CURRENT PROBLEMS

Current Urban Development Process

Study	Plan	Implementation

Inception and Baseline Review →

- Formulation of Planning Framework
- Evaluation and Updating
- Public Engagement

→ **Study Finalization**

Manual Assessment → Manual Data Collection & Analysis → Manual Decision Making
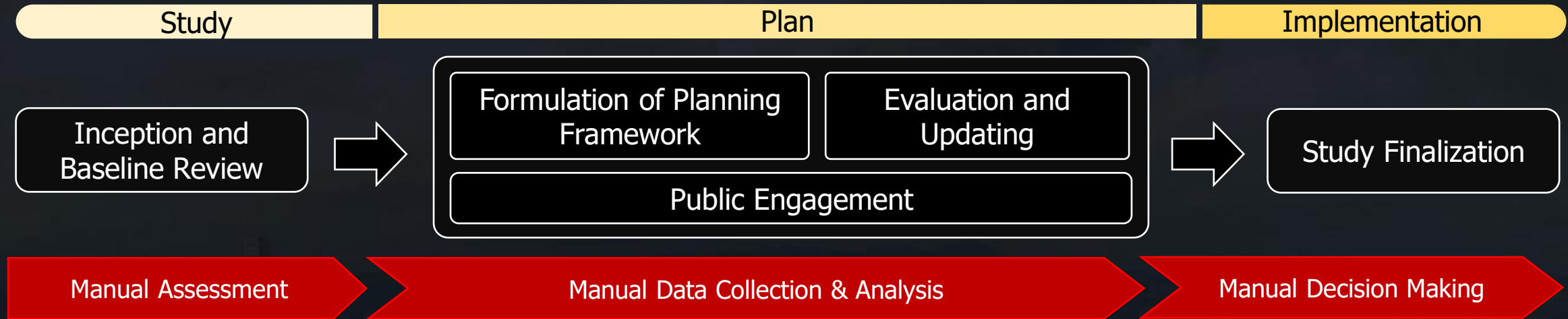
Induced Problems

Environment
- Inadequate Insights on Prioritization
- Lack of District-based Considerations

Social
- Systemless (Urban Vibrancy)
- Unsustainable community planning

Governance
- Insufficient Public Engagement
- Time Consuming
- High Cost

— PROPOSED SOLUTIONS —

13 Department / Bureau

24 Sets of Spatial Data

Semantic Segmentation

- Evaluation of the proportion of green views and sky views at each sample points through AI

Object Detection

- Images or videos undergo object detection to evaluate the vibrancy level at each sample points

Geographic Information System

Data Extraction
- 360-degree street view image

Data Analysis
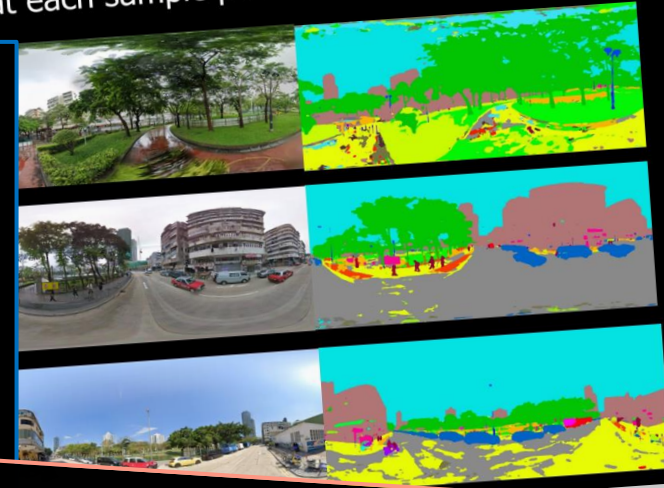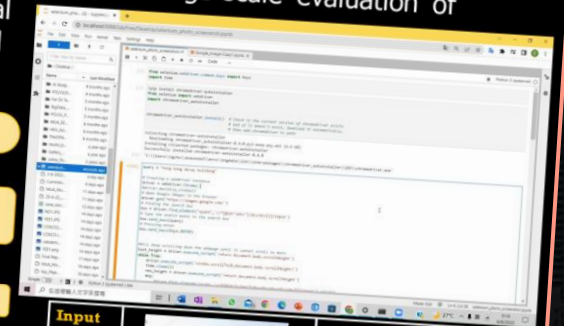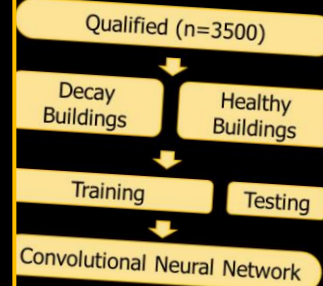- Spatial analytical techniques

Data Visualization
- Hexagonal grid maps

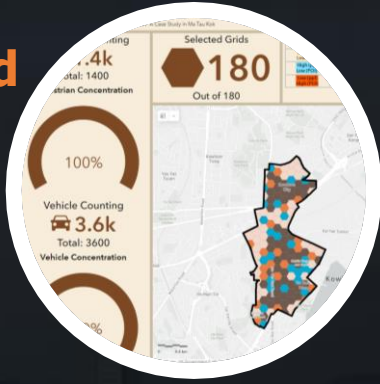## Natural Language Processing (NLP)

- Large language model (LLM) and OpenAI's gpt-3.5-turbo are used to develop an interactive virtual assistants that can carry out authentic and engaging conversations

LlamaIndex

OpenAI

Deep learning (Neural Network)

- A self-trained CV technique for large-scale evaluation of the building's physical conditions of external wall

Qualified (n=3500)

Decay Buildings

Healthy Buildings

Training

Testing

Convolutional Neural Network

Input

Output | Decay building: 26% | Decay building: 86%
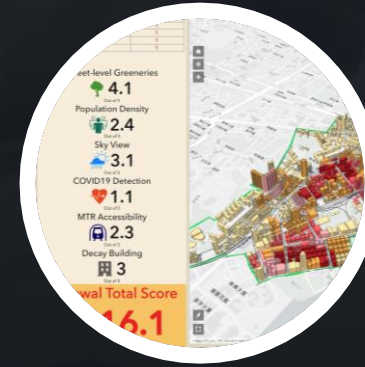
— PROPOSED SOLUTIONS —

1 URBAN VIBRANCY EVALUATION

Comprehend the Target Region

2 RENEWAL POTENTIAL SITE SEARCHING
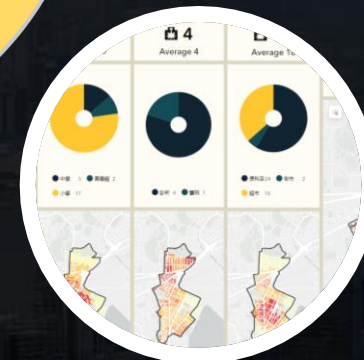
Site Searching for Urban Renewal

4 PUBLIC-GOV COLLABORATION

Public Participation for Renewal

3 TEN-MINUTE COMMUNITY PLANNING

Planning for Identified Sites

Study

Plan

Monitoring

Implementation

Public Participation

By embracing data-driven and GeoAI-based strategies, an innovative idea is to transition from a linear working pattern to a cyclical approach for urban renewal. This transformative shift, supported by advanced GeoAI and spatial data analysis, are beneficial to continuous monitoring, adaptive interventions, and informed decision-making throughout the entire renewal process

ABOUT THE PROJECT

Relevant Stakeholders

Expected Values

R&D Stage

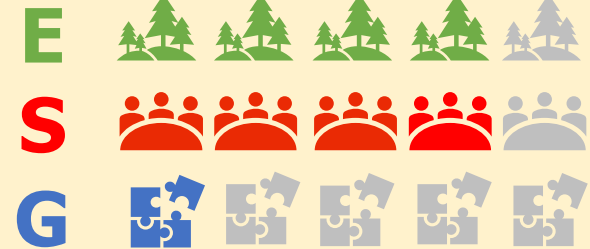| Organizations	Example
☐ Universities	香港大學 建築學院 fsa / DEPARTMENT OF BUILDING & REAL ESTATE 建築及房地產學系 INTERNATIONAL · COLLABORATION · CONSTRUCTION
☐ NGOs	規劃情報 / 本研
☐ NPOs	CSDI

Project Branding

Project Profitability

E 🌲🌲🌲🌲🌲
S 👥👥👥👥👥
G 🧩🧩🧩🧩🧩

To B

Organizations	Example
☐ Consultant Firm	ARUP / AECOM
☐ Developers	Hysan / 新世界發展有限公司 New World Development Company Limited

Project Branding

Project Profitability

E 🌲🌲🌲🌲🌲
S 👥👥👥👥👥
G 🧩🧩🧩🧩🧩

To G
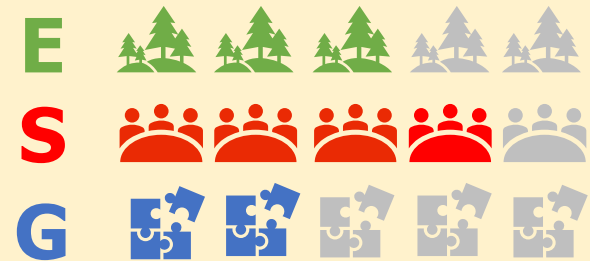
Organizations	Example
☐ Urban Renewal Authority	市區重建局 URBAN RENEWAL AUTHORITY
☐ Government B/D	規劃署 Planning Department / 運輸署 Transport Department / 地政總署 Lands Department

Project Branding

Project Profitability

E 🌲🌲🌲🌲🌲
S 👥👥👥👥👥
G 🧩🧩🧩🧩🧩