



Office Building & Retail  
Community Center  
Family Life Center



Medical Complex

# Smart ways

# toward

# smart

# city

# development



Mulberry Grove Residence

Whizdom Coff

Town Centre

5 Star Boutique Hotel



Forestias Forest



Mulberry Grove Condo

Residence

The Aspen Tree Residences



High Rise Condo II



Six Senses Residence



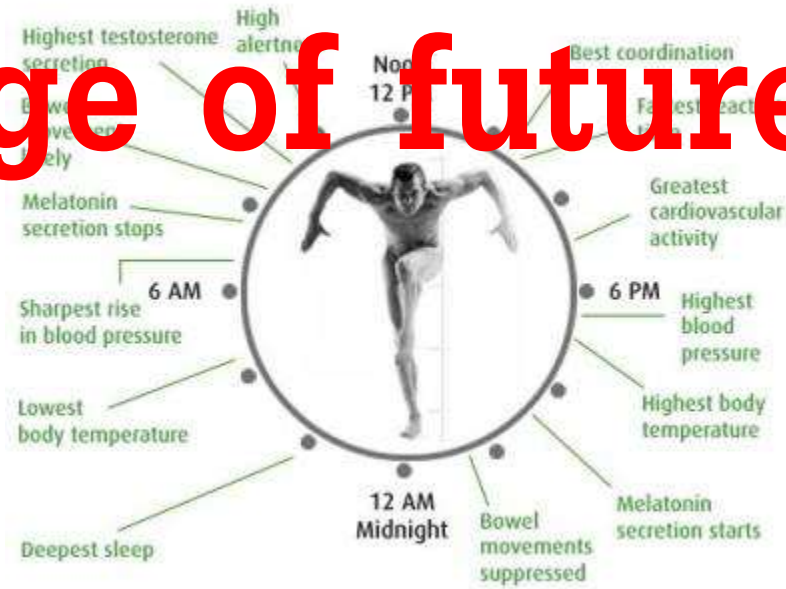
# Emergence of Vertical city





# Emergence of future city

**Circadian well-being**



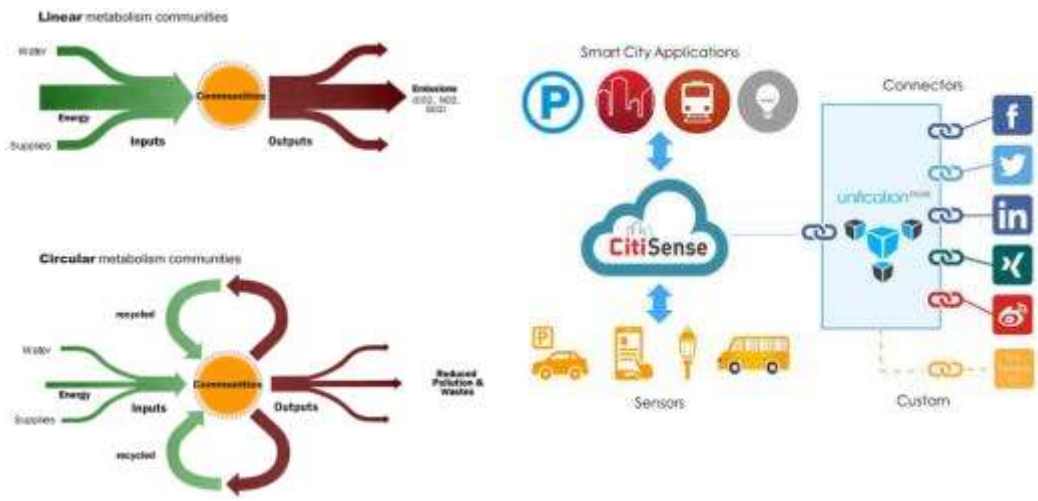
**Consolidated urbanization**

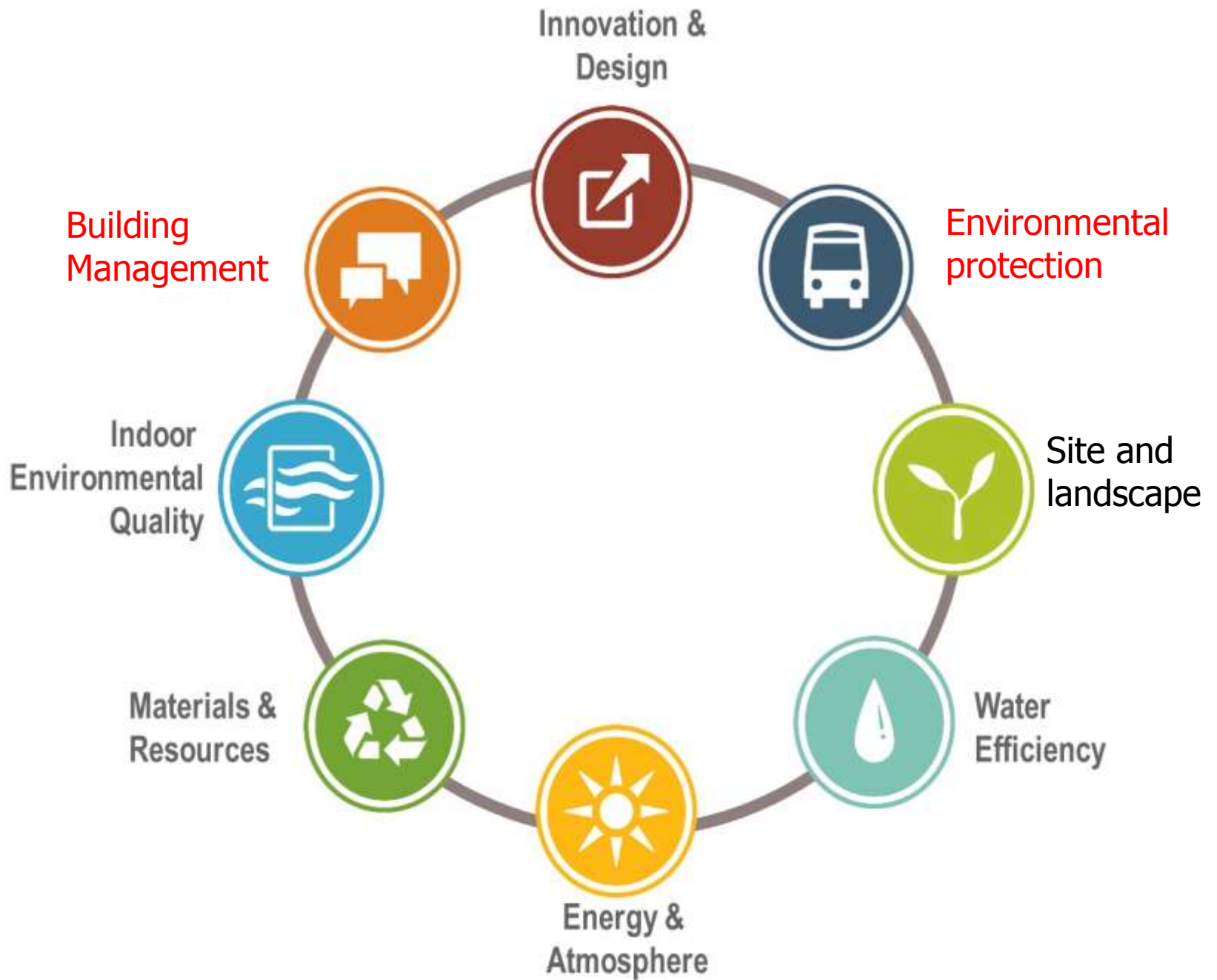
# Smart city criteria

1. SMART Energy
2. SMART Mobility
3. SMART Community
4. SMART Environment
5. SMART Economy
6. SMART Building
7. SMART Governance



## Self contained neighborhood







# WHIZDOM-101-มิชชั่นสู่ต้นแบบ สู่มือเมืองอัจฉริยะ Smart City



THANSETTAKIJ  
MULTIMEDIA



Application

# Application/ cost reduction by shared facilities/infrastructure



<https://www.youtube.com/watch?v=qgod3FHP6KA>

SAAN

SoA+ 

 King Mongkut's  
University of  
Technology  
Thailand



# Samui low carbon town

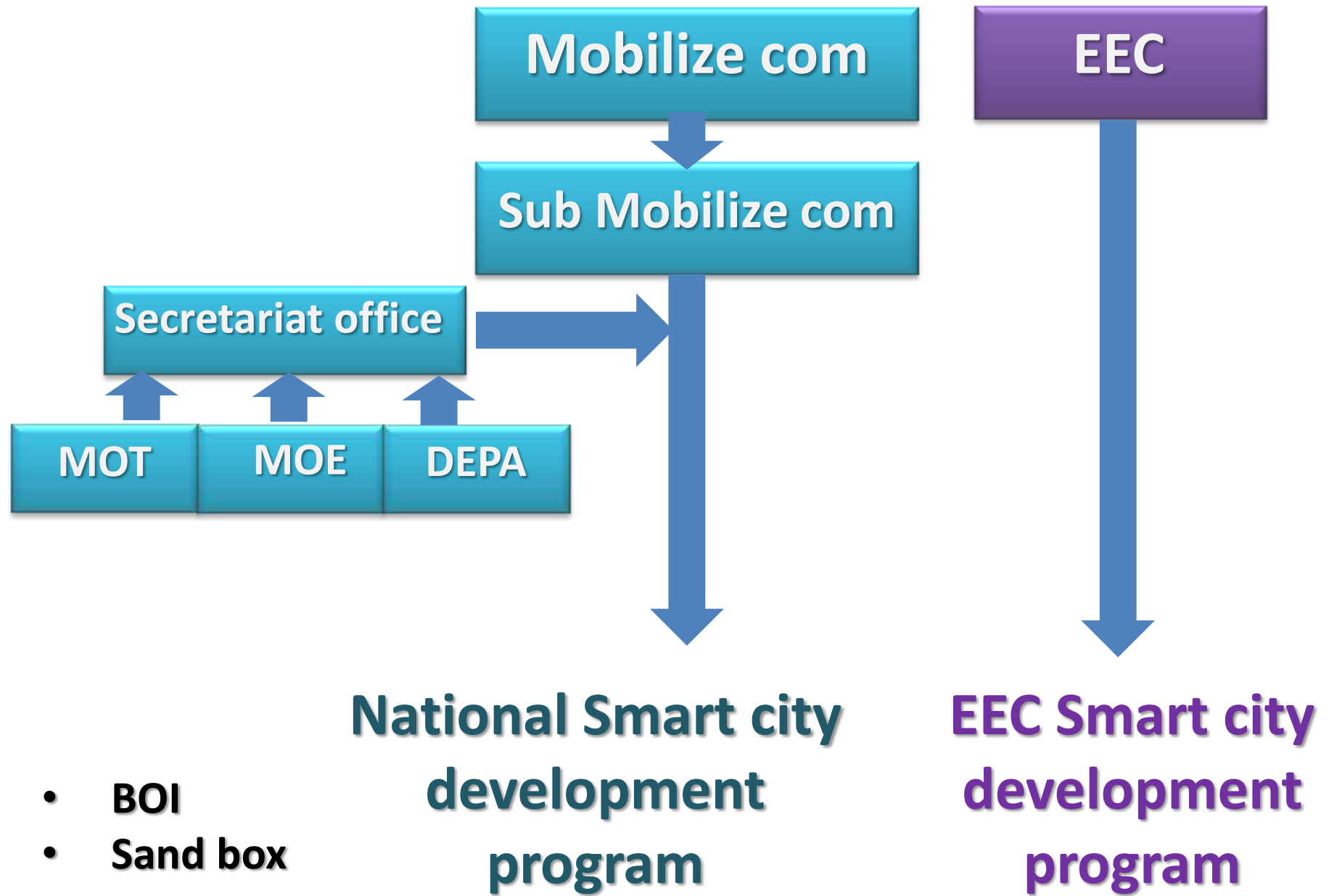




# Smart city projects



- Chulalongkorn U
- Thammasart U
- Nida U
- Chiangmai city
- Konkan city
- Phuket city
- Rayong city
- Chaceongsao city
- Cholburi city
- Amata Industrial estate
- Bangsue TOD
- Makkasan TOD
- Total 77 cities in 5 years





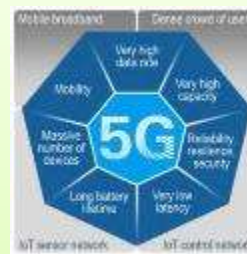
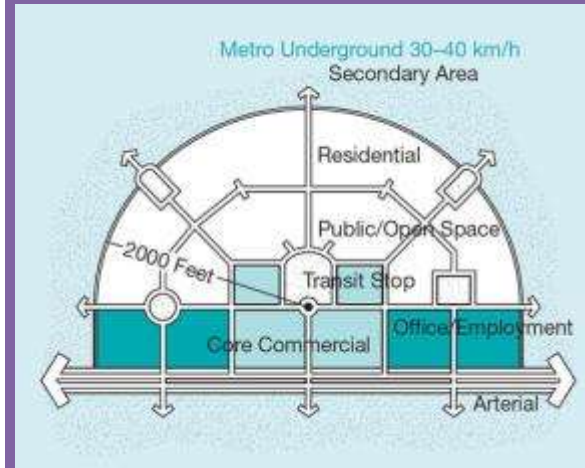
# Green building

1. Building management
2. Site and landscape
3. Water conservation
4. Energy / Atmosphere
5. Material/ Resources
6. Indoor environmental quality
7. Environmental protection
8. Green innovation

# Smart City

1. SMART Energy
2. SMART Mobility
3. SMART Community
4. SMART Environment
5. SMART Economy
6. SMART Building
7. SMART Governance

# TOD



# Environment

1. Energy intensity
2. Carbon reduction
3. Zero waste
4. Net zero energy
5. Heat island effect reduction
6. Green space
7. Water management
8. Water retention
9. Pollution control



# Society

1. Wellness for all
2. Inter generation
3. Work places
4. Smart technologies
5. E-society
6. Education
7. Disaster prevention
8. Safety and security



# Economy

1. Productivity/GDP
2. Asset appreciation
3. E-commerce
4. Utility earning
5. Start up
6. Regional activities
7. Value chain
8. Innovative economy





# The Forestias

DT Campus

An aerial architectural rendering of a campus named 'The Forestias'. The scene is dominated by lush green trees and vegetation. Several modern, multi-story buildings with grey facades are scattered throughout the site. A prominent feature is a large, irregularly shaped pond or water body on the right side, surrounded by dense greenery. In the lower-left quadrant, a cluster of smaller, brown-roofed buildings is visible. A road or path runs along the bottom edge of the frame. The overall atmosphere is one of a well-integrated, green urban environment. A semi-transparent orange box with the text 'DT Campus' is overlaid on the left side of the image.



# Sustainability concept

## LIVABLE NEIGHBOURHOOD



## MATERIALS & RESOURCES



## NATURE & ANIMALS



## INNOVATIVE ENERGY SYSTEM



## HAPPINESS, HEALTH & WELL-BEING



## EDUCATION



## WATER



## ACTIVE MOBILITY & TRANSPORT





# Central utility plant

## CENTRAL UTILITIES CONCEPT



# Cool mass



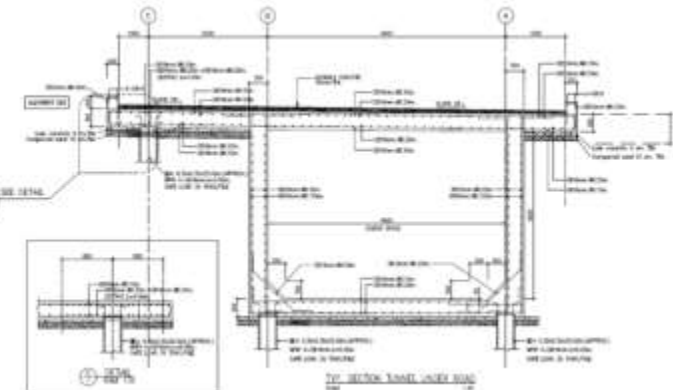
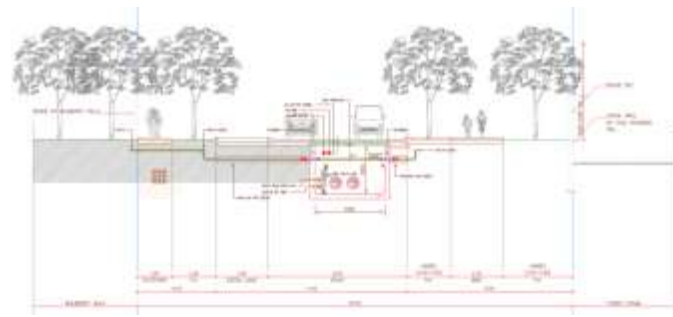
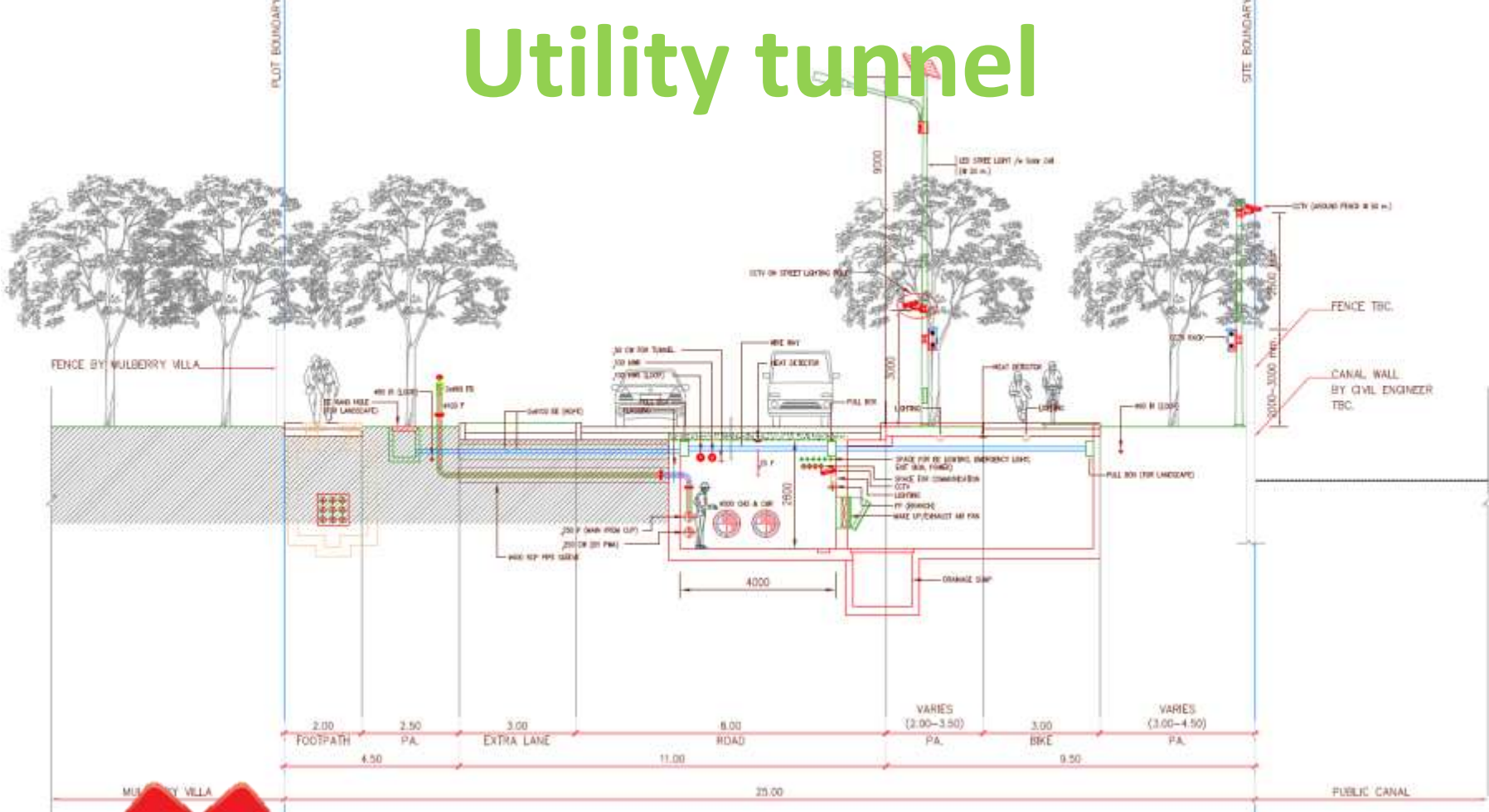
# Heated mass



This picture of Phoenix, Arizona, in the summer shows a variety of conventional pavements that reached temperatures up to 150°F (67°C).



# Utility tunnel



# Waste water treatment

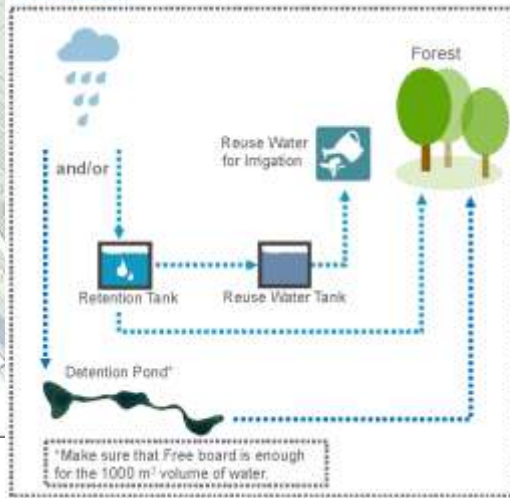


## Mulberry Grove Condos Sustainability Masterplan Requirements



Reference: Sustainability Framework 2012, 2013, 2015

## Stormwater



## Wastewater

