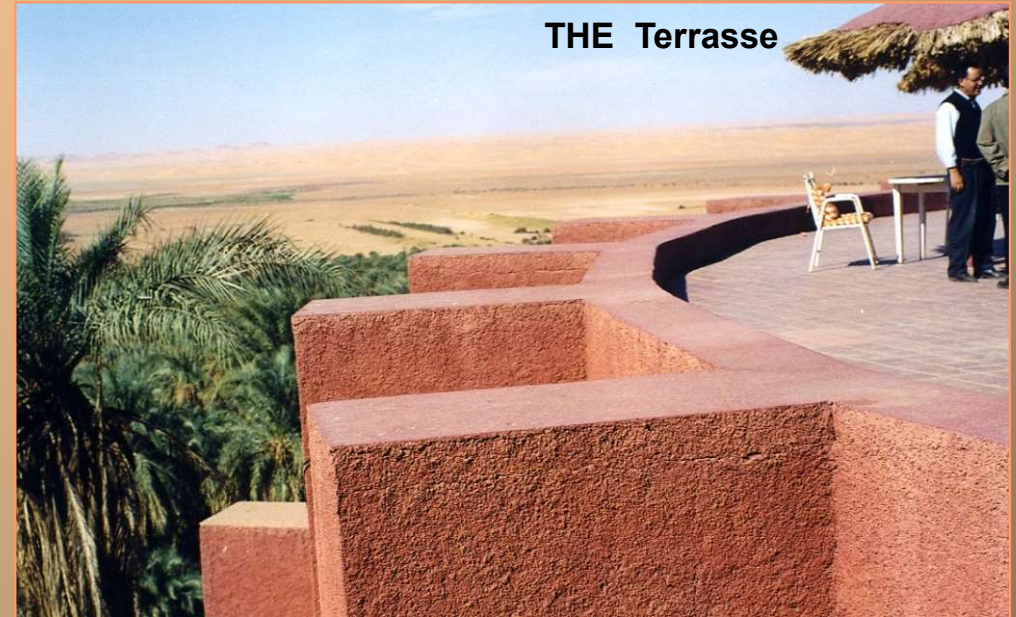
Périmètre d'urbanisation a moyen terme.



Périmètre d'urbanisation a long terme.

Hotel Gourara as a contemporary architectural reference in Timimoun

(Arch.F.Pouillon) - 1974 -



Hotel Gourara as a contemporary architectural reference in Timimoun

(Arch.F.Pouillon) - 1974 -



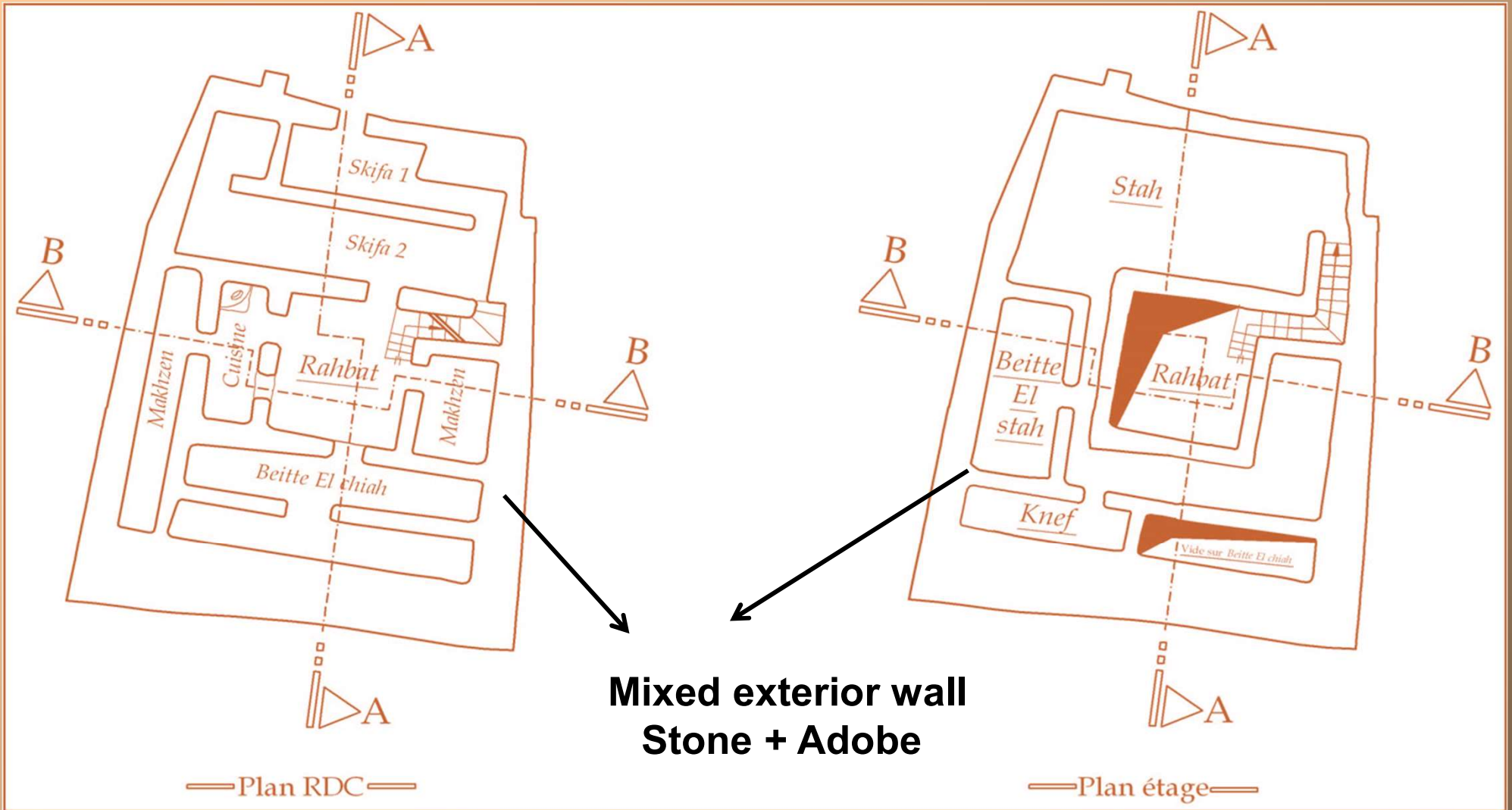
THE RESTAURANT



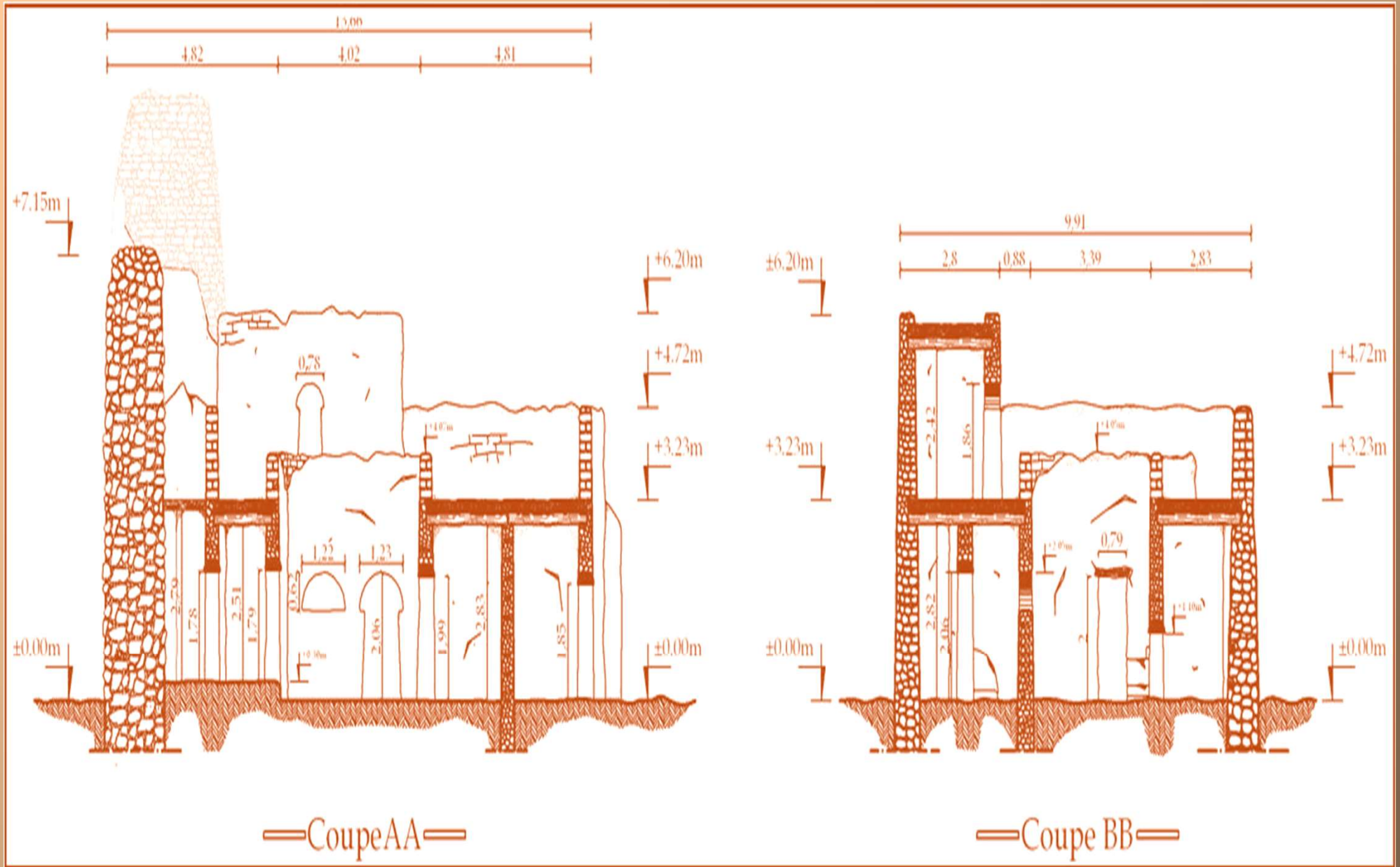
GARDEN AND SWEMING POOL



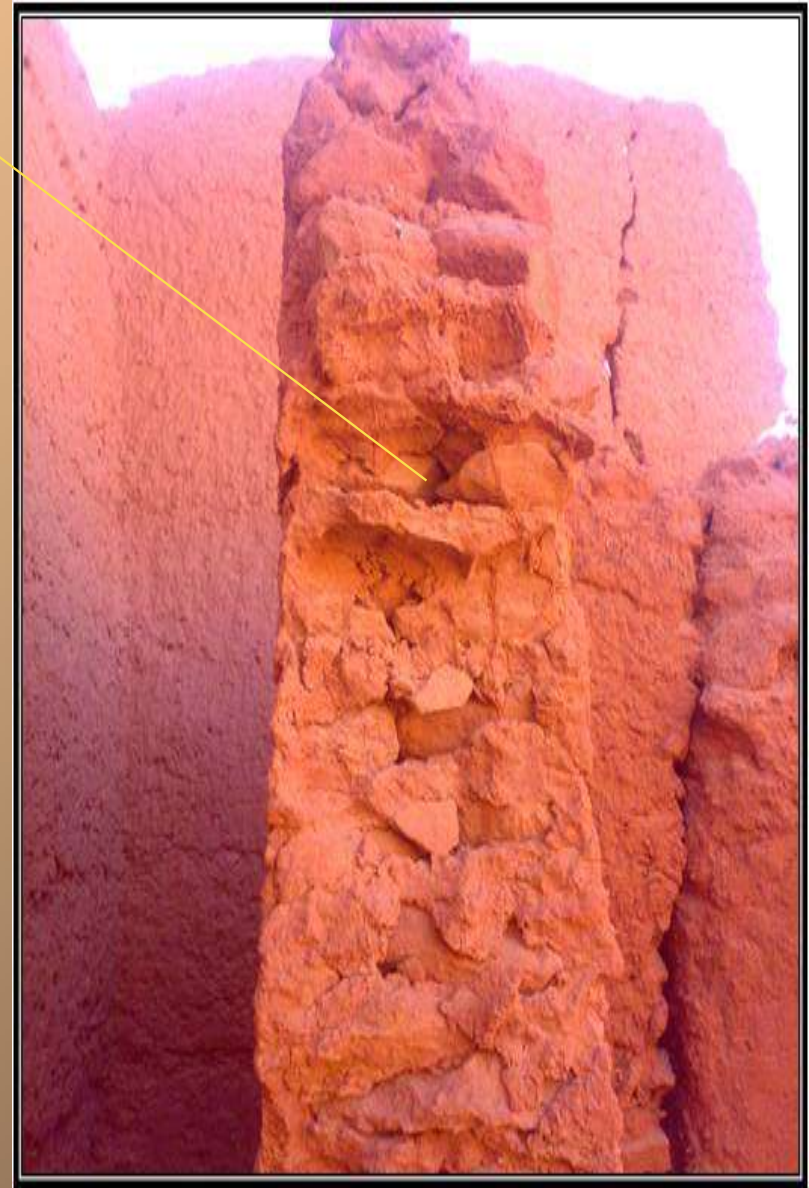
TYOLOGICAL READING. CASE 1 / THE DWELLING UNIT



TYOLOGICAL READING .CASE 1 / THE HOUSING UNIT--

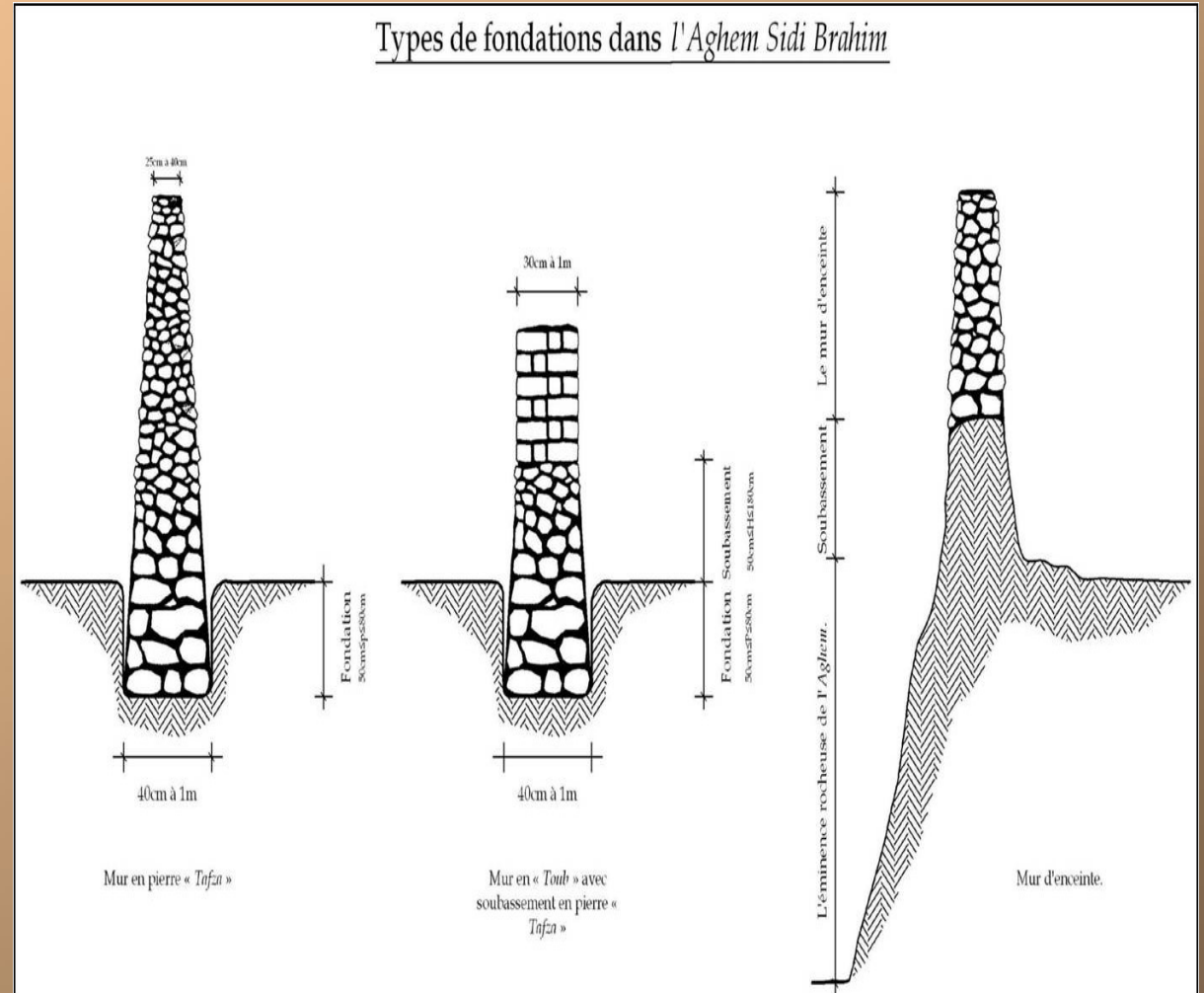
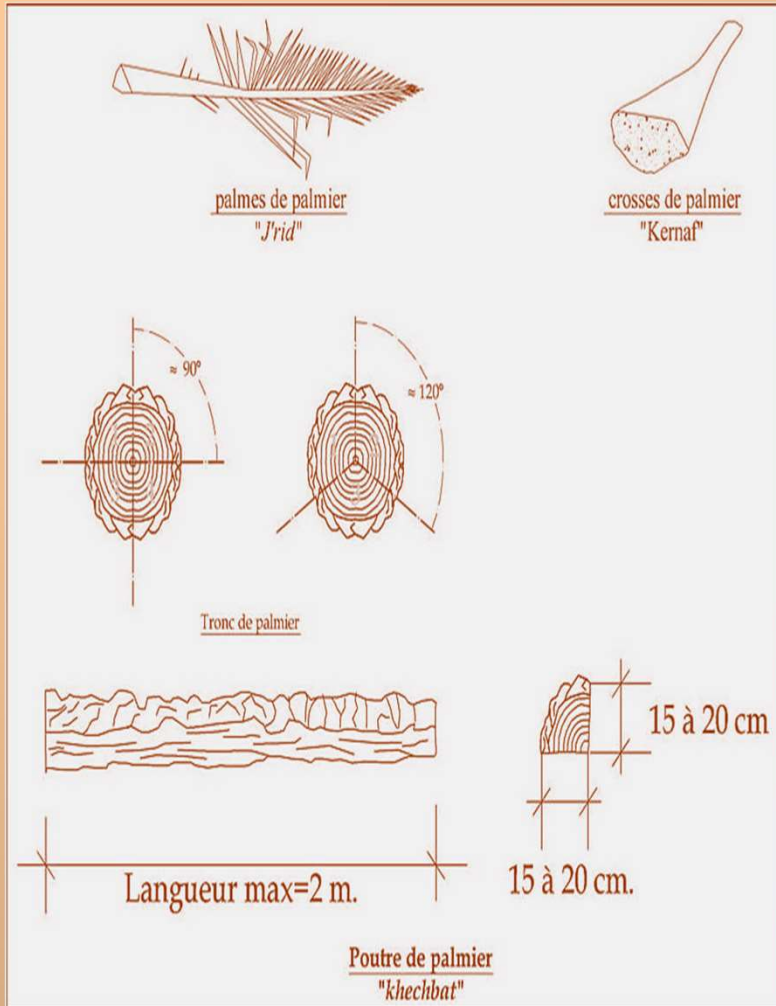


The separation walls



MATERIALS AND CONSTRUCTION TECHNIQUES"

« THE ADOBE AS A LOCAL REFERENCE MATERIAL. »



Palm wood as an accompanying material in the ceiling structure

Types of Foundations

CONSTRUCTION MATERIALS AND TECHNIQUES

DRAWING A

WATERPROOFED LAYER OF LIME PLASTER

Compacted Clayey Soil Layer

$20\text{cm} \leq ep \leq 25\text{cm}$

dry palms

Les palmiers séchés de palmier
"J'rid"

bare palm stem

Palm beam

DRAWING B

WATERPROOFED LAYER OF LIME PLASTER

Compacted Clayey Soil Layer

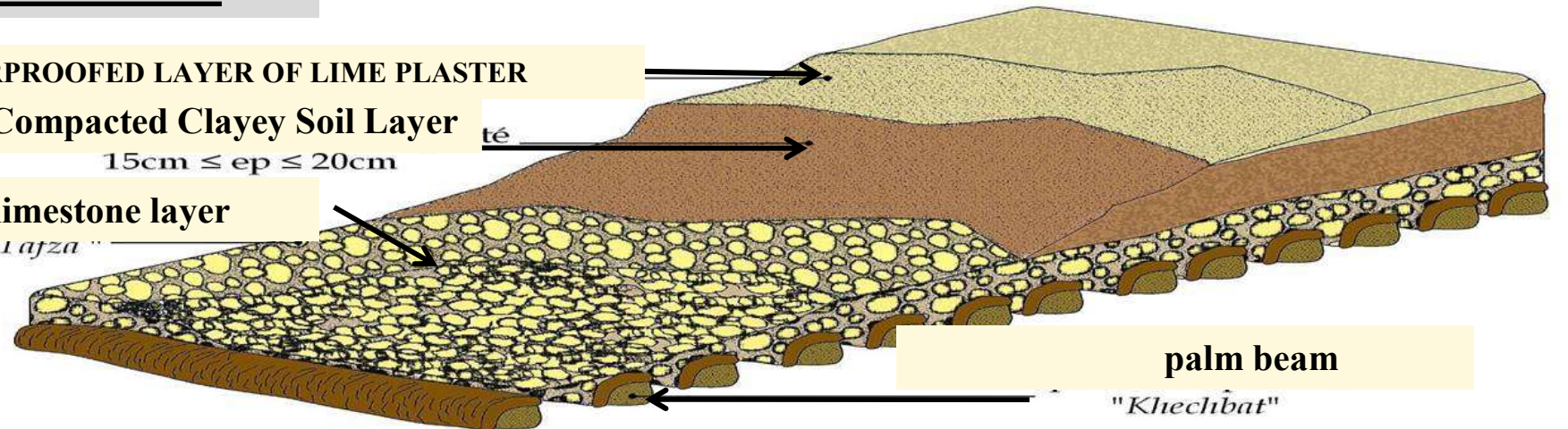
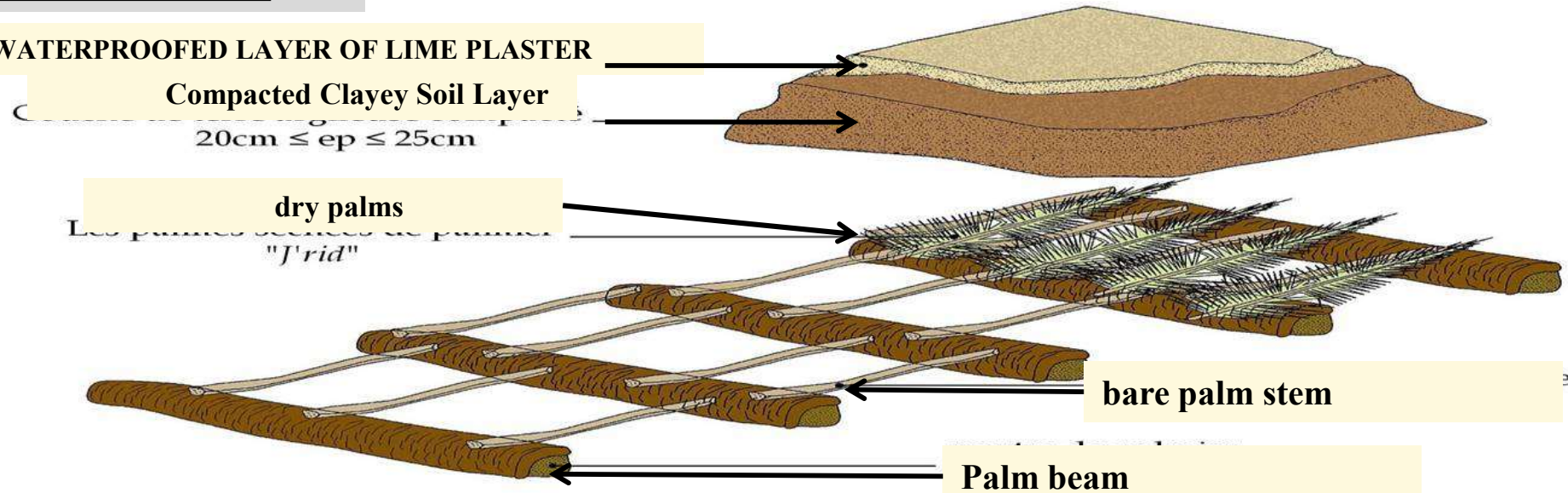
$15\text{cm} \leq ep \leq 20\text{cm}$

limestone layer

calcaires "Iafza"

palm beam

"Khechibat"



TYOLOGICAL READING .CASE 1 / THE HOUSING UNIT--



PHOTO 01

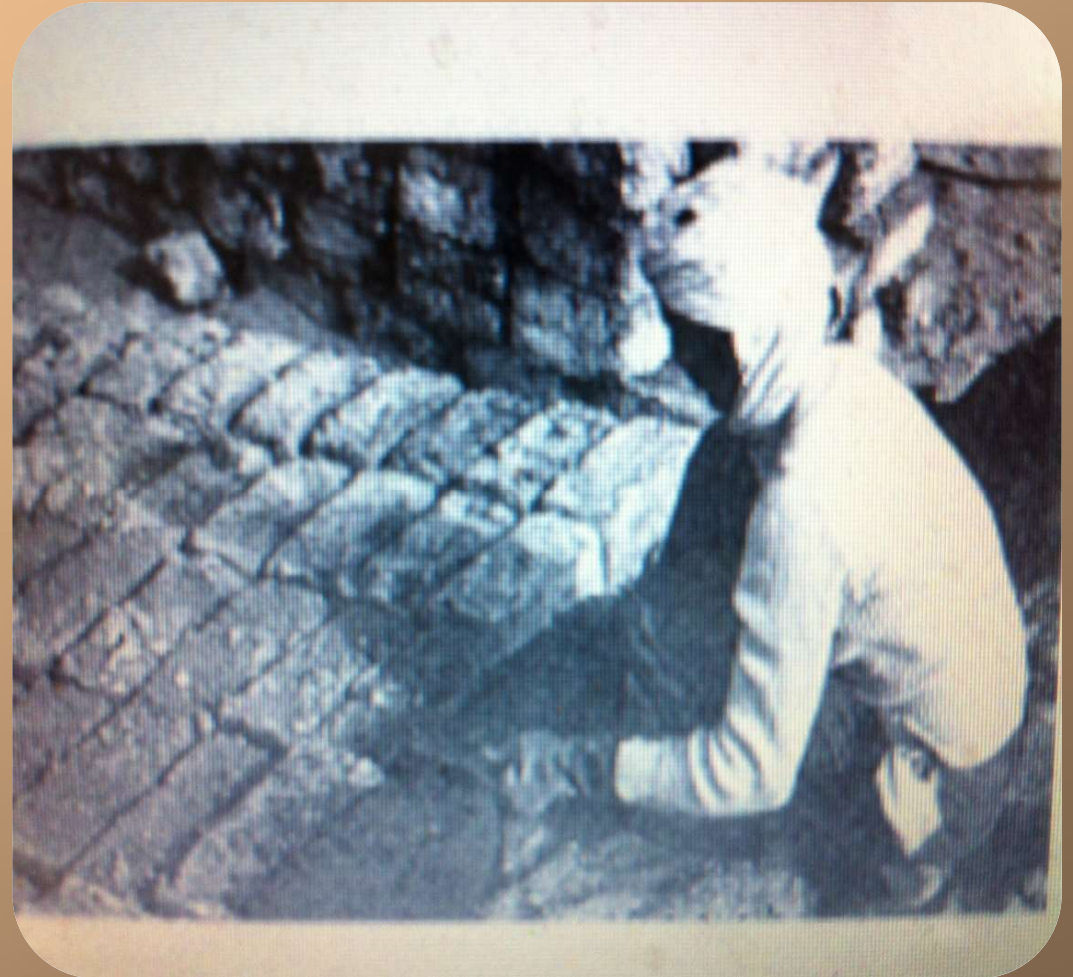


PHOTO 02

Questioning sustainable development.

Développement implies structural modifications, where as sustainability supposes continuity. Which resources have to be preserved for the générations to come, if today we do not know which will be essential?

Sustainability makes the dead end on the fact that the history of humanity is an alternation of more or less stationary phases and brutal ruptures.

Can we really connect global and local scales in a large machinery, as if same principles governed the whole world and each single place?.

Actually, **sustainable development dreams an unrealistic smooth world without clashes, conflicts, crises.**

François Mancebo

ANSWERS

- **Admittedly, in the first instance, its definition remains simple:**
 - 1- It is about promoting development that meets the needs of societies today without compromising those of future generations.
 - 2- It is based on the awareness of the finiteness of our bio-physical environment.

But, with such a definition, sustainable development is relatively quickly placed at the heart of three contradictions that are difficult to reconcile:

- 1- compromise between the interests of current and future generations;
- 2- compromise between the priorities of industrialized and developing countries;
- 3- compromise between quality of life and ecosystem preservation.

THE SOLUTION .

SHE'S IN TRAINING? --



THE SOLUTION .

SHE'S IN TRAINING? --

**ACADEMIC
RESEARCH /**

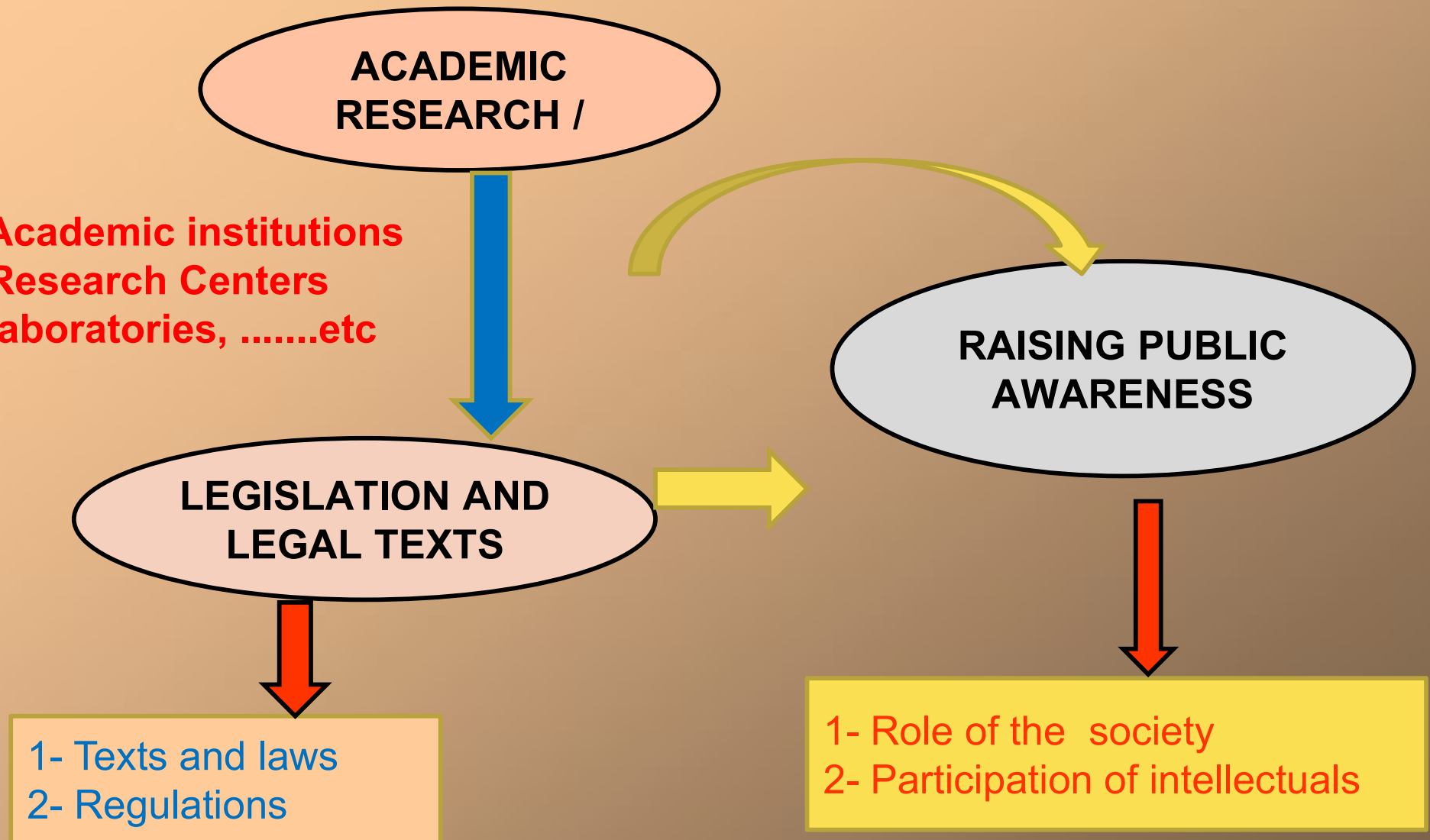
- 1- Academic institutions
- 2- Research Centers
- 3- laboratories,etc

**LEGISLATION AND
LEGAL TEXTS**

- 1- Texts and laws
- 2- Regulations

**RAISING PUBLIC
AWARENESS**

- 1- Role of the society
- 2- Participation of intellectuals



THE TRAINING PROGRAM

- ❖ Definition of construction composition elements
- ❖ Material resistance comparative aspect
- ❖ Structural bonding technique
- ❖ Site organization
- ❖ Properties of building materials and their roles
- ❖ Preventive technique for improving construction quality
- ❖ Special structures
- ❖ Glossary of terms



- **VIEWS ON THE APPLICATION**
- **Using Adobe Bricks**

Other Experiences with Students the New URBAN AREA

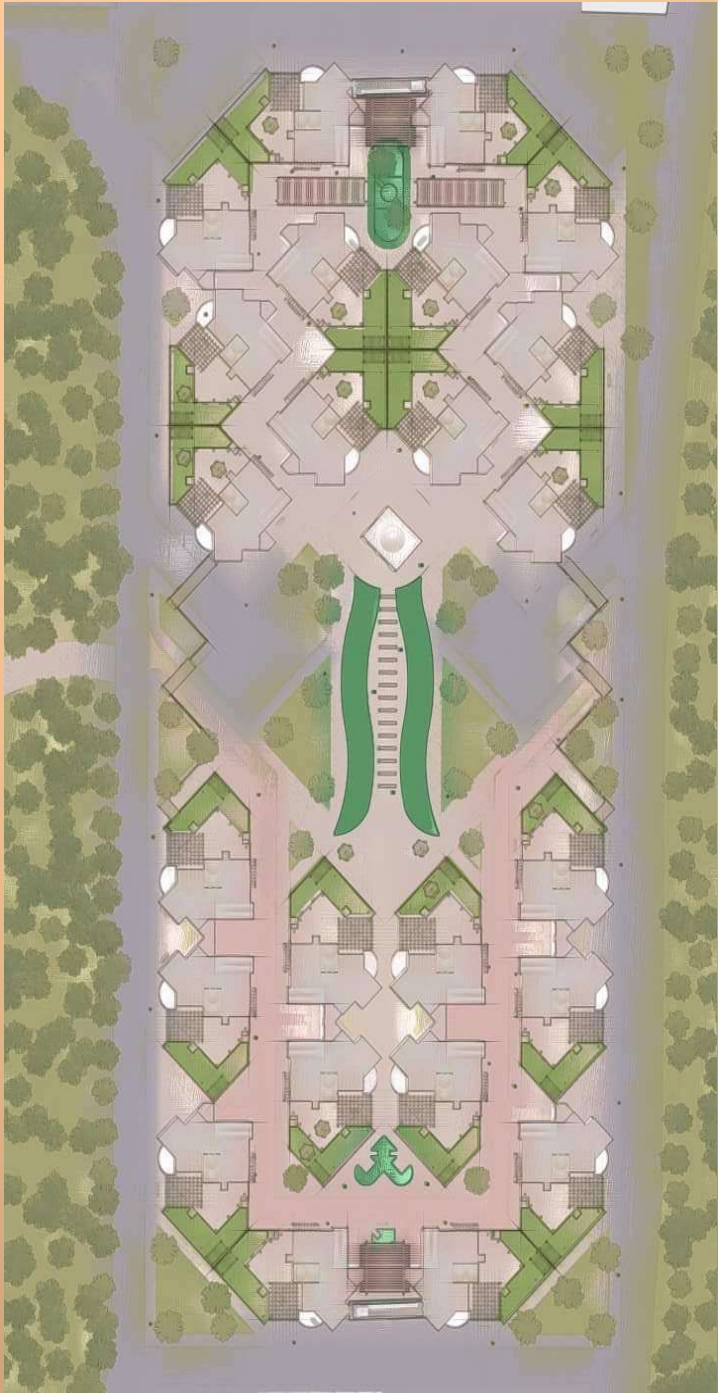


IVEAU DU SEMI COLLECTIF SITUÉ ET L'INDIVIDUELLE SITUÉ
RIDEAU VERT



THE MODEL OF THE PROJECT











• **THANK YOU FOR YOUR ATTENTION**