

我的生涯我自主

學習、參與及實踐——從土木水利工程案例探索

2021.02.02 @ 德光中學

郭品含

國立宜蘭大學土木工程學系助理教授



Education

Ph.D.

Department of Hydraulic and Ocean Engineering, National Cheng Kung University (2015)

- Dissertation Title: Water Management Considering Ecosystem Services at Budai Salt Pan Wetland

M.S.

Department of Civil Engineering, National Taiwan University (2008)

- Thesis Title: On Optimal Design of Treatment Detention Wetland

B.S.

Department of Hydraulic and Ocean Engineering, National Cheng Kung University (2006)

High School

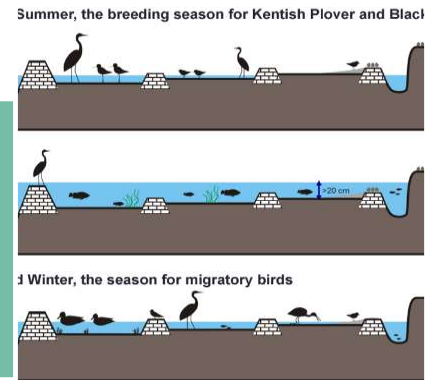


Te-Kuang Senior Girls' High School (1996-2002)

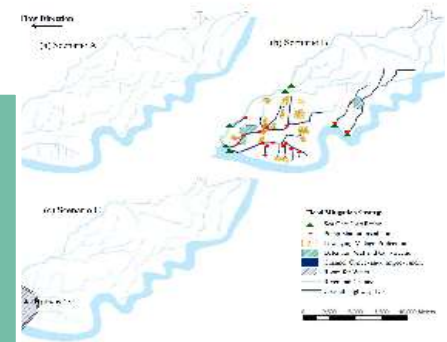
Research Interests

The interaction between hydraulic characteristics and environmental factors

Wetland Management and Restoration



Flood Management



Constructed Wetland



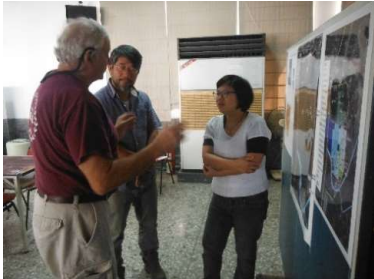
public Engagement with Science



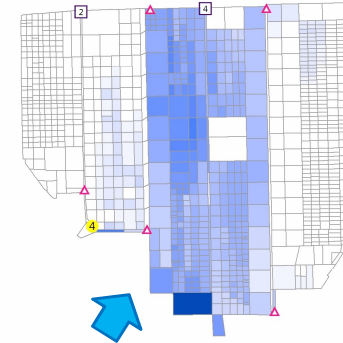
■ On-site Monitoring and Experiments



■ Stakeholder Involvement



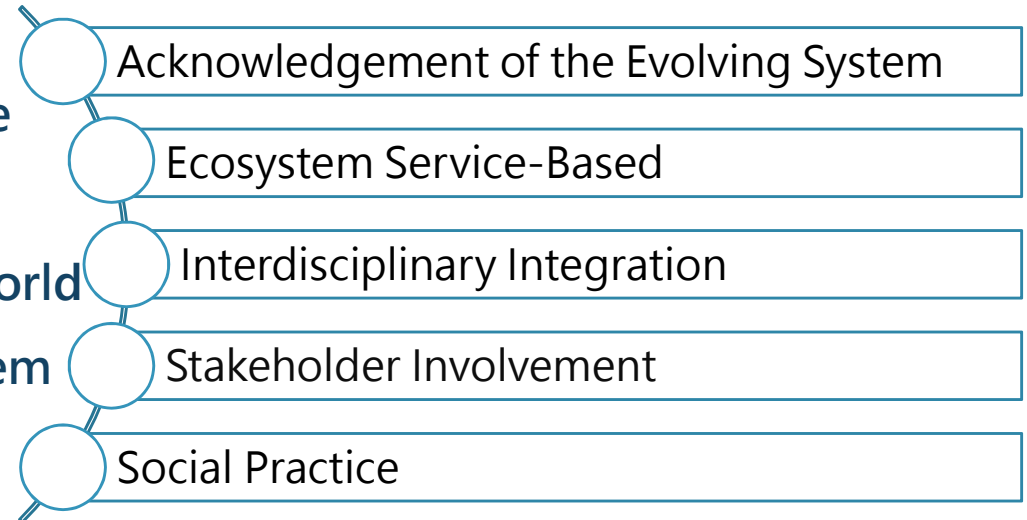
■ Numerical Model



T:030 hr

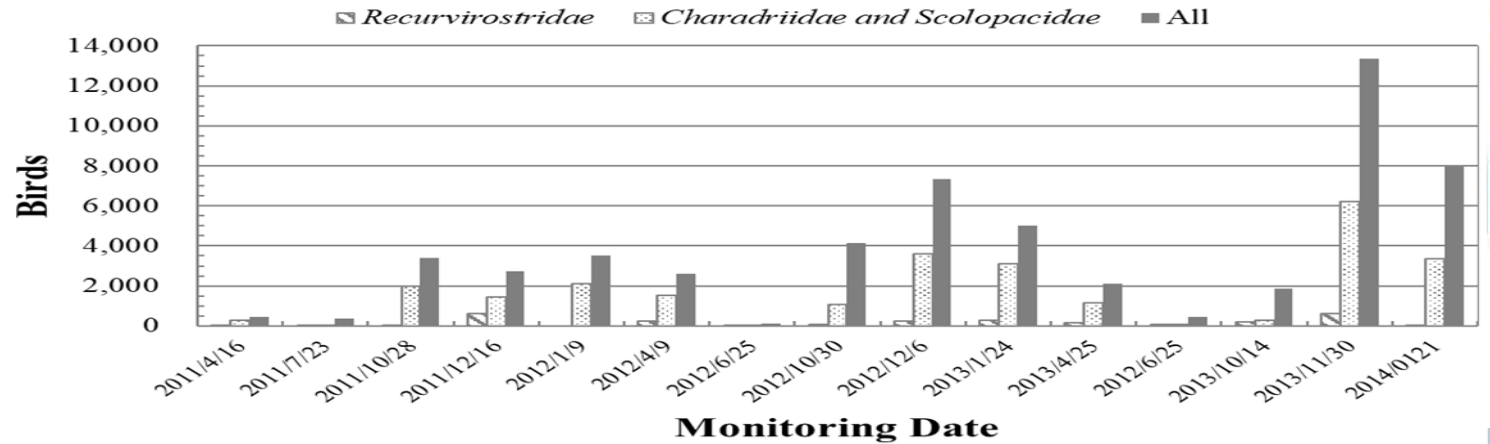
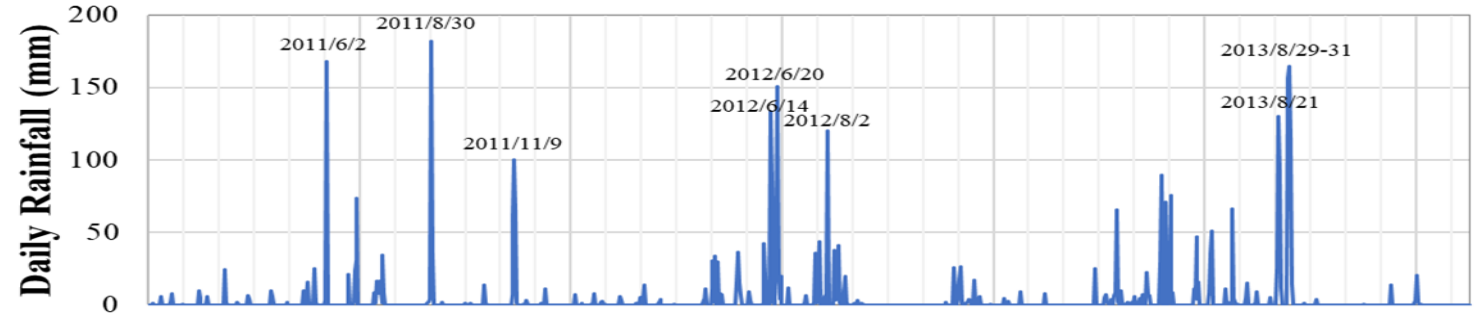


Solve
the
Real-World
Problem

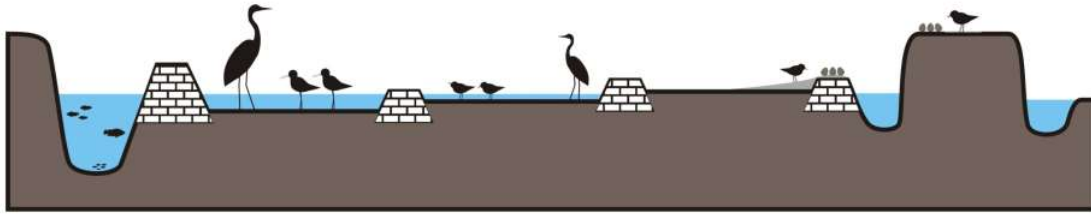


Wetland Management and Restoration

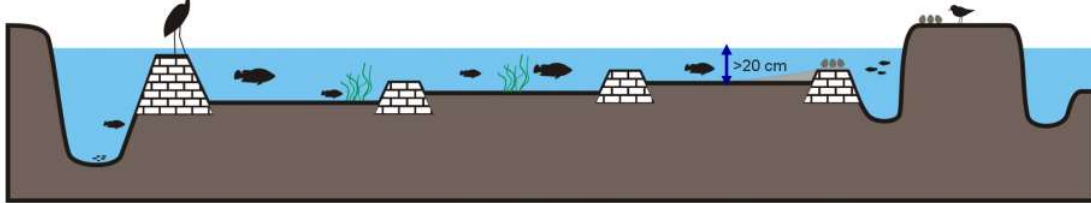
Budai Salt Pan Wetland



Spring and Summer, the breeding season for Kentish Plover and Black-Winged Stil



Flood



Autumn and Winter, the season for migratory birds



Water Depth Monitor



Flow Rate Monitor



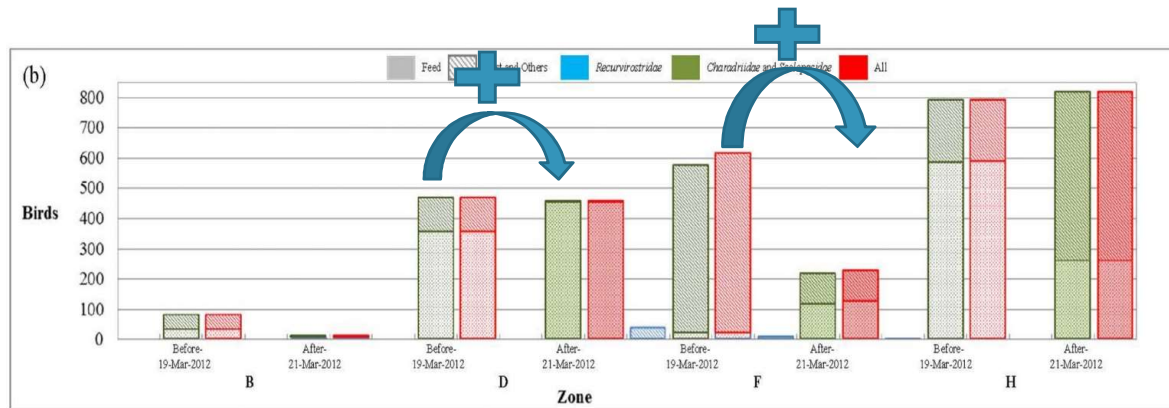
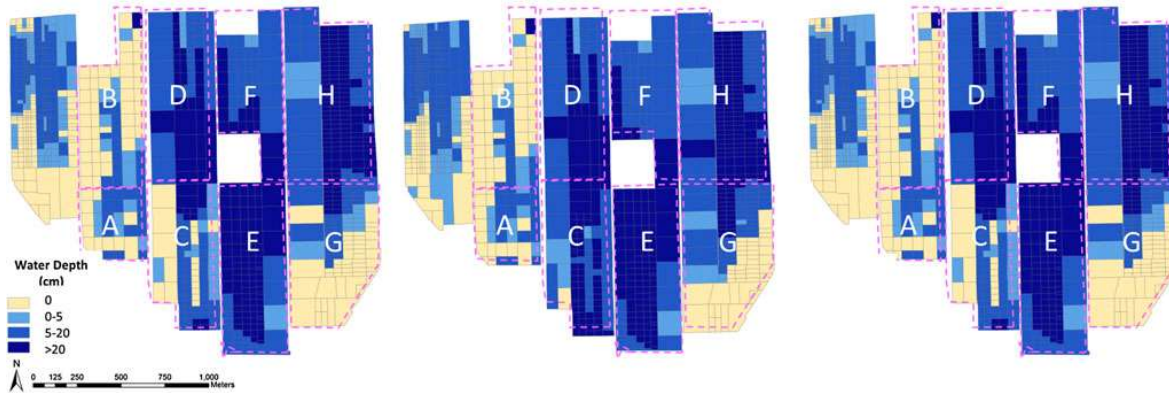
Indicator Specie Survey



(a) 9:30 AM, March 20

(b) 5:30 PM, March 20

(c) 1:00 PM, March 21



Services	Potential	Trend of Value under Water Management
Provisioning Services		
Food	○	Increased
Fresh Water	×	×
Fiber and Fuel	?	?
Biochemical	?	?
Genetic Materials	●	Increased
Regulating Services		
Climate Regulation	●	Increased
Water Regulation (Hydrological Flow)	×	×
Water Purification and Waste Treatment	●	Increased
Erosion Regulation	×	×
Natural Hazard Regulation	○	Increased
Pollination	○	Increased
Cultural Services		
Spiritual and Inspirational	●	Increased
Recreational	○	Increased
Aesthetic	●	Increased
Educational	○	Increased
Supporting Services		
Soil Formation	×	×
Nutrient Cycling	●	Increased



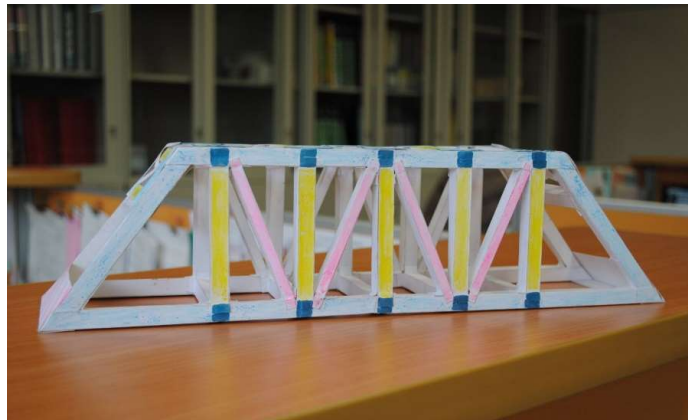
Exercise-

如果我們需要一棟新大樓



結構工程組

- 木橋結構與載重試驗
- 結構耐震設計
- 結構破壞災害評估
- 結構強度分析



大地與材料工程組

- 現地土壤性質分析與試驗
- 土壤液化潛能評估
- 營建材料配比設計
- 混凝土非破壞性檢測



水資源工程組

- 水資源及環境永續
- 水工結構物設計
- 水災害防治及管理



水災害防治及管理



都市下水道設計



水資源永續

測量及空間資訊組

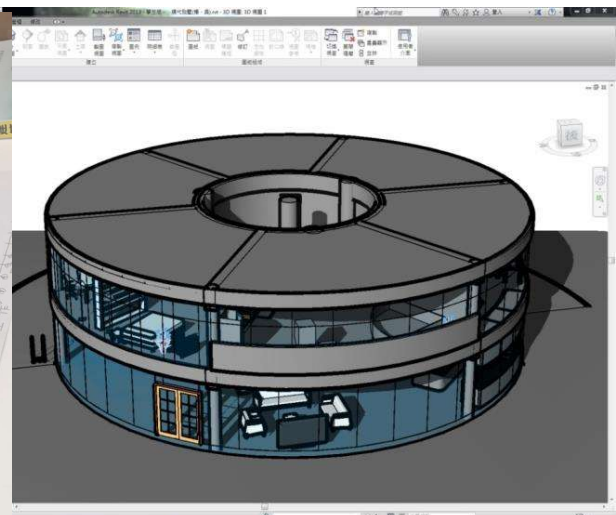
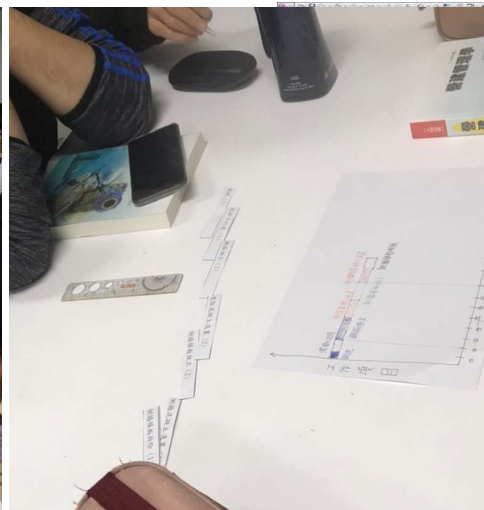
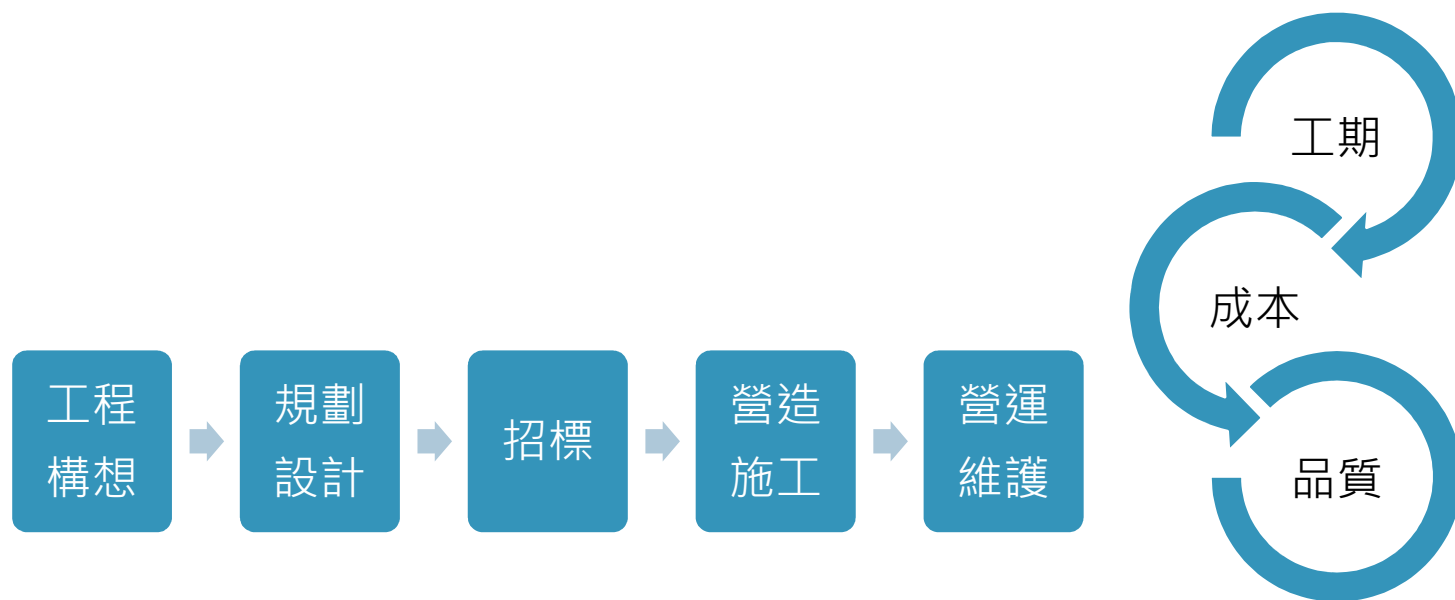
-地理資訊系統

-UAV無人機應用



工程管理

—跨領域的整合管理能力



Take Home Message

- The Role of an Academic Team

- Scientific studies
- Knowledge delivery
- Stakeholder involvement including communication, connections, promotions, cultivations, participation, and actions

~ Thank You ~
Questions? Comments?



國立宜蘭大學 土木工程學系



歡迎你加入我們

