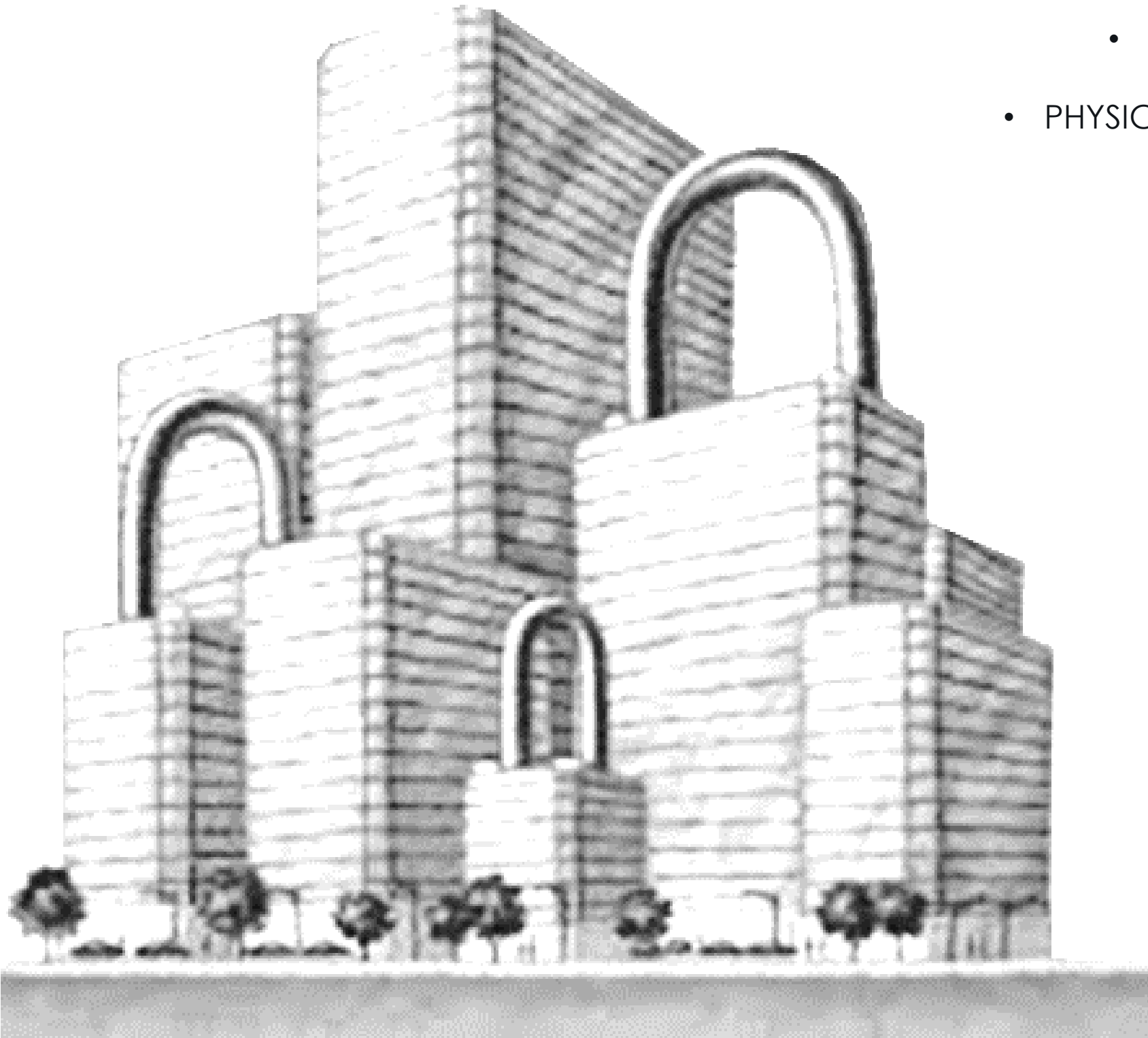


# SECURITY by DESIGN

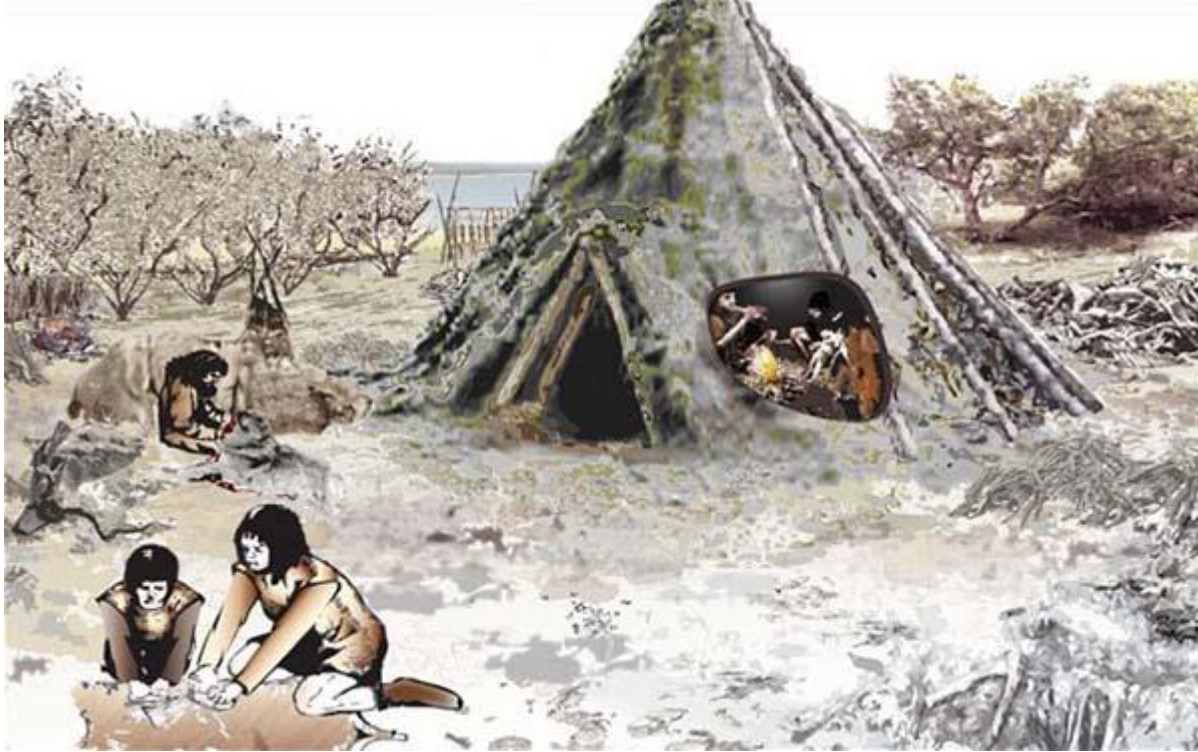
- Architects can not replace Security men
- PHYSICAL ENVIRONMENT = primary security tool
  - Efficacy, cost effective, incorruptible
  - SECURE is critical to be SMART



AUTHOR & RESEARCH SCHOLAR:  
**AR. MANJARI KHANNA KAPOOR**  
PRACTISING ARCHITECT & ACADEMICIAN

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ARCHITECTURE = SHELTER & SECURITY

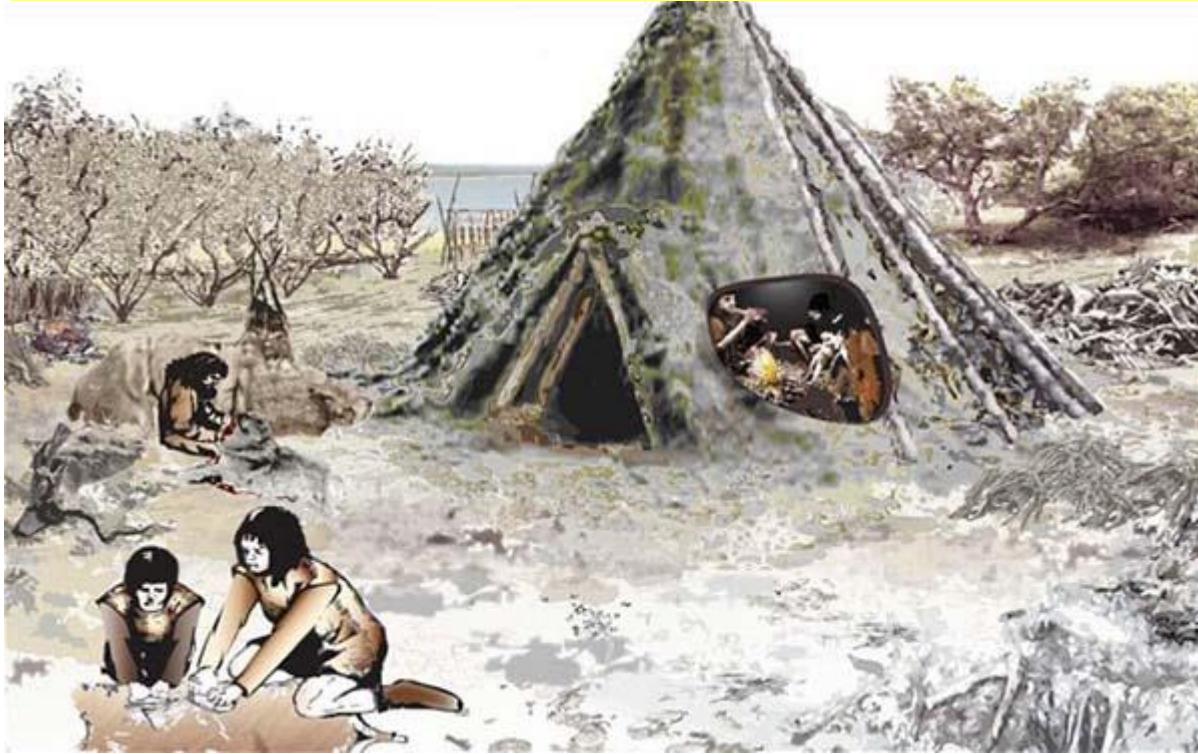


Man started building to 'secure' himself and today...

DESIGN

WHAT ARE THE OBLIGATIONS?

## ARCHITECTURE = SHELTER & SECURITY



Man started building to 'secure' himself and today...

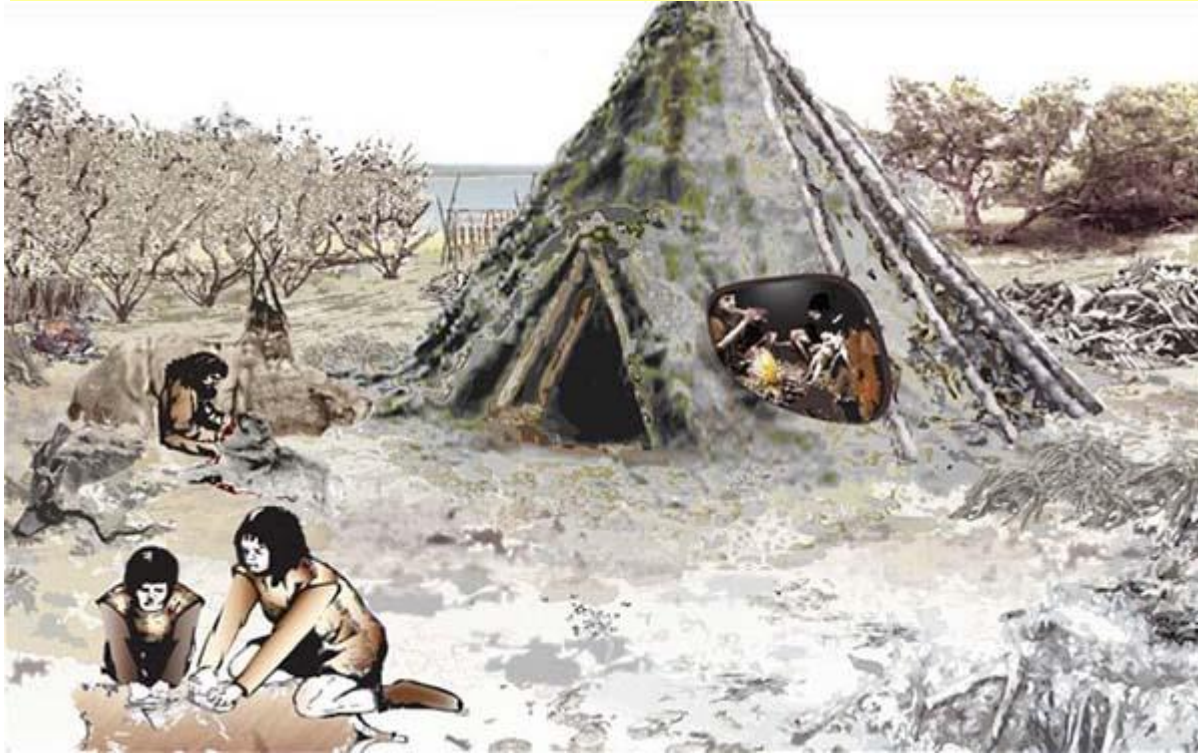


## DESIGN

WHAT ARE THE OBLIGATIONS?



## ARCHITECTURE = SHELTER & SECURITY



Man started building to 'secure' himself and today...



The same buildings are being used as weapons of mass destruction

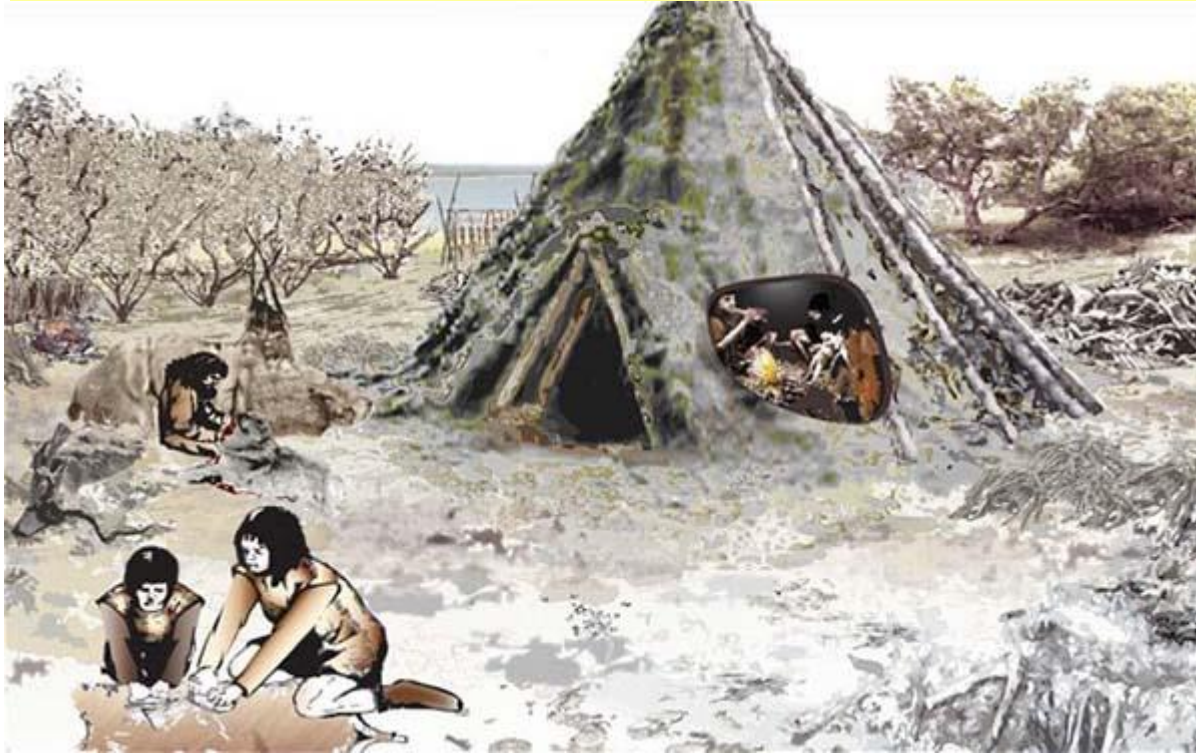
## DESIGN

WHAT ARE THE OBLIGATIONS?





WHAT ARE THE OBLIGATIONS?



## **Life safety** and reduction of losses to property

- A reduction of loss of lives
- failed buildings or its parts.
- nature's uncertainties (seismic, wind etc.).
- Minimization of losses.

## **Statutory requirements**

- Mandatory stipulations:
- marketing attraction
- lifestyle benefit.

## **Efficiency and Ergonomy**

- budget and tradeoffs
- Reduce militaristization
- Embedded security

## **Crime prevention & Social engineering:**

- infrastructural imperative
- precursor to investments.
- social engineering and governance.



# DESIGN & SECURITY

AN AGE OLD RELATIONSHIP





# DESIGN & SECURITY

EXTREME RESPONSE





# DESIGN & SECURITY

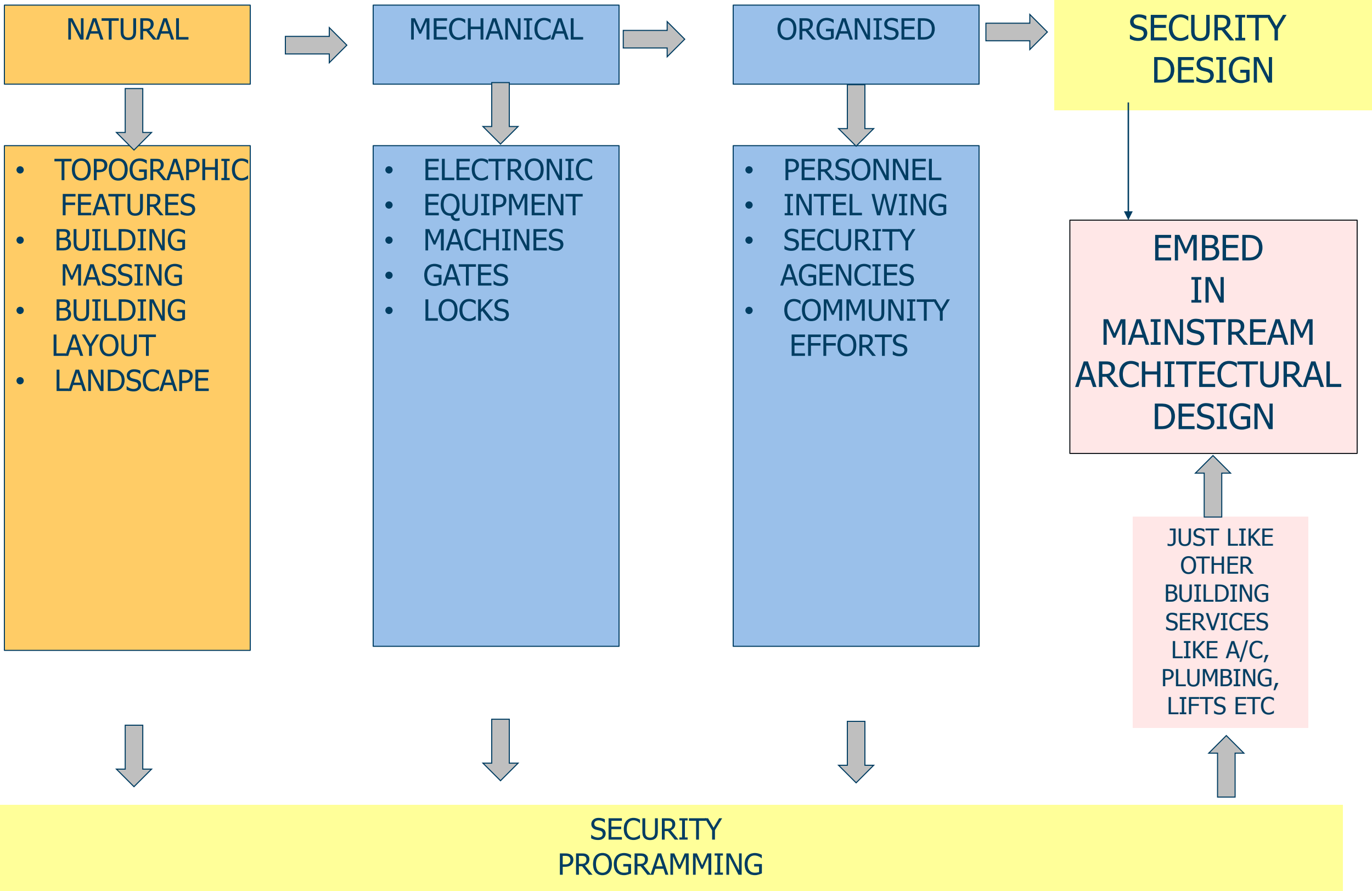
## SENSIBLE SECURITY





FORMS OF SECURITY

SECURITY OBLIGATION





PERIMETER SECURITY

ACCESS CONTROL

STAND-OFF DISTANCE

VEHICULAR ROAD & PARKING

BASEMENTS & PARKING

SURVEILLANCE

EFFECTIVE BUILDING LAYOUT

HAZARDOUS DEBRIS

STRUCTURAL HARDENING

MEP DESIGN

MASS NOTIFICATION

GARBAGE



THERE ARE SO MANY COMPONENTS OF PHYSICAL SECURITY IN ANY BUILDING AND YET THERE IS SO MUCH MORE THAT WE CAN ACHIEVE THROUGH DESIGN



PERIMETER SECURITY

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*These small stools of street furniture are also acting as bollards*





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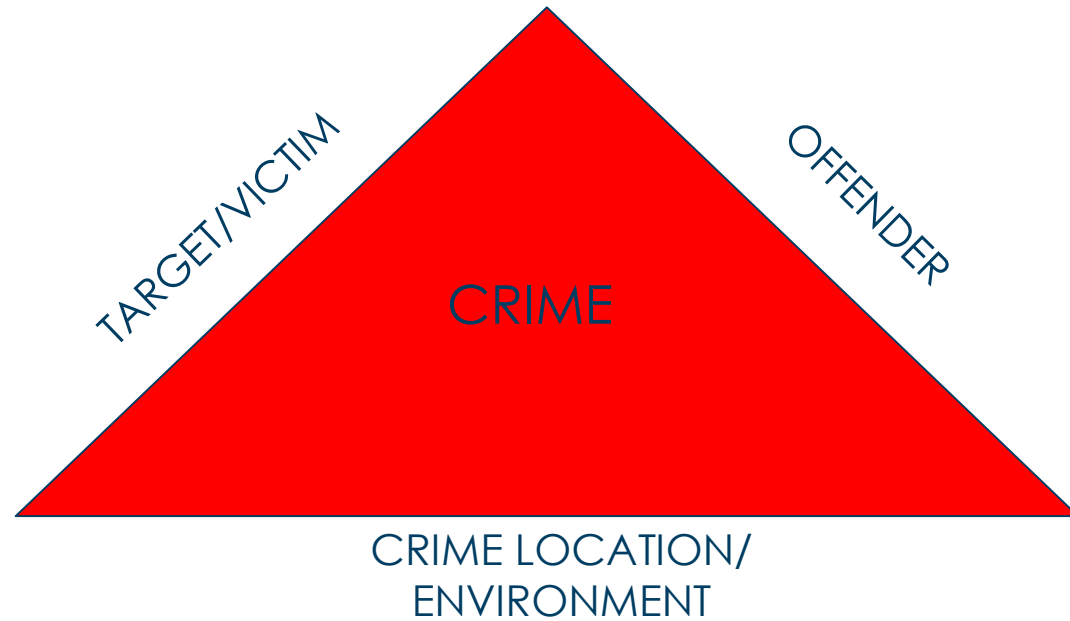
*These huge letters outside the stadium are actually meant as crash barriers*





*These huge letters outside the stadium are actually meant as crash barriers  
Outside the Emirates Stadium, London*



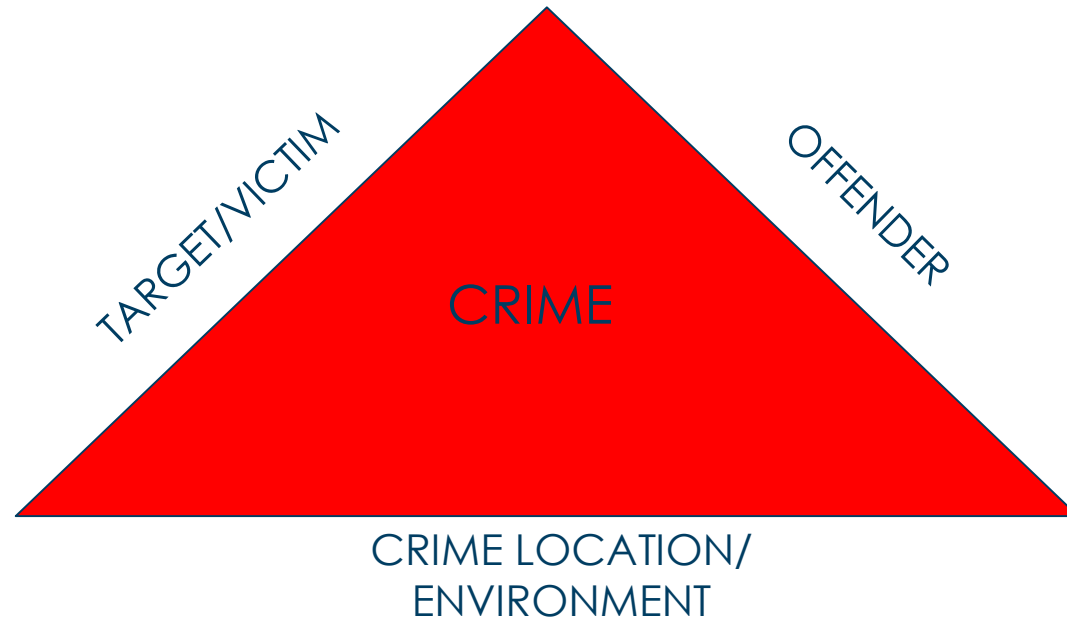


## CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN:

- DESIGN INFLUENCES BEHAVIOUR
- PHYSICAL-SPATIAL QUALITY'S IMPACT ON LIKELIHOOD OF CRIME
- 'DENY' THE OPPORTUNITY
- CRIME  $\propto$  ARCHITECTURAL QUALITY

...a multidisciplinary approach to deterring criminal behavior through environmental design. its strategy relies on ability to influence offender decisions that precede criminal acts.





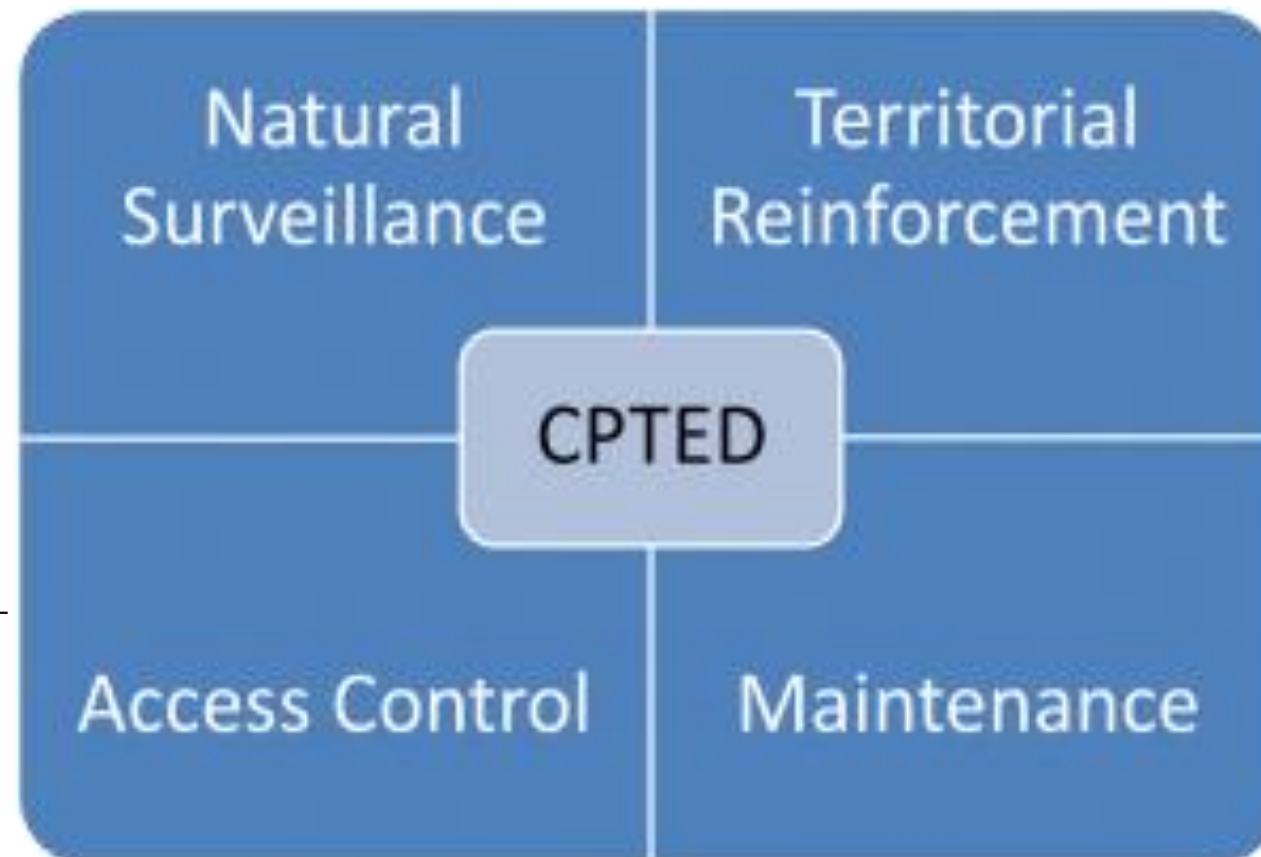
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MAXIMISE VISIBILITY : DDD  
FOSTER POSITIVE SOCIAL  
INTERACTION

LAYER TO LAYER ALSO  
NO ACCESS DESPITE VISIBILITY  
LEAST EQUIPMENT/PERSONNEL



NON-PHYSICAL DELINEATION  
OWNERSHIP  
INTRUSION

NO CONCEALMENT  
NO OBSTRUCTION  
LIGHTING – TOO LITTLE/MUCH



# GREEN BUILDINGS

## A PARALLEL

1. STARTED WITH WINDOW A/C'S

2. MASSING & ORIENTATION

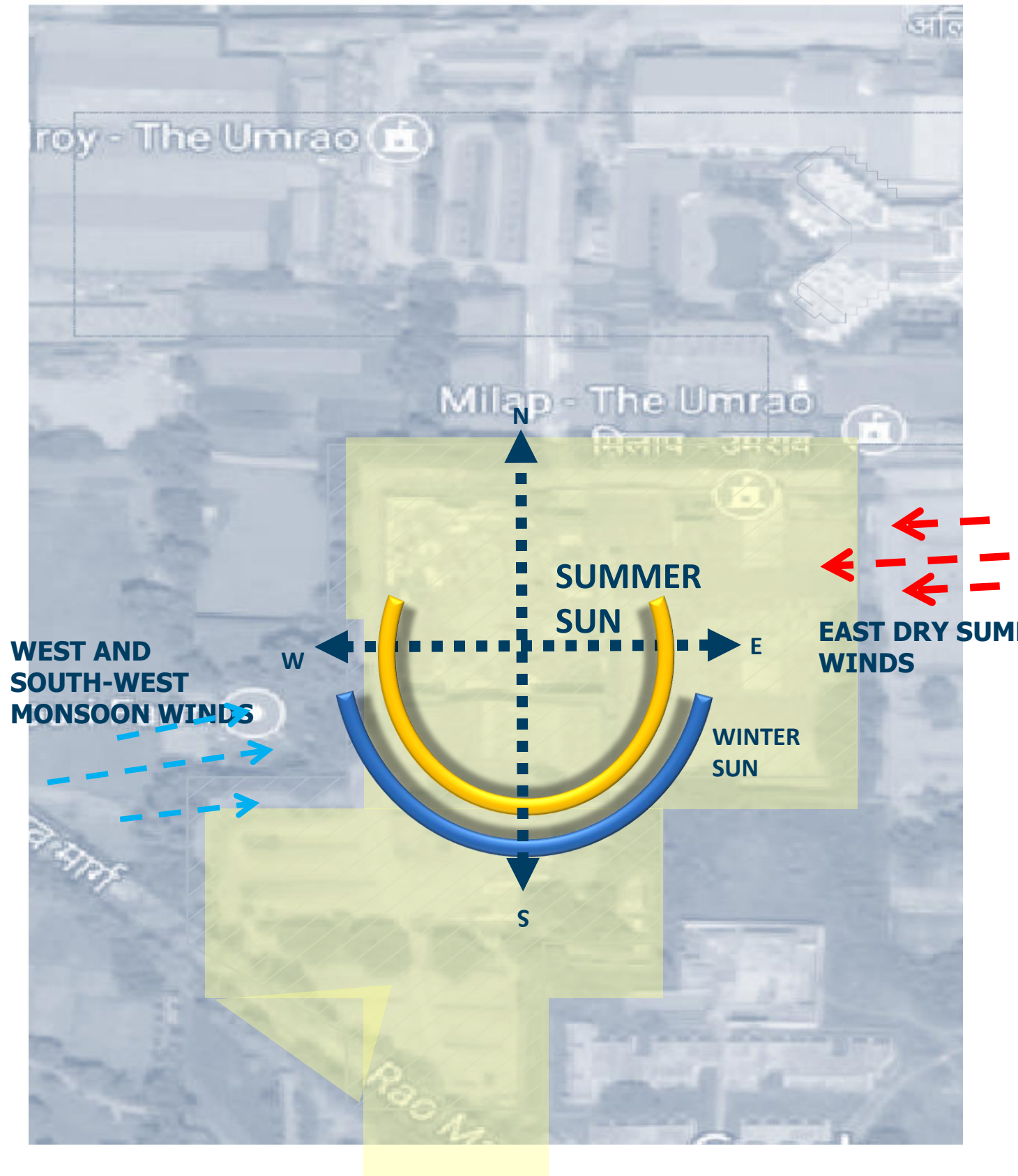
3. COMPLEX AC SYSTEMS

4. SOLAR PASSIVE ARCHITECTURE

5. EMBODIED ENERGY

6. ENERGY EFFICIENCY & CONSERVATION

7. GREEN RATING & CERTIFICATION





# GREEN BUILDINGS

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THROUGH DESIGN &  
INTEGRATION

# SECURITY

A BUILDING SERVICE

- 1. STARTED WITH SIMPLE DOORS & GATES
- 2. BUILDING PERIMETER & STRATEGIES
- 3. COMPLEX SECURITY DEVICES & GUARDS
- 4. CPTED & HARDENING: PASSIVE SECURITY
- 5. EMBEDDED SECURITY
- 6. RESILIENCE
- 7. INTEGRATED SECURITY





## 1. NATURAL SECURITY

PERMANENT  
INCORRUPTIBLE  
PERPETUAL  
HIGH RESILIENCE

## 2. MASSING & ORIENTATION

**INITIAL COSTS** MAYBE MARGINALLY HIGHER

**RUNNING COSTS** LEAST OR NO IMPACT

## 3. SITE SELECTION & LAYOUT

## 4. MATERIAL SELECTION

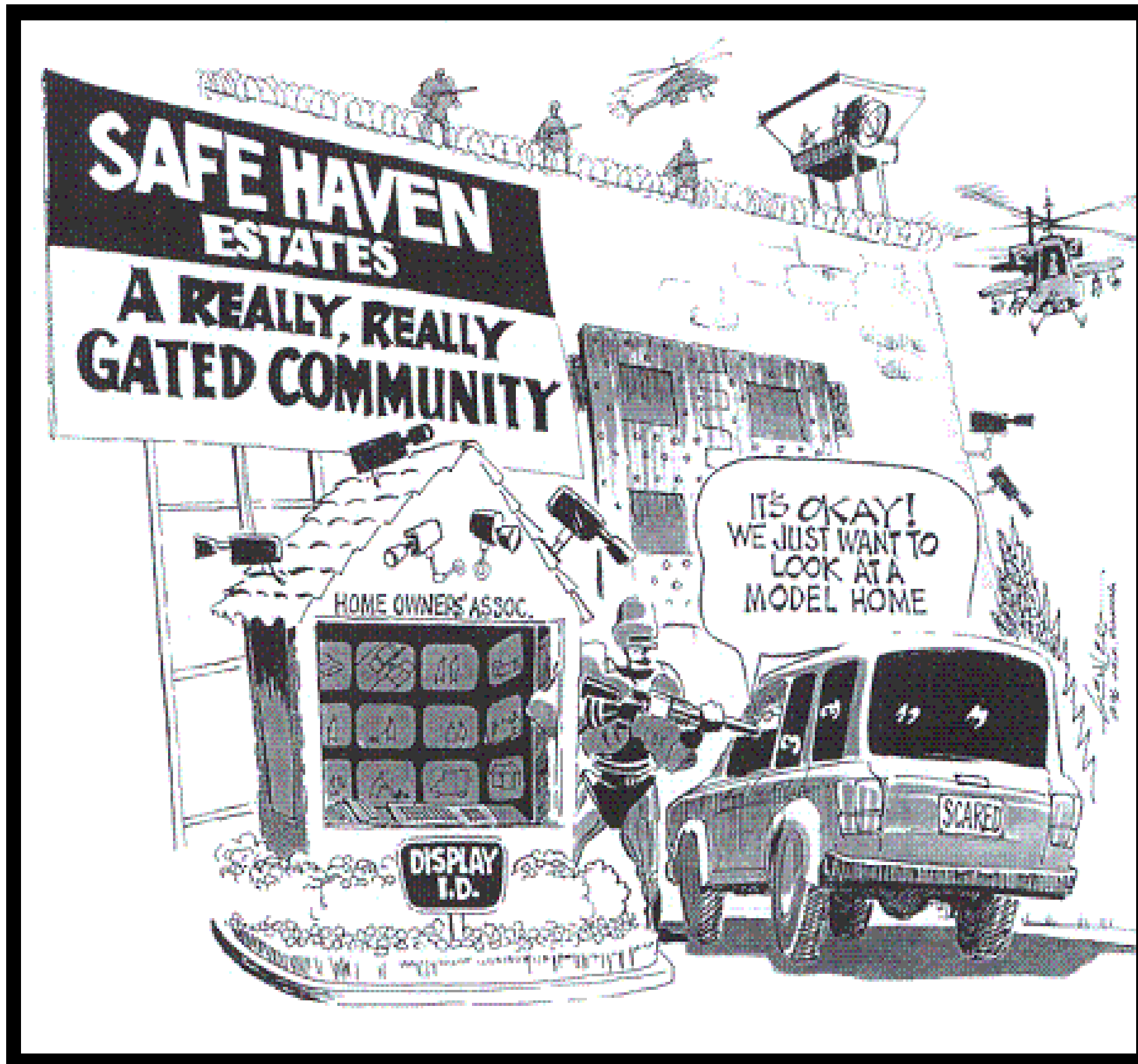
UNOBTRUSIVE  
COVERT  
LEAST PERCEPTIBILITY  
BEST AESTHETICS  
SEAMLESS

## 5. DESIGNED PERCEPTIONS

DESIGNED RESPONSE  
TARGETED PSYCHO-SOCIAL MANIPULATION FOR AMBIENCE BENEFITS



THANK YOU



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Visiting faculty at SPA, & Vastukala Academy, New Delhi, India

- PIONEER in the field of '**Security through Architectural Design**'
- Practicing architect and doctoral scholar under my supervision
- Author of many papers in India and overseas.
- Affiliated to the International CPTED association,  
just presented a paper in their conference at Calgary a month ago and in the  
process of setting up their Indian chapter.
- Architect advisor to security associations like the SWI ( Security Watch India), IES ( Indian Eye Security)
- **The BRIDGE between the worlds of Architectural Design & Security**



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THANK YOU