# Ecological Frameworks

**Sean O'Malley** Managing Principal Laguna Beach



### the playing field

Sustainability is the capacity to endure; to continue; to adapt.

it is not the strongest of the species that survive, nor the most intelligent that survives. it is the one that is most **adaptable** to change.

**Charles Darwin** 

### integration

GILDÍ

## "If there is a magic on this planet, it is contained in water...

Its substance reaches everywhere; it touches the past and prepares the future; it moves under the poles and wanders thinly in the heights of air. It can assume forms of exquisite perfection in a snowflake, or strip the living to a single shining bone cast up by the sea".

-Loren Eiseley

# Big Beautiful Integrated

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River Forest Island Changsha, China

Fidelity Investments Regional Campus Westlake, Texas





Regional Planning Shunde New City,k (72 SqKm.) Shunde, China

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#### WATER SYSTEM



#### GREEN SYSTEM



#### TRANSPORTATION



### Shunde, China



# greenmachine water-basedapproach







December							5.8 days
November							5.6
October							6.5
September							13
August							16.4
July							16.2
June							20
May							18.7
April							15.1
March							14.2
February							10.7
January							8
	0	05	10	15	20	2.5	

Average Number of Rainy Days // Shunde

BASED ON A 2-YEAR STORM [158.9mm/hr] Water source is from Urban Park study area

greentenaces

70% water storage

Based on a 2-Year Storm Event

davs **Average Water Retention Time** 



Lower	Wetland
Terrac	е

Elevation +1.0Depth

<<

N/A Storage

No Storage // At River Level Function Wetland

Intermediate Wetland Terrace

Elevation +1.5 Depth 150mm

Storage 298m3

Function **Remove Solids Remove Nutrients** Seasonal Wetland

Upper Wetland Terrace Elevation +1.7

Depth 300mm Storage 292m3

Function **Remove Solids Remove Nutrients** Seasonal Wetland

Water Quality Channel

Park Plaza

Elevation +2.7 to +1.9

Depth 300mm

Storage No Storage //

**Flow Through** Channel

Function **Remove Solids Remove Nutrients Riparian Wetland** 

Street Level

Elevation +3.0

Function **Passive Recreation** 

**Active Recreation** Vehicular Circulation

Function Shade **Carbon Reduction** 

**Passive Recreation Active Recreation Pedestrian Circulation** 

Elevation

+2.8

### urban**park**







wildlifepark









South City Center South City Central Canal South Transit Center High Tech & University







Island Residential

Shunfeng Mountain

South City Central Canal



# Multimodal transit**station** 2019 12 . 1 放 畅





### Meanderingecologies urbancorridors

Ecological Area Plan

Ecological Sensitivity River







### Rugao Master Plan nantongchina

## Water Quality Diagram Untreated Water Marina Shallow Marsh (Pathogens) Treated Water Forebay Deep Marsh Biofilter Berm Aeration Shallow Marsh Deep Marsh (Heavy Metals) Polishing Micropool

### Water Quality Diagram

MIL





### Buffalo Bayou Houston, Texas

- FRANC DURAN





# Concretebayou

35mile corridor
















The California Delta

and the second s

**River Islands** Lathrop, California Philip







Jeffrey Open Space Trail Irvine, California

### Woodbury Irvine, California

River Forest Island

### The **Xiang** River The mother river of **Changsha**



### The Crowded City Changsha, 7 million people



## **River** of **Islands**

15 islands under threat of **seasonal flooding**, **erosion**, and loss of **habitat** 

# FERGETER EGGE

# The Rhythm of Nature









# **River Shapes the Island**





# Sensitive **Grading**

Maximize carrying capacity through flood season







# Gradient Landscape - Bevation defines plant community









# Trail System

### Trail System

Vehicular: 2,400 m Forest Walk: 7,600 m Bicycle Trail: 7,600 m Boardwalk: 5,530 m



## Build the Island













# South Wetland


### A pilot island project with an ecological approach

Inter attaining one of the

### Embracing the River Landform shaped to accept seasonal flooding







### **Restore** River Ecology Native forest and wetland planting

ATTORNEY Louis - Ju









## Reconnect People to the River

















# An Escape from the City





### Conclusion

### Integrated Culturally responsive Build upon strength of site