



# Data Modelling and Application of 3D Cadastre In Taiwan



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# Outline

- 1、 Introduction
- 2、 Property Registration in Taiwan
- 3、 3D Cadastral Building Modelling
- 4、 Prototype system of Application
- 5、 Conclusions

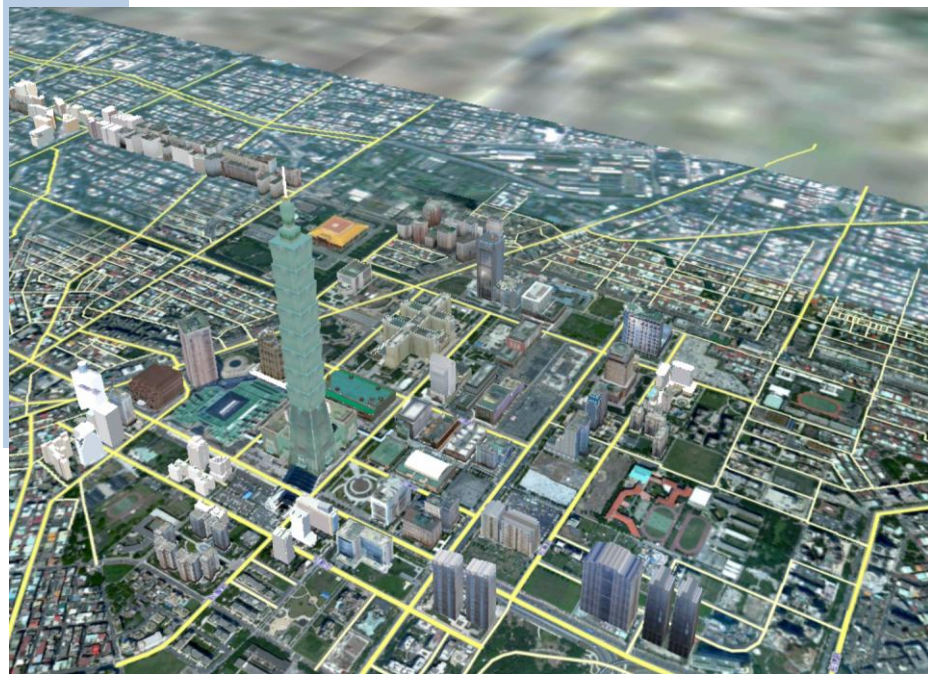




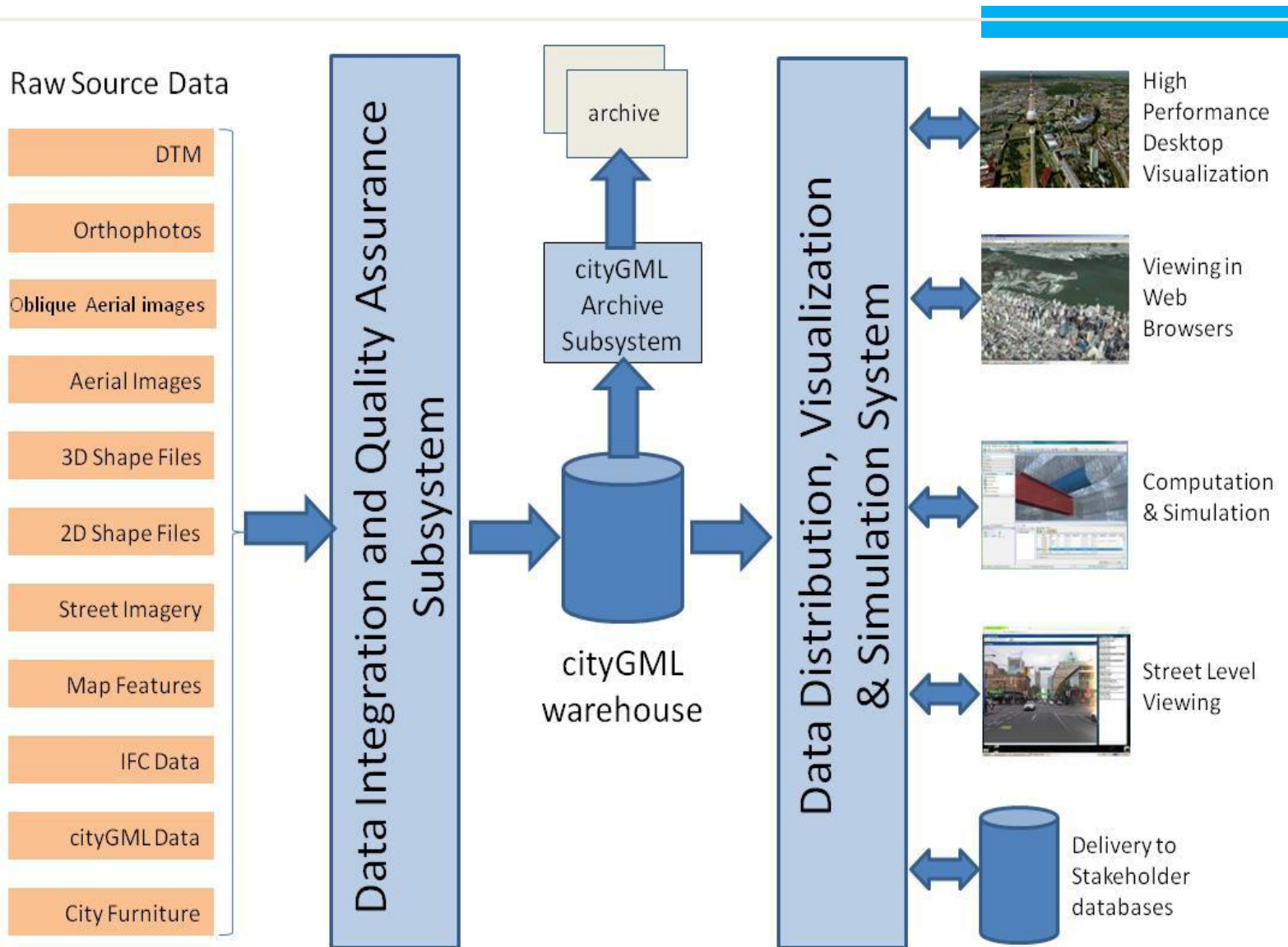
# 1、 Introduction

## 3D GIS fast growing

Everything around us is in 3D.



# 3D GIS Models typical dataflow diagram

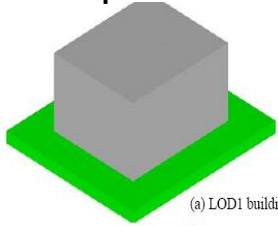




# OGC CityGML Levels Of Details for visualization

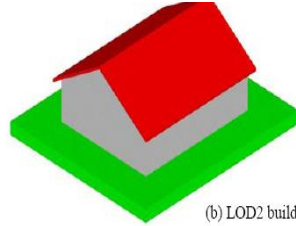
LOD1

Simple Blocks



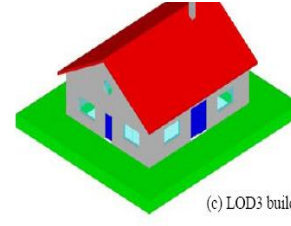
LOD2

Roof & texture



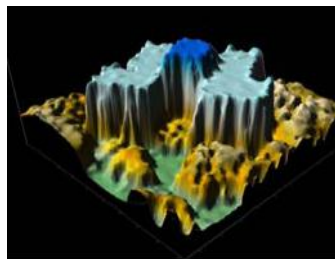
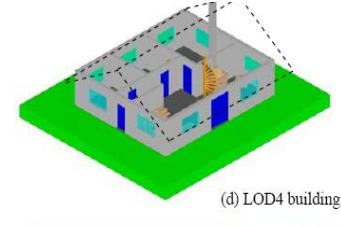
LOD3

Exterior architectures



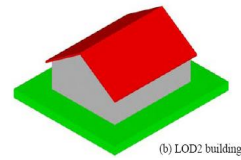
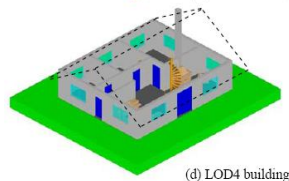
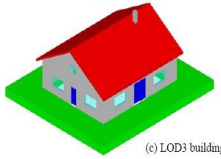
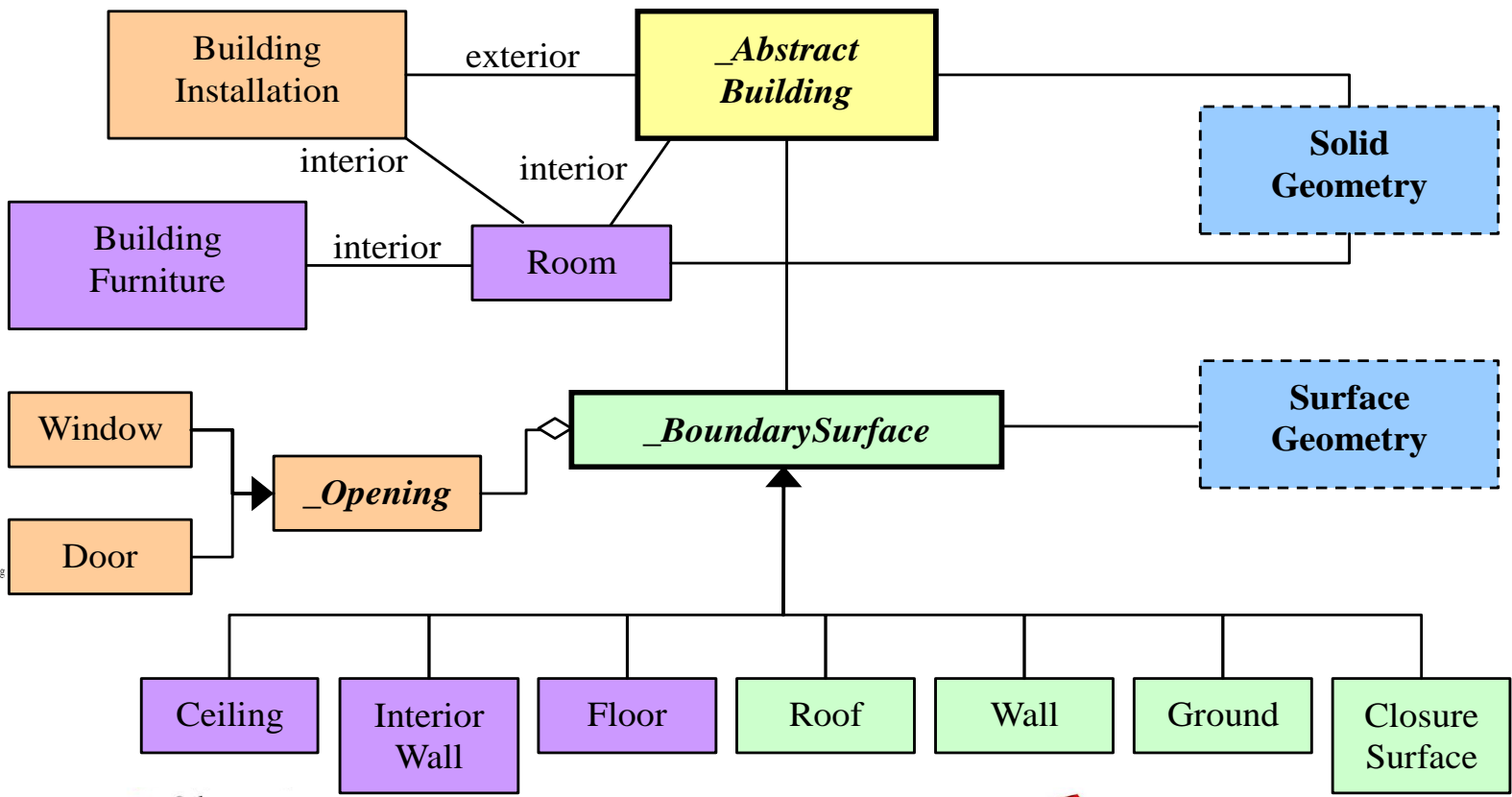
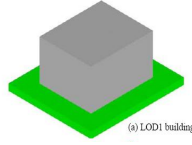
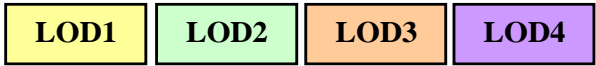
LOD4

interior architectures



Gröger et al., 2008

# OGC Design of building structure

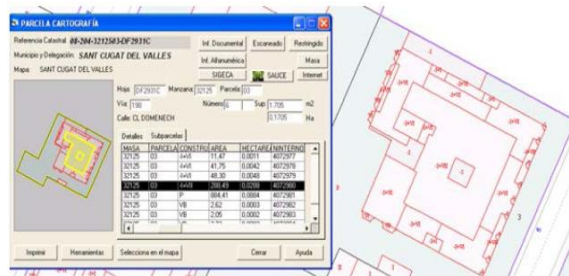


Kolbe , 2007

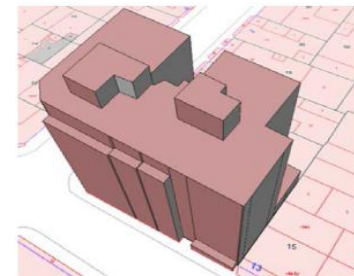


# 3D Cadastre Development Trends

- ❑ Rapid population growth drives urban densification and complicates land usage. Cities are developed towards higher and multi-functional buildings to maximize land utilization.
- ❑ 3D cadastre allows applications to capture different property rights on the vertical space such as land surface, above and under ground – this was not possible in 2D cadastre data
- ❑ City building development has raised the importance of 3D property management and digital visualization, which leads to the trends in establishing 3D cadastre data



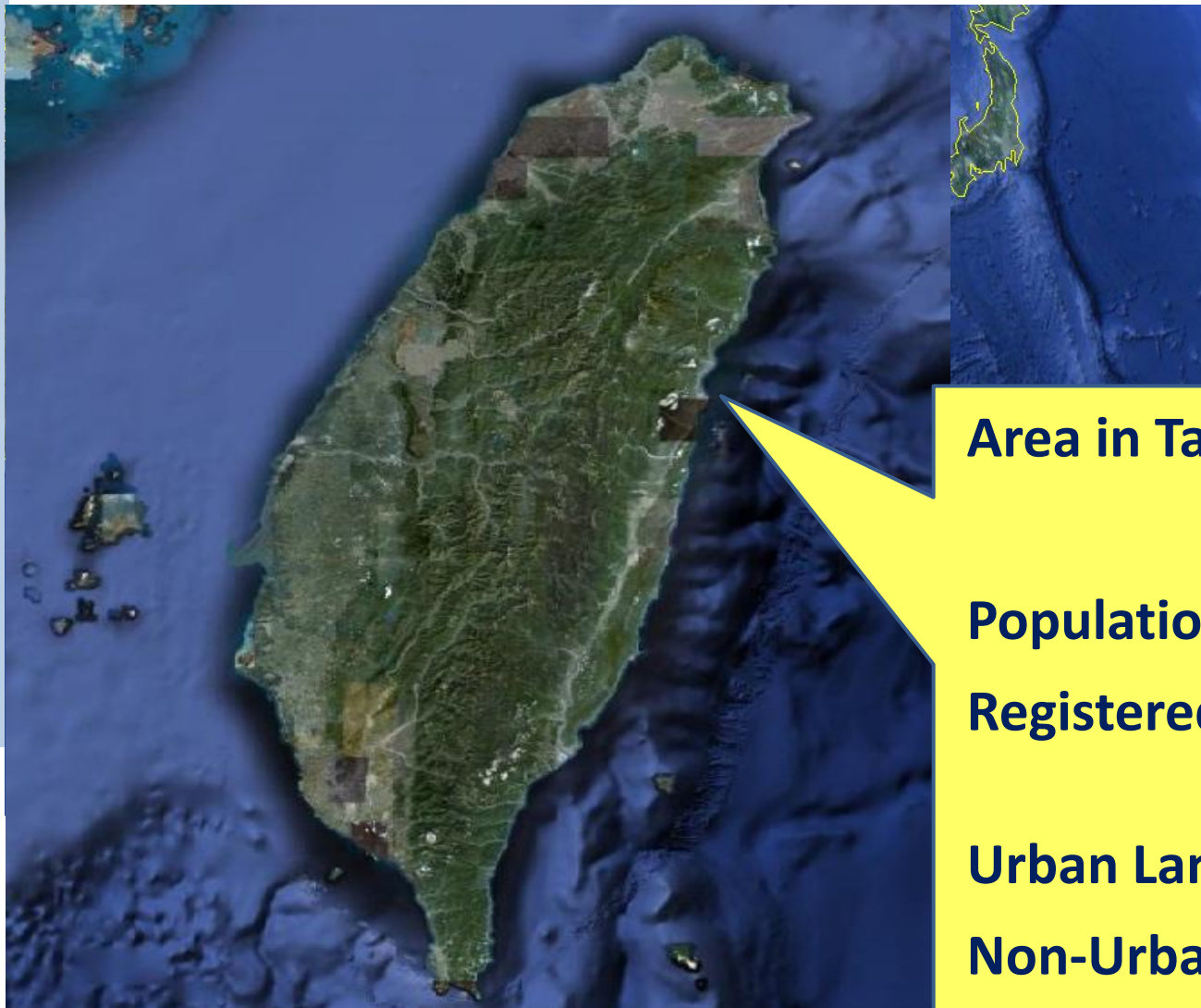
**2D Cadastre**



**3D Cadastre**



## 2、Cadastral system in Taiwan



**Area in Taiwan:**

**36,000 km<sup>2</sup>**

**Population: 23,224,000**

**Registered Land:**

**34,920km<sup>2</sup>**

**Urban Land: 6,760km<sup>2</sup>**

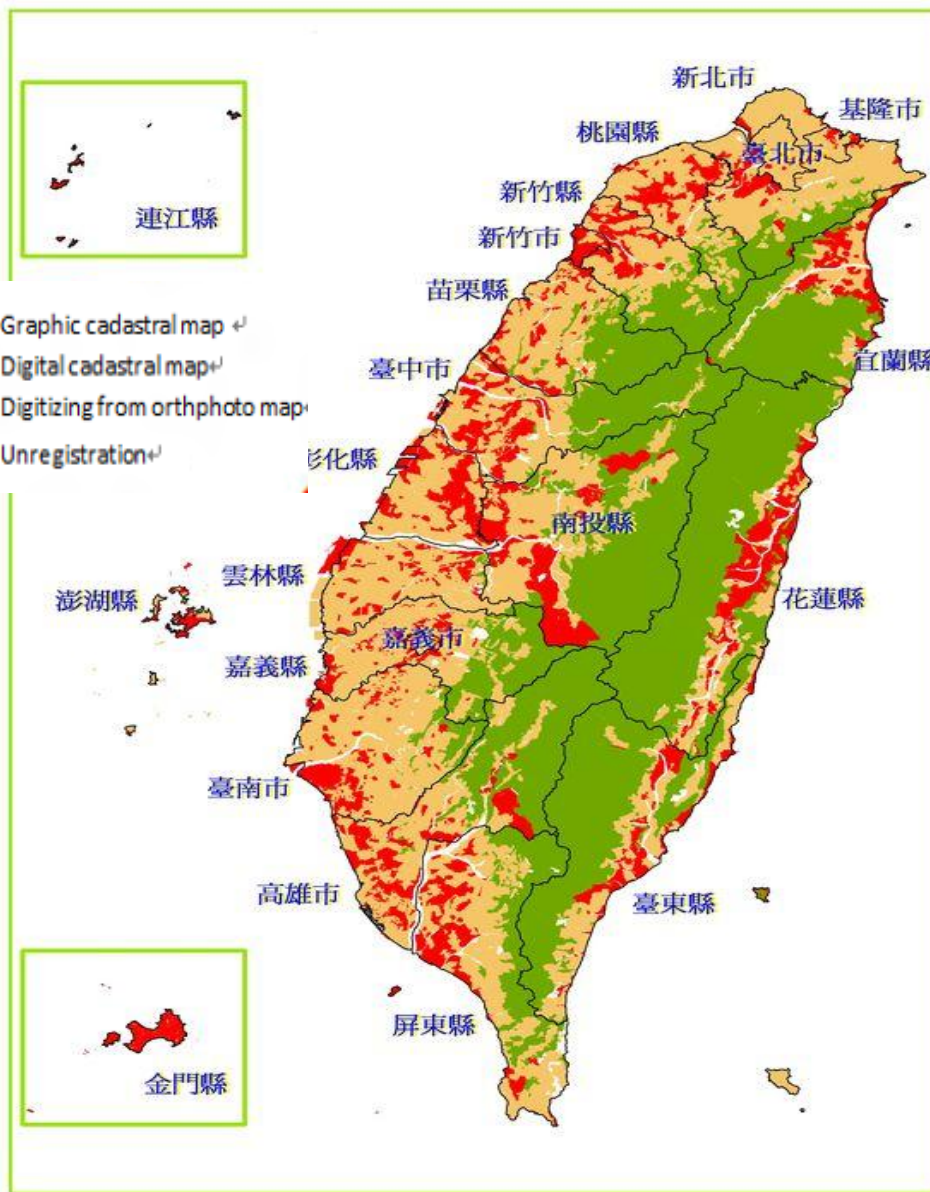
**Non-Urban Land:**

**28,160km<sup>2</sup>**

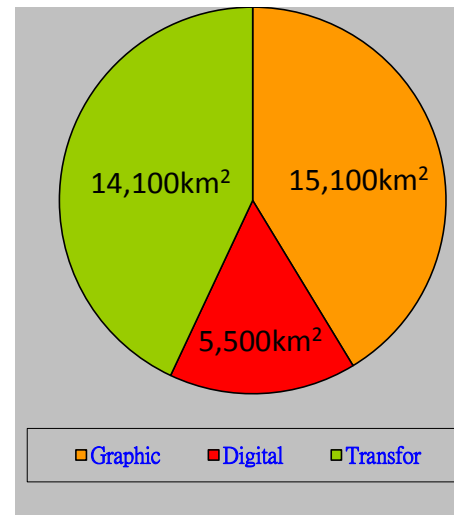




# Taiwan Cadastral Survey Status



All in digital format



Registered Land:

14,864,947 parcels

Registered Building :

7,739,089 building number

local land office: 108



# Land property registration

Land parcel data  
Parcel boundary  
Coordinate data of corners

土地標示部
+地段(小段)編號: String
+地段母號: String
+地段字號: String
+登記次序: Integer
+登記日期: TM_Primitive
+地目: 地目代碼
+等級: Integer
+面積: Double
+使用地類別: 使用地類別代碼
+公告土地價值: Integer
+公營地價: Integer

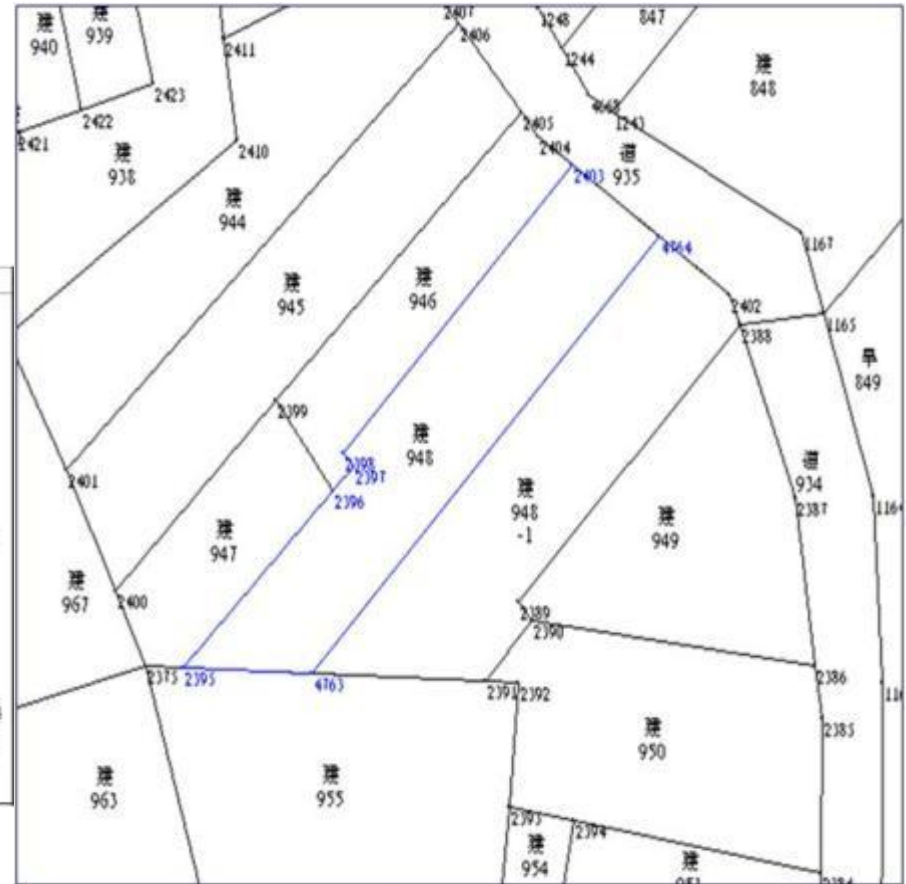
land description

土地所有權部
+地段(小段)編號: String
+地段母號: Integer
+地段字號: Integer
+登記次序: Integer
+登記日期: TM_Primitive
+登記原因: 登記原因代碼
+登記原因發生日期: TM_Primitive
+所有權人統一編號: String
+權利範圍類別: 權利範圍類別代碼
+權利範圍分母: Integer
+權利範圍分子: Integer
+權狀年期: Integer
+權狀字號: 權狀字代碼
+權狀年份: Integer
+中終地價日期: TM_Primitive
+中終地價: Integer

land ownership

土地他項權利部
+地段(小段)編號: String
+地段母號: Integer
+地段字號: Integer
+登記次序: Integer
+登記日期: TM_Primitive
+權利人統一編號: String
+登記日期: TM_Primitive
+登記原因: 登記原因代碼
+收件年期: Integer
+收件字號: 收件字代碼
+收件年份: String
+權利種類: 權利人類別
+設定權利範圍類別: 權利範圍類別代碼
+設定權利範圍應有部分分母: Integer
+設定權利範圍應有部分分子: Integer
+設定權利範圍面積: Decimal
+屆期年份: Integer
+屆期字號: String
+屆期年份: String
+權利價值類別: 權利價值代碼
+權利價值: Decimal
+債權(權利)範圍類別: 權利範圍類別代碼
+債權(權利)範圍應有部分分母: Integer
+債權(權利)範圍應有部分分子: Integer
+行權期限類別: 行權期限類別代碼
+總始日期年: Integer

other rights



Since 1990 a digital method has been used for the resurvey, and the original graphic cadastral maps have also been digitized and completed in 2007



# Cadastral map Internet service systems

地籍圖資網路便民服務系統

[使用說明](#) | [回首頁](#) | [切](#)

( <http://easymap.land.moi.gov.tw/> )

The screenshot displays the '地籍圖資網路便民服務系統' (Cadastral Map Internet Service System) interface. The main map shows a cadastral map of a residential area in Taichung City, Taiwan. The map is divided into several blocks of land parcels, each labeled with a unique parcel number. The parcels are arranged in a grid-like pattern, with some parcels highlighted in yellow. The map is bounded by '永興路' (Yongxing Road) on the left and '文心路' (Wenxin Road) on the right. The street names '文心路' and '永興路' are visible on the map. The parcel numbers include 84-5, 84-4, 84-3, 81-3, 81-2, 81-1, 81, 85-3, 85-1, 85, 87, 87-1, 88, 88-1, 89, 90, 91, 92, 92-1, 92-2, 92-3, 91-2, 91-1, 70, 65-1, 65, 72, 73, 75, 76, 77, 78, 79, 74-2, 74-1, 72-1, 105, 104, 104-1, 104-2, 104-3, 102, 107, 99-1, 99-4, 99, 99-1, 99-2, 97-1, 97-2, 97-3, 97-4, 97-5, 97-6, 97-7, 97-8, 95-1, 95-2, 34-43, 34-44, 34-45, 34-46, 34-47, 34-48, 34-49, 34-50, 36-14, 36-15, 36-16, 36-17, 36-18.

The interface includes a search panel on the left with the following elements:

- Buttons for '地籍' (Cadastral), '門牌' (Address), and '村里' (Village).
- Location selection: '臺中市' (Taichung City) with a dropdown menu, and radio buttons for '鄉鎮市區' (Township/City) and '事務所' (Office).
- Area selection: '南屯區' (Nantun District) with a dropdown menu.
- Search criteria: '選擇查詢地段' (Select search area) with a dropdown menu showing '0701 豐功段' (0701 Fenggong Section).
- Search input: '地號' (Parcel No.) with the value '75' and a '查詢' (Search) button.
- Map style options: '鳥瞰' (Aerial) and '顏色設定' (Color Setting).

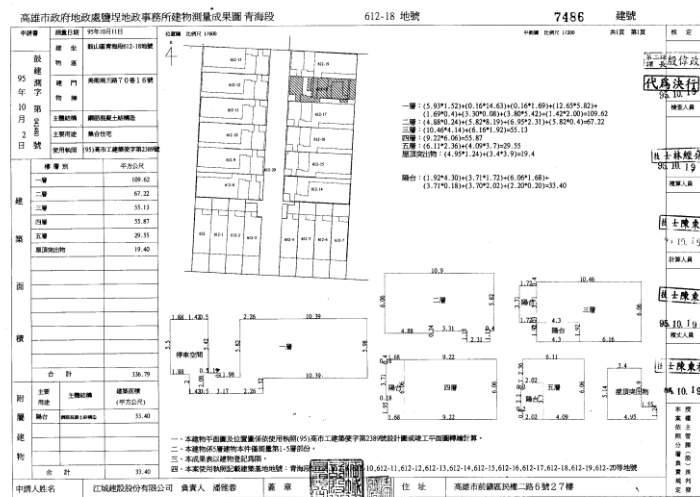
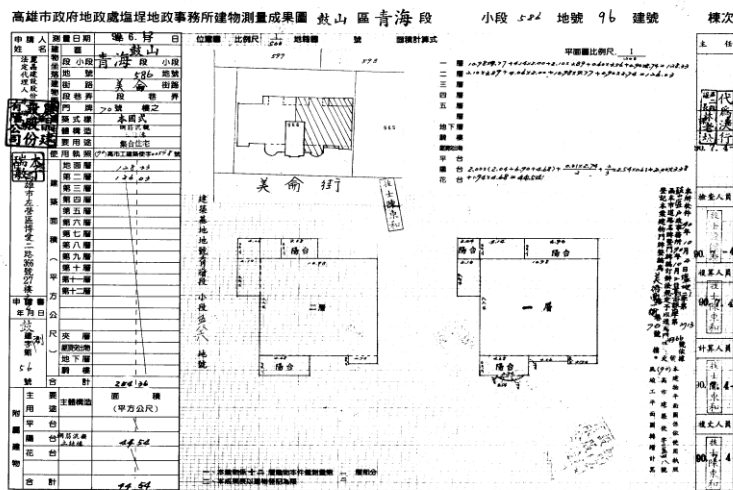
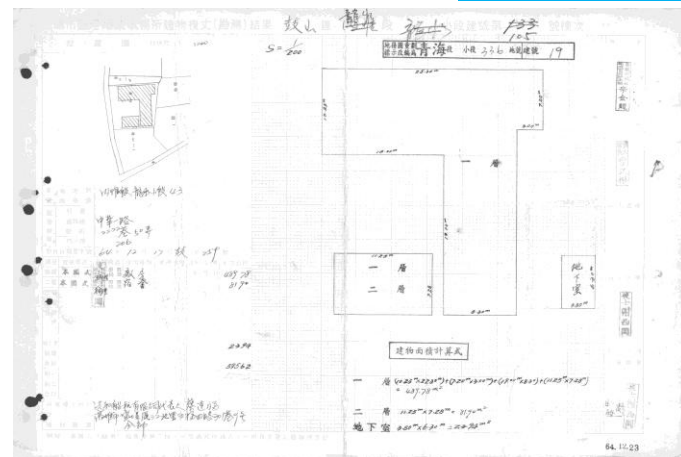
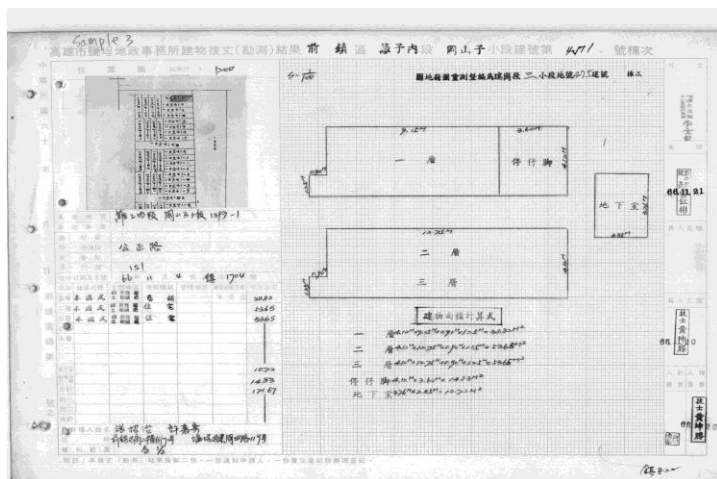
The map area includes a navigation toolbar with icons for zooming, panning, and other map controls. The map shows a grid of parcels with various numbers, and a large parcel (75) is highlighted in yellow. The map is bounded by '永興路' (Yongxing Road) on the left and '文心路' (Wenxin Road) on the right. The street names '文心路' and '永興路' are visible on the map.







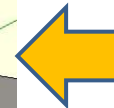
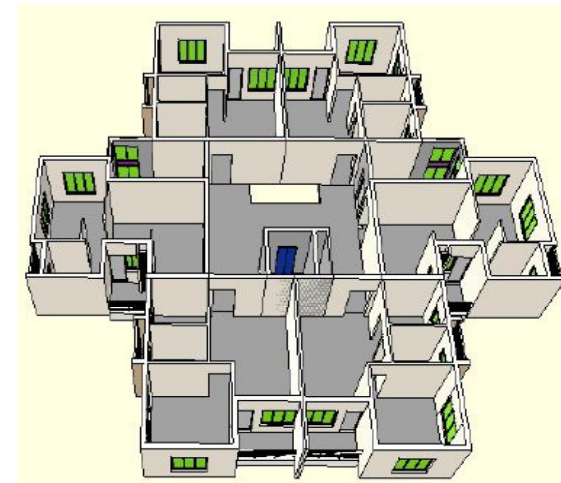
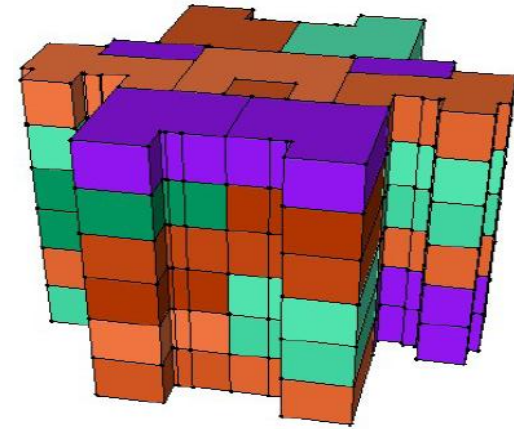
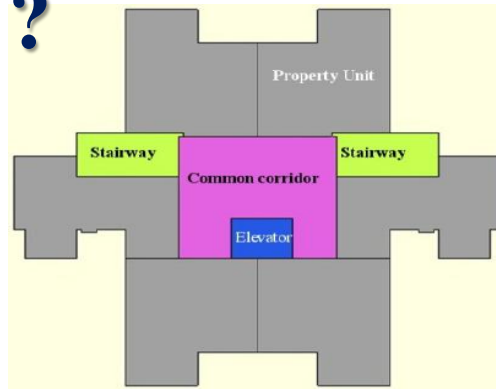
# Result map of building survey in different periods





# 3、 3D Cadastral Building Modelling

## How to Modelling ?

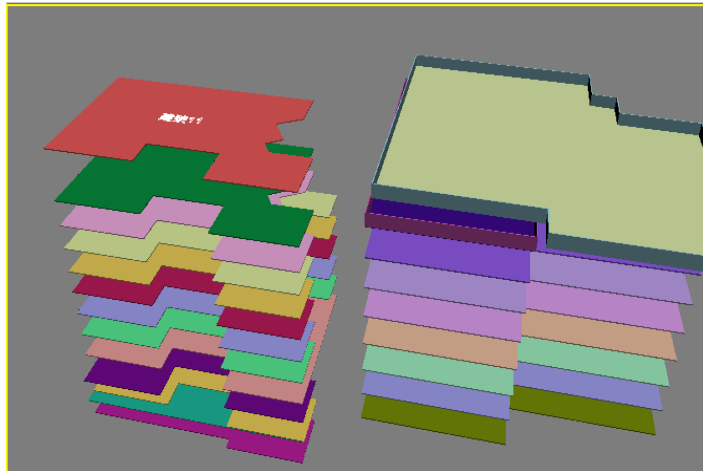


2D → 3D



# Floor plans has the following properties

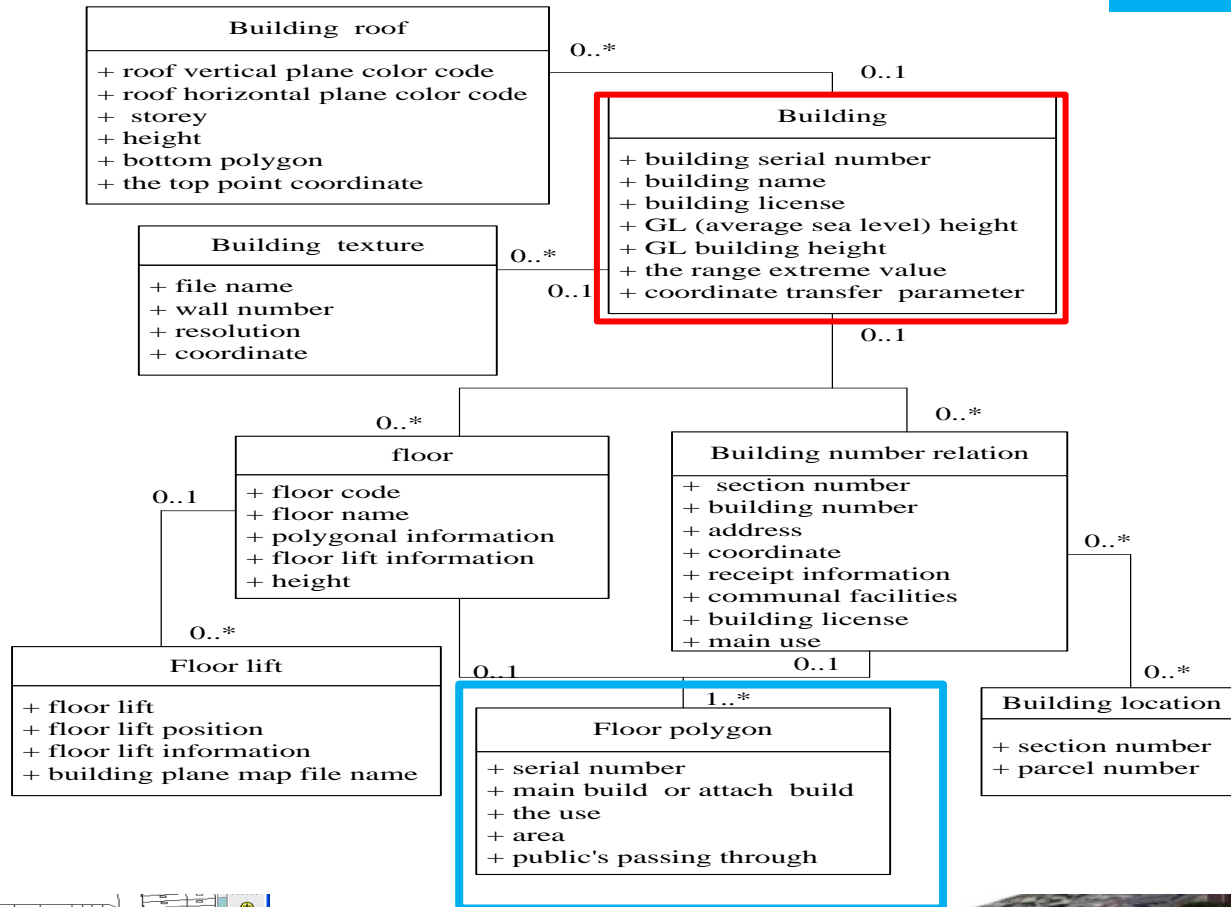
- ❑ The coordinate system is the same as cadastral map
- ❑ The accuracy of the plane is high
- ❑ With the correct floor height
- ❑ Have the attribution information of building
- ❑ Have the construction management license Information
- ❑ Could link with the land administrative Information.



執照資訊	竣工平面圖	建築套繪圖
執照種類: 建造執照		
執照號碼: 83 年 699 號		
行政區: 三民區		
路名: 九三09路		
起造人: [ ]	檢索	
執照資訊: 08300699(建造執照)		
使用執照編號: (83)高市工建字第00699號		
**基本資料**		
建造類別: 新建 是否公眾: 是		
基地面積-騎樓地: 102.57 m <sup>2</sup>		
基地面積-退縮地: 0.0 m <sup>2</sup>		
基地面積-其他: 737.44 m <sup>2</sup>		
基地面積-保留地: 0.0 m <sup>2</sup>		
法定空地面積: 324.47 m <sup>2</sup>		
土地用途分區: 住宅區		
建築物用途: 店舖 集合住宅		
設計建築物高度: 21.0		
建築面積-騎樓: 94.88 m <sup>2</sup>		
建築面積-其他: 411.99 m <sup>2</sup>		
總樓地板面積: 4583.15 m <sup>2</sup>		
設計樓層數: 55.9		
設計容積率: 0.0		
工程造價概算: 2.847753E7		
構造種類: 鋼筋混凝土結構		
樓數: 0 棟數: 1		
地上層數: 8		
地下層數: 1		
層高: 0.0		
防空避難面積(地上): 0.0 m <sup>2</sup>		
防空避難面積(地下): 411.99 m <sup>2</sup>		
總計停車數量: 0 法定車數: 0 裝設車數: 0 自行增設車數: 0 列管車位: 民間		
核准日期: 民國08年04月14日		
發照日期: 民國08年04月14日		
領照日期: 民國08年04月20日		
規定竣工期限(月數): 民國08年05月09日		
開工日期: 民國08年05月09日		
實際竣工日期: 無		
***建築物樓層概要資料***		
序號: 1 樓別: 1 層別: 地下001層 使用類組: 防空避難室兼停車空間		
車庫面積: 759.59 m <sup>2</sup> 樓層高度: 3.8m		
陽台面積: 0.0 m <sup>2</sup> 露台面積: 0.0 m <sup>2</sup>		
序號: 2 樓別: 1 層別: 騎樓 使用類組: 騎樓		
陽台面積: 0.0 m <sup>2</sup> 露台面積: 0.0 m <sup>2</sup>		
序號: 3 樓別: 1 層別: 其他(001) 使用類組: 其他		



# 2D building To 3D Cadastre Building model



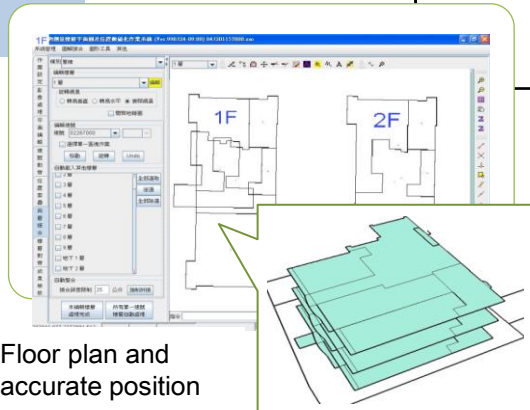
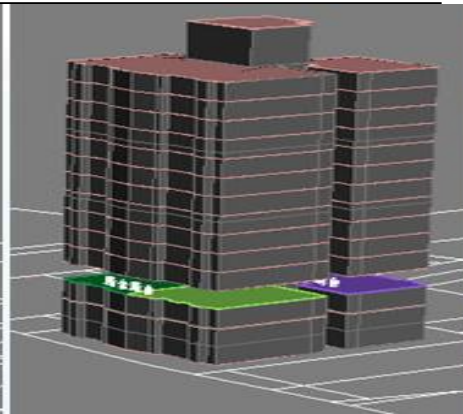
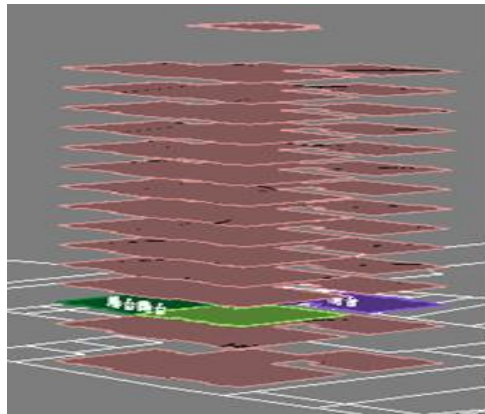


# Steps of 3D Modelling

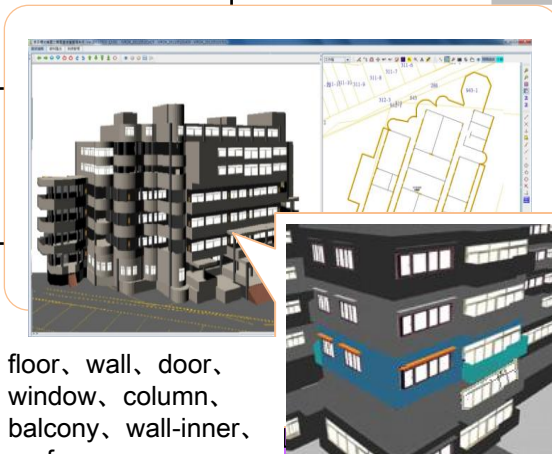
1. Establishment of Storey Plane

2. Establishment of basic 3D cadastral building model

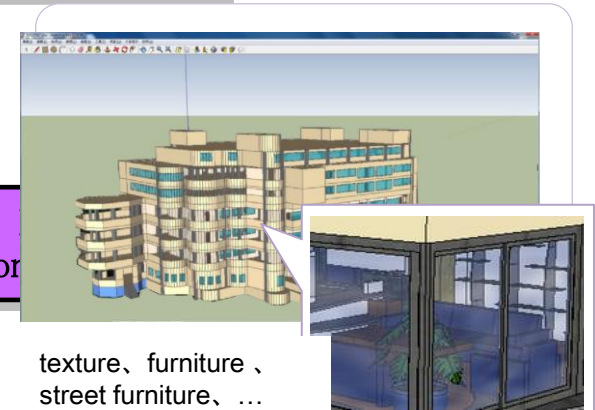
3. Detail 3D building model



Floor plan and accurate position



floor, wall, door, window, column, balcony, wall-inner, roof...



texture, furniture, street furniture, ...



# Step1: Establishment of Building Storey Plane

Building plane map is drawn based on each property corresponds to a building number.

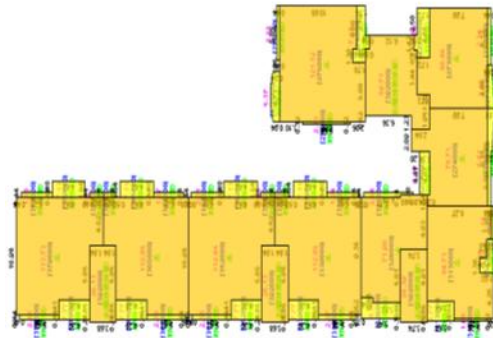
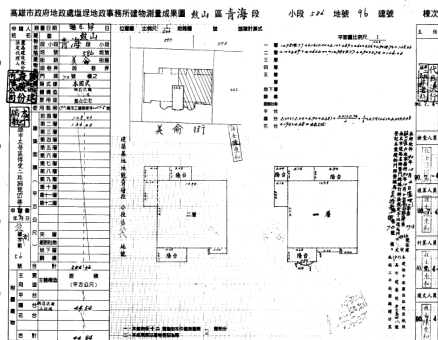
Past: Existing scanned Result map of building survey  
\_need to vectored

Now: Completed vector data with the 『 Building Information System 』

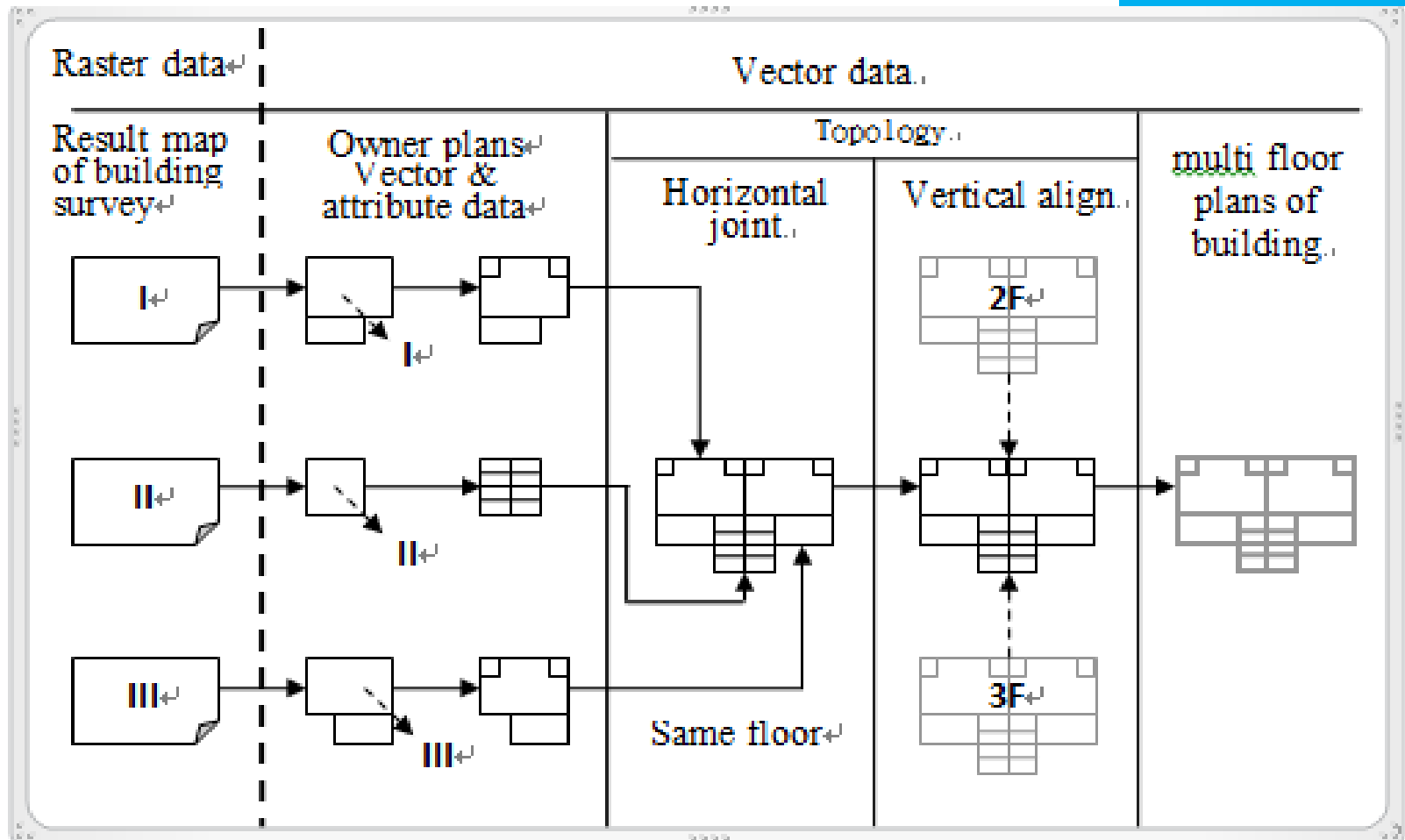
\_Adjacent polygons are joined together with the same storey

Future :

\_BIM(Building Information Modelling) method is considered



# Step1: Establishment of Building Storey Plane

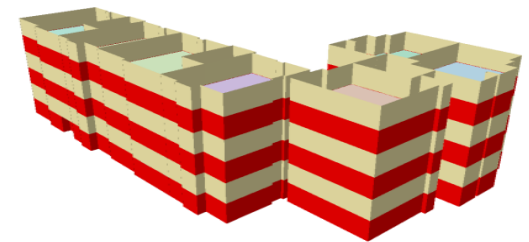
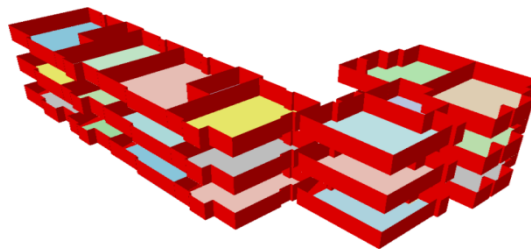
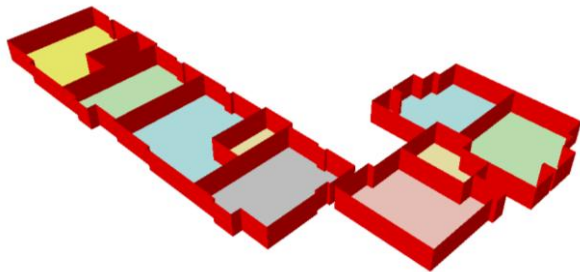
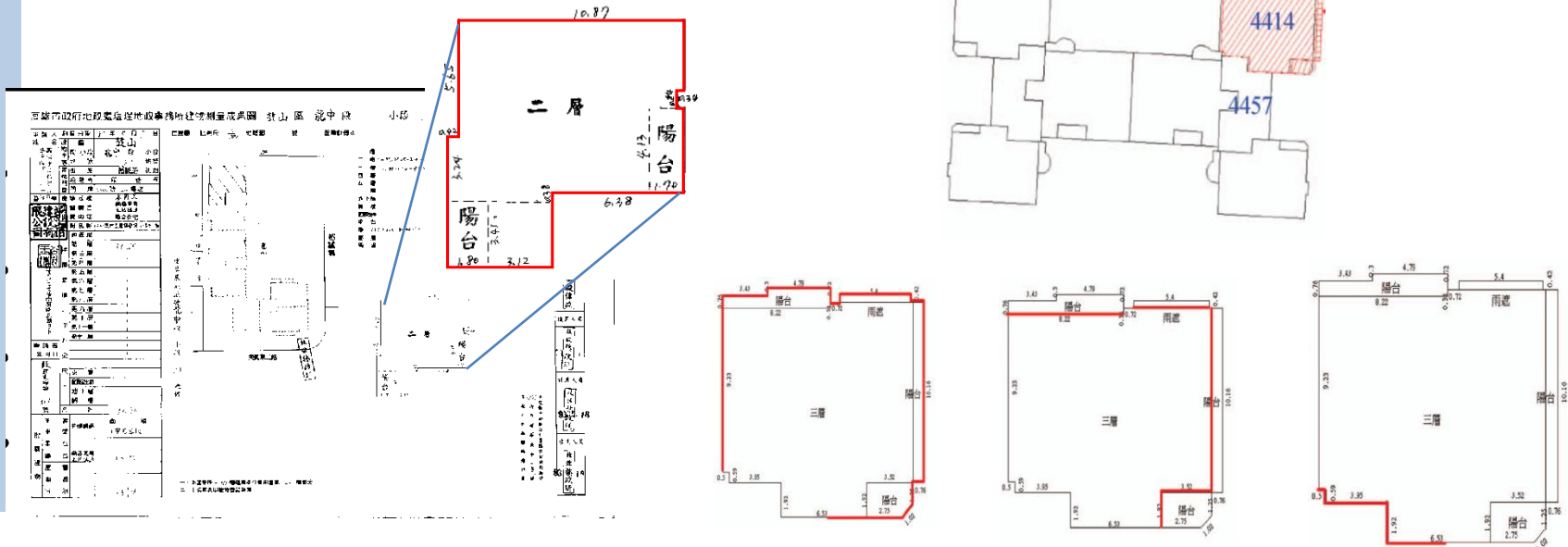


The 2D raster floor planes must be transformed into vector polygons



# Storey plane establishment process

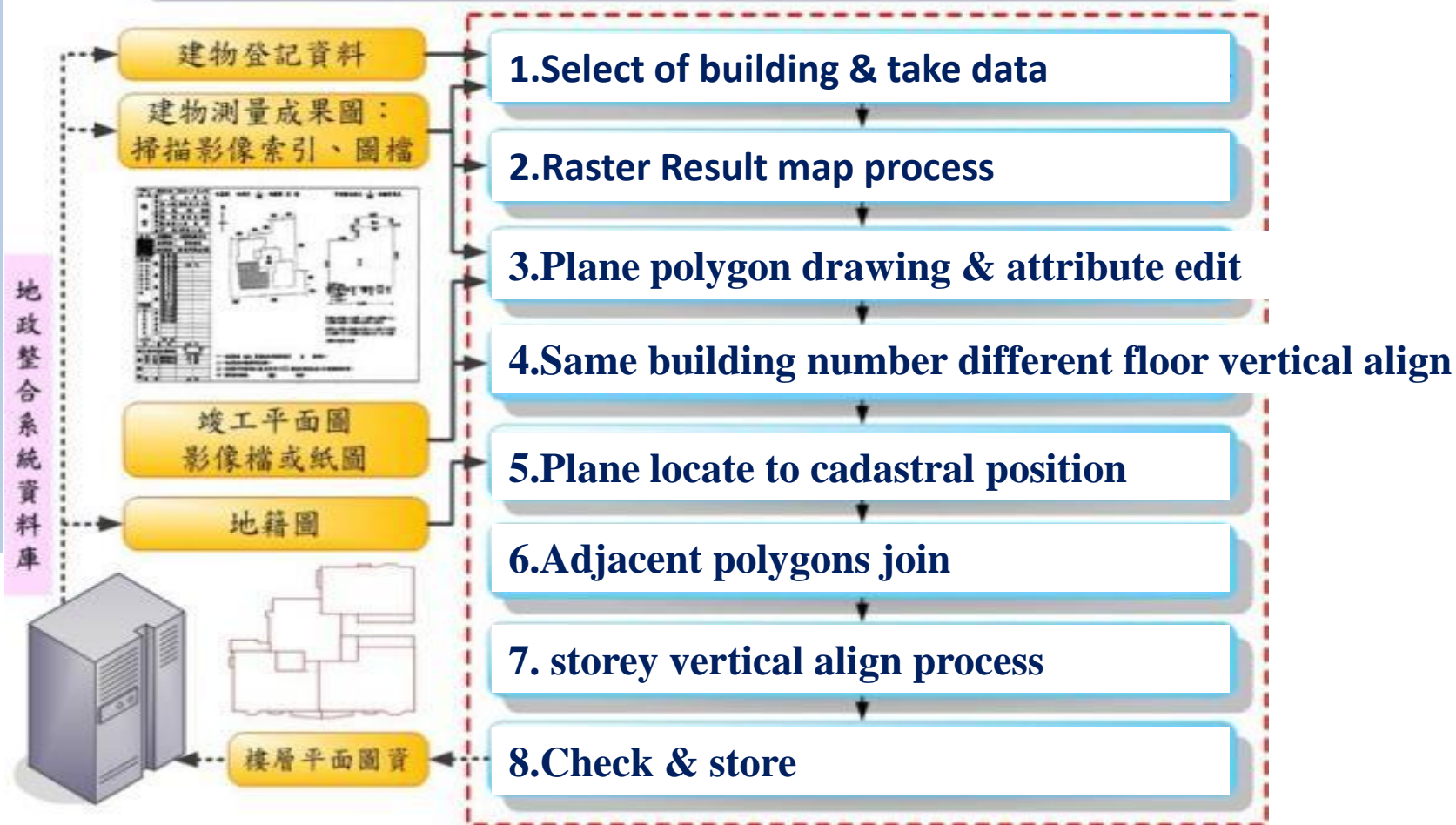
exterior walls, main and attachment walls, and boundary walls may be used to adjoin multiple floor planes into a storey plane.





# Storey Plane Vectorization System

## Storey Plane Vectorization System





# Example of an apartment Building

## 14 storey building with 105 Building Number

建物測量樓層平面圖及位置數值化作業系統 (Ver.20111227-11.00) 047401150000.zso

系統管理 圖解接合 圖形工具 其他

作業設定 測量成果圖 竣工平面圖

地籍圖載入 載入DXF地籍圖

建物位置坐落 鄉鎮市區 02 鼓山區

地段 0474 青海段

地號 326 載入地籍圖 加入他段

套疊 載入正射影像

位置圖影像套合地籍圖 向量套繪

套疊作業樣次 單棟

開啟多層投影 選取執行

四參數套合 三參數套合

輸入地籍圖上的點=175663.3952506439.202

指令





# Review of the owner property

檢視 3D 建物模型成果

本機 遠端

樓層平面

建號 進入/退出

號	樓層	地籍門牌
000	14	美術館路193號十四樓
000	1	美術館路195號
000	2	美術館路195號二樓
000	3	美術館路195號三樓
000	4	美術館路195號四樓
000	5	美術館路195號五樓
000	6	美術館路195號六樓
000	7	美術館路195號七樓
000	8	美術館路195號八樓
000	9	美術館路195號九樓
000	10	美術館路195號十樓

主/附屬建物  標示牆線尺寸

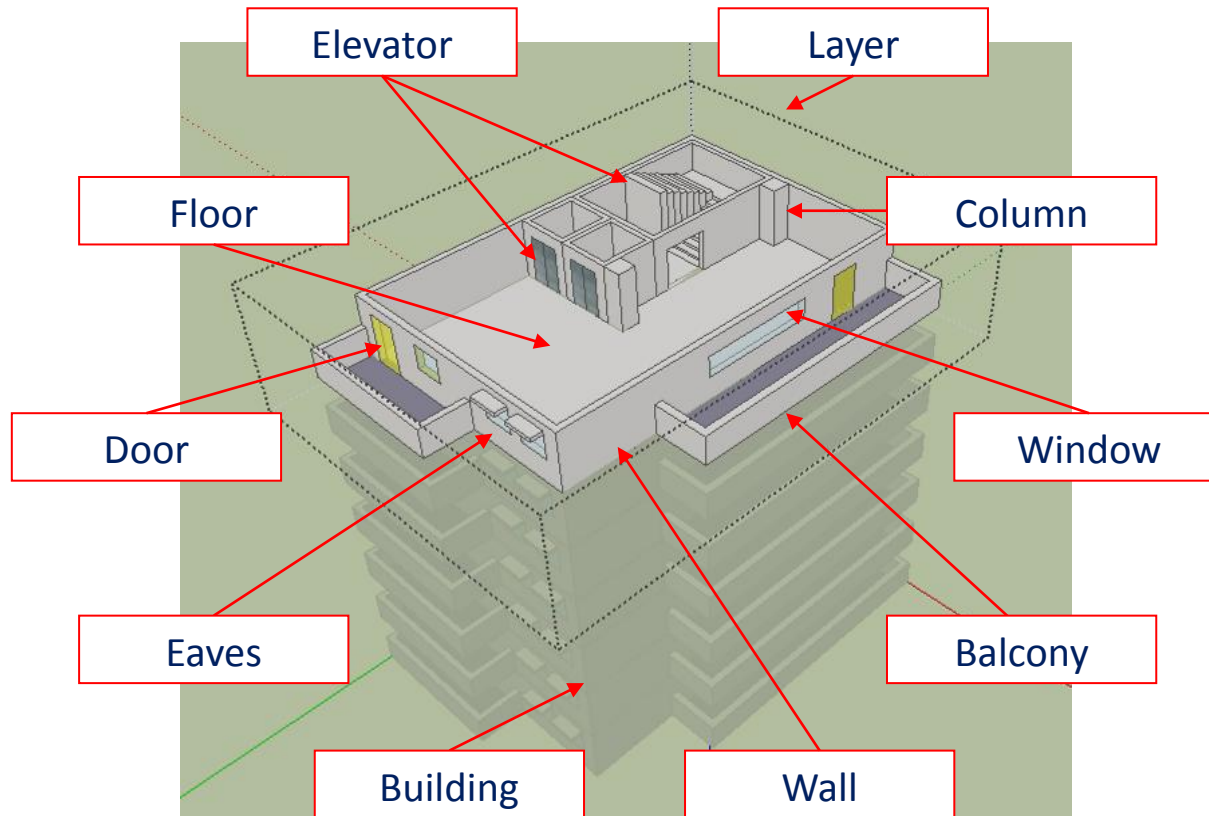
透視	樓層	主/附屬建物	用途
<input type="checkbox"/>	十樓	附屬建物	雨遮
<input type="checkbox"/>	十樓	附屬建物	雨遮
<input type="checkbox"/>	十樓	附屬建物	雨遮
<input type="checkbox"/>	十樓	附屬建物	陽台
<input type="checkbox"/>	十樓	附屬建物	陽台
<input type="checkbox"/>	十樓	附屬建物	陽台
<input checked="" type="checkbox"/>	十樓	主建物	

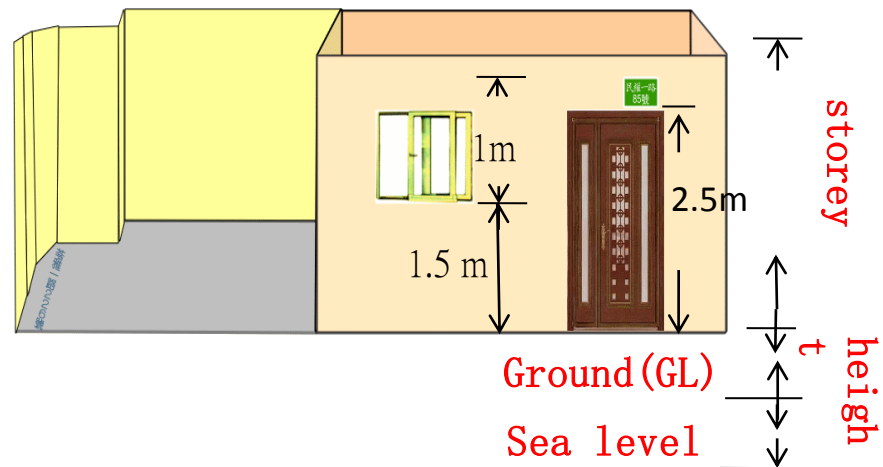
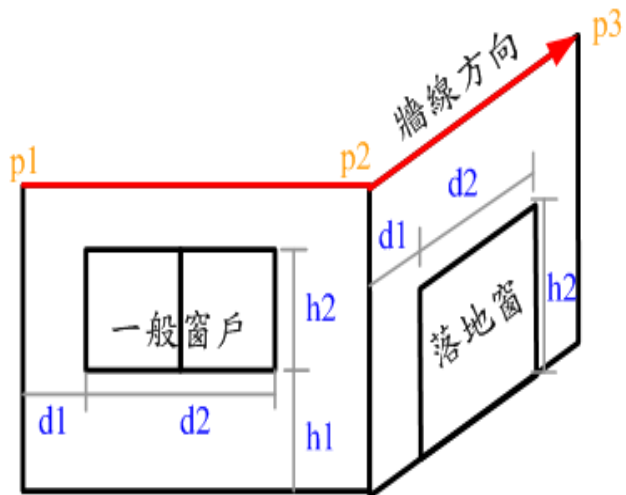
The image shows a 3D architectural rendering of a building facade, likely generated from a software application. The building is a multi-story structure with a grid-like facade of windows. The central entrance area is highlighted with a colorful facade (yellow, orange, and blue). The rendering is displayed in a software window titled "檢視 3D 建物模型成果" (Review 3D Building Model Results). The window includes a toolbar with navigation and viewing tools, and a list of building details on the left side. The list includes building numbers, floor numbers, and addresses, as well as a table of building types and their uses.



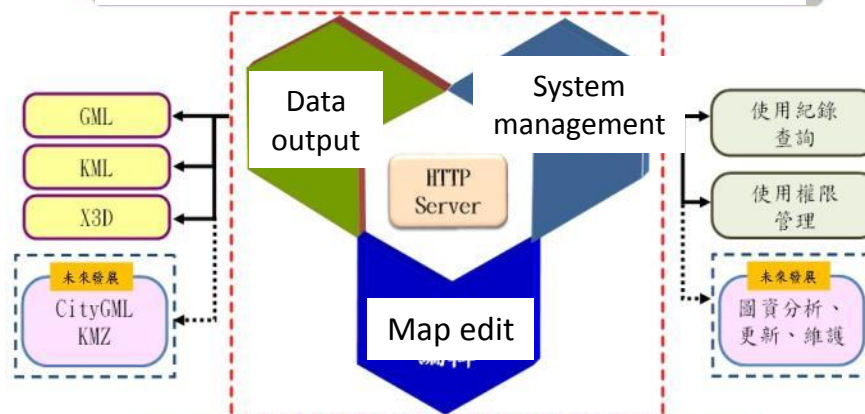
## Step2: basic 3D cadastral building model

Based on the building components in the CityGML standard, and the contents and features in the result maps of building survey, we designed 10 building components to describe the cadastral building model





### Basic 3D Cadastral Building System



#### 立體建物LoD1-2

- ◆繪製2D多邊形、指定高度、建物塑模
- ◆影像處理、外牆貼圖
- ◆錐狀、脊狀、帽狀等各型態屋頂
- ◆街道家具、行道樹等室外裝置物件

#### 樓層平面LoD3-4

- ◆內牆、外牆、隔間牆等牆壁資訊
- ◆門、窗等立面開口資訊
- ◆植栽、桌椅、消防栓等室內裝置物件
- ◆掛飾、不規則3D物件等室內建築結構



# Basic 3D Cadastral Building System

多目標地籍圖立體圖資維護管理系統 - AF0219\_200910011622

圖資編輯 | 資料匯出 | 系統管理

縣市: 台北市 | 鄉鎮市區: 大安區

地段: 0219 | 仁愛段三小段 | 查詢

套繪地形圖、正射影像

圖檔: [ ]

自動載入地形圖  自動載入正射影像 確定

立體建物 | 樓層平面 | 街道家具

編號: 0000 | 建物(共 11 筆) | 點取

樓層數: 7 | 高度: 21.0 | ↑

結構: R | 鋼筋混凝土造 | ↓

新增 | 刪除 | 修改 | 清除 | 指定地號 | 載入成單

建物列表 | 編修 | 貼圖 | 屋頂

貼圖列表 | 影像處理

頂面

貼圖 | 圖檔 | 刪除

牆壁

序號	目錄	圖名
0	AF0000	A00
1	AF0000	A01
2	AF0000	A02
3	AF0000	A03
4	AF0000	A04
5	AF0000	A05
6	AF0000	A06
7	AF0000	A07

刪除 | 插入 | 儲存影像 | 圖檔瀏覽 | 複製

上傳儲存 | 結束

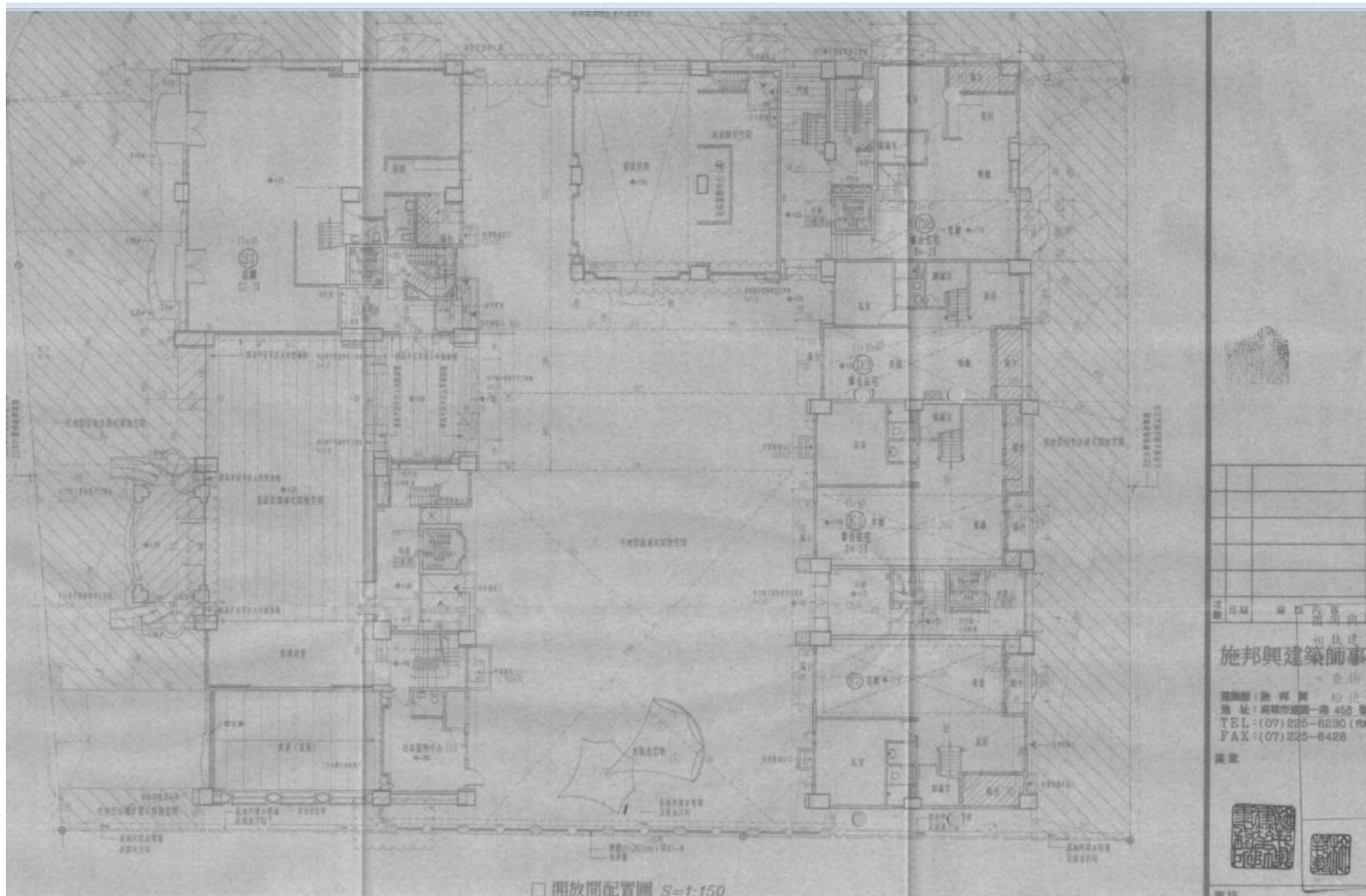
工作區

306100.87,2789657.83 H=9.54

鳥瞰視窗



# Construction plans







棟 門牌 柱 牆壁 裝置 自訂面

牆壁資訊 (牆寬: 2.46, 高: 3.25)  
 樓層 十樓 顏色 高度 3.25 (m)

匯出整層牆資暫存  
 暫存牆資 匯入 清除暫存

點選牆線 新增 刪除 修改 清除 反轉

牆壁資料列表

左邊資訊	右邊資訊	高度
主建物	01230000_主建...	3.25
主建物		3.25
主建物		3.25
主建物		3.25
主建物		3.25
主建物		3.25

開口線段 0 顯示開口 建物資訊

開口資訊 (牆寬: 2.46, 高: 3.25)

種類 騎樓透通 (單位: 公尺)  
 離地高度 0.01 開口高度 1.5  
 離牆左邊 0.01 離牆右邊 0.01

新增 刪除 修改 清除 圖形作業

開口資料列表

離地高	離左邊牆	離右邊牆	高度	開口
0.01	0.33	0.33	2.20	木門





檢視 3D 建物望模成果

本機 遠端

樓層平面

建號 進入/退出

建號	樓層	地籍門牌
02401000	3	美術東二路 1 3 2 巷 3 6 號三樓
02402000	4	美術東二路 1 3 2 巷 3 6 號四樓
02403000	5	美術東二路 1 3 2 巷 3 6 號五樓
02404000	6	美術東二路 1 3 2 巷 3 6 號六樓
02405000	7	美術東二路 1 3 2 巷 3 6 號七樓
02406000	8	美術東二路 1 3 2 巷 3 6 號八樓
02407000	9	美術東二路 1 3 2 巷 3 6 號九樓
02408000	10	美術東二路 1 3 2 巷 3 6 號十樓
02409000	11	美術東二路 1 3 2 巷 3 6 號十一樓
02410000	12	美術東二路 1 3 2 巷 3 6 號十二樓
02411000	13	美術東二路 1 3 2 巷 3 6 號十三樓
02412000	14	美術東二路 1 3 2 巷 3 6 號十四樓
02413000	1	美術東二路 1 3 2 巷 3 2 號
02414000	3	美術東二路 1 3 2 巷 3 2 號三樓
02415000	4	美術東二路 1 3 2 巷 3 2 號四樓
02416000	5	美術東二路 1 3 2 巷 3 2 號五樓

主/附屬建物  標示牆線尺寸

透視	樓層	主/附屬建物	用途
<input checked="" type="checkbox"/>	十一樓	附屬建物	雨遮
<input checked="" type="checkbox"/>	十一樓	附屬建物	雨遮
<input checked="" type="checkbox"/>	十一樓	附屬建物	雨遮
<input checked="" type="checkbox"/>	十一樓	附屬建物	陽台
<input checked="" type="checkbox"/>	十一樓	附屬建物	陽台
<input checked="" type="checkbox"/>	十一樓	主建物	

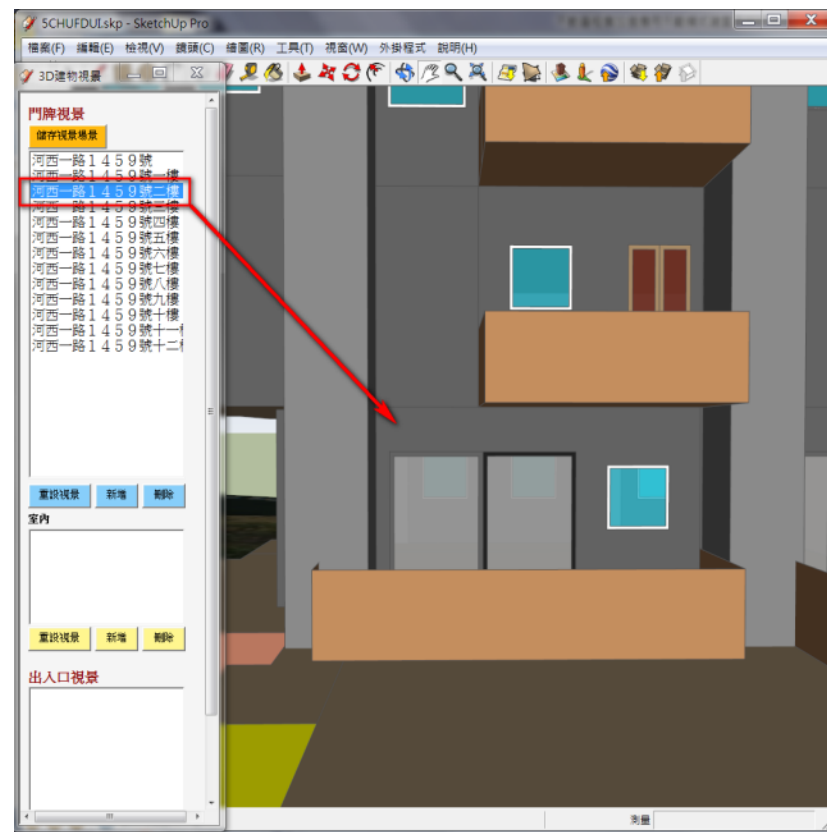
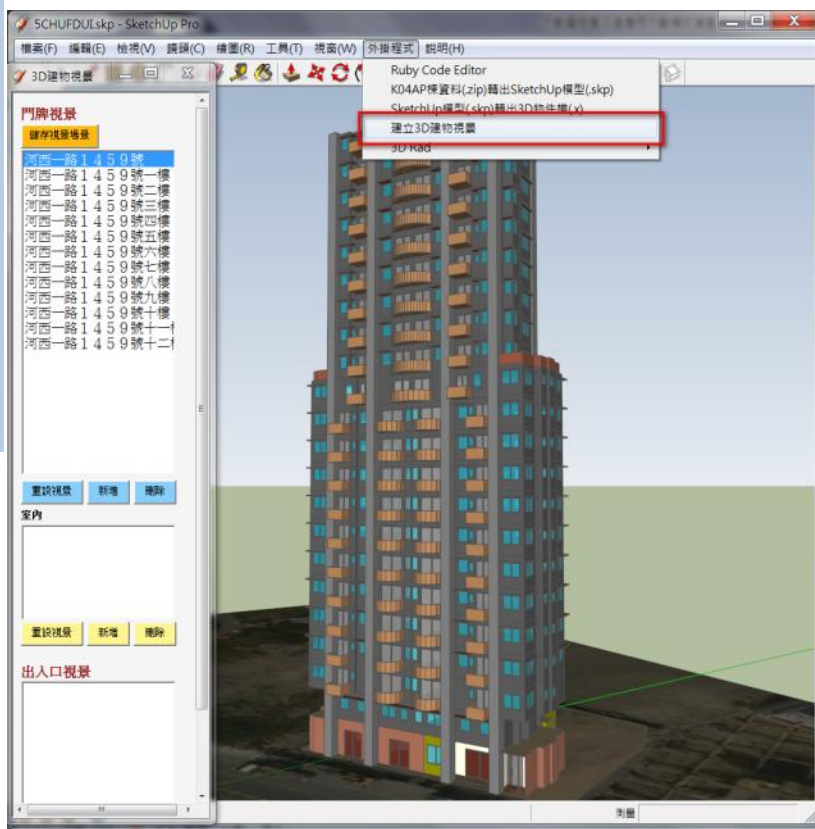




## Step3: Detail building model

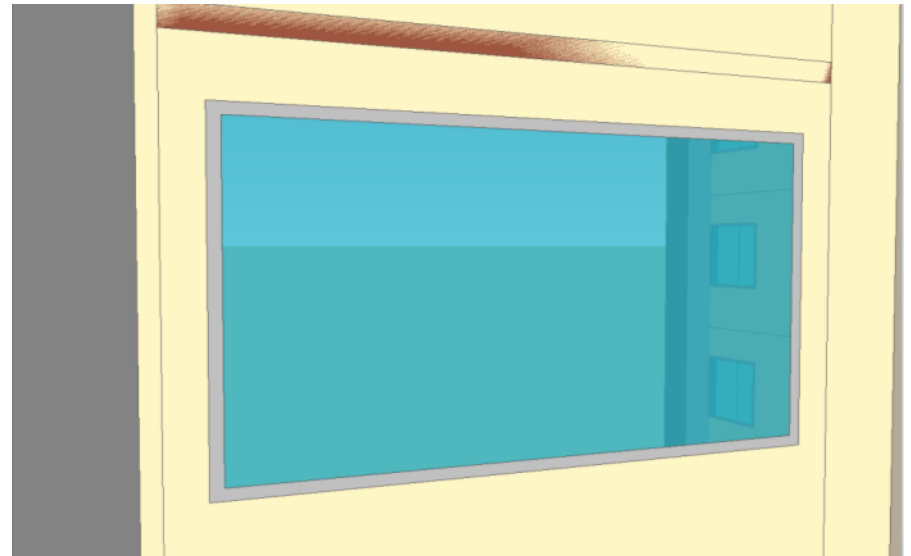
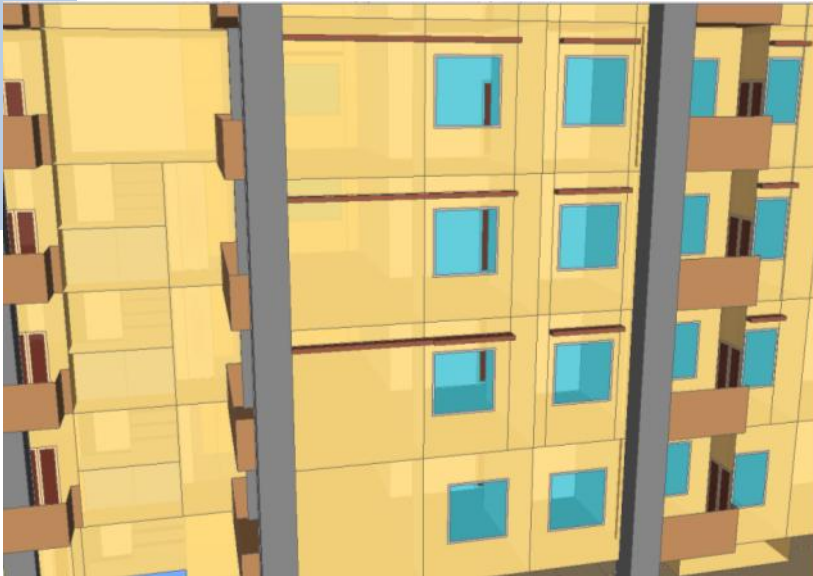
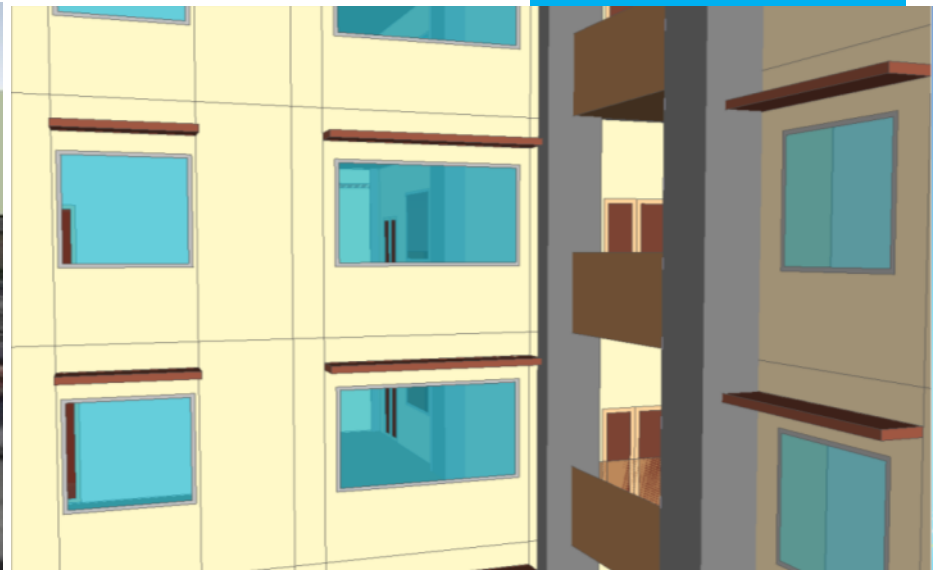
If detail building models are required, additional survey or interior drawings are required for texture processing.

We may output the data as SketchUp format for further 3D data editing





# Example of Detail building model



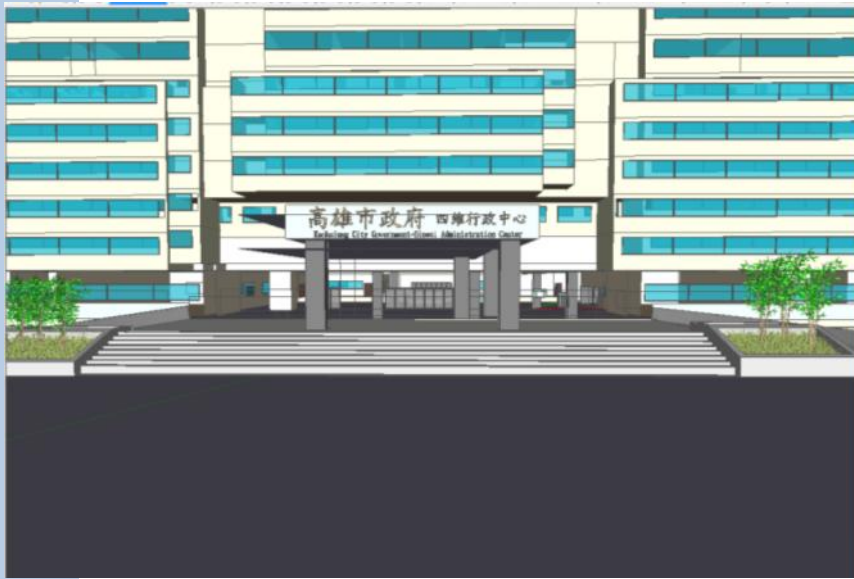


# Example of Detail building model





# Example of Detail building model





# 3D Cadastre Building Data storage structure

名稱	修改日期	類型
17	2010/10/27 下午 02...	檔案資料夾
36	2010/10/27 下午 02...	檔案資料夾
37	2010/10/27 下午 02...	檔案資料夾

資料夾	樓名
K04Web	
CADASTRA	
CFG	
DATA	
DETAIL_BUILDING	
17	第一層
68	第二層
25	第三層
176825059	第四層
5CL8FE2N.ZIP	棟名
5CN0FE2O.ZIP	
81	
25	
178125055	
5DVNFDL2.ZIP	
5DVUFDMR.ZIP	
5DVVFDN8.ZIP	
82	
83	
84	
36	
37	
DETAIL_BUILDING_INDEX	

- building number and location
- storey ID
- storey polygon
- 3D graphical data
- 3D surface and texture
- horizontal planes and textures
- vertical planes and textures
- floor information
- building stairs
- floor stairs
- columns
- view point
- interior walls



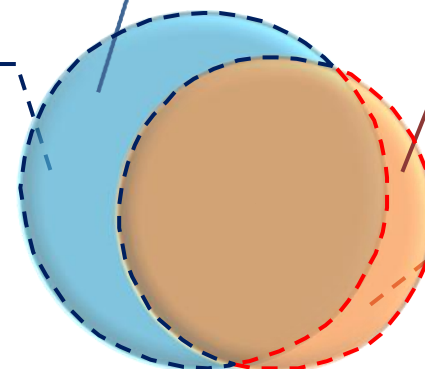


# 3D Cadastre Building feature v.s CityGML Building feature

CityGML Building Model Feature	3D Cadastre Building Model feature
_AbstractBuilding	立體樓層 Storey
_BoundarySurface	樓層平面多邊形 Floor
Building	立體建物 Building
RoofSurface	屋頂 Roof
WallSurface、InteriorWallSurface	牆 Wall
Door	門 Door
Window	窗 Window
IntBuildingInstallation	樓電梯 Elevator
IntBuildingInstallation	柱 Column

CeilingSurface、Room、BuildingFurnitur...

CityGML Building Model Feature

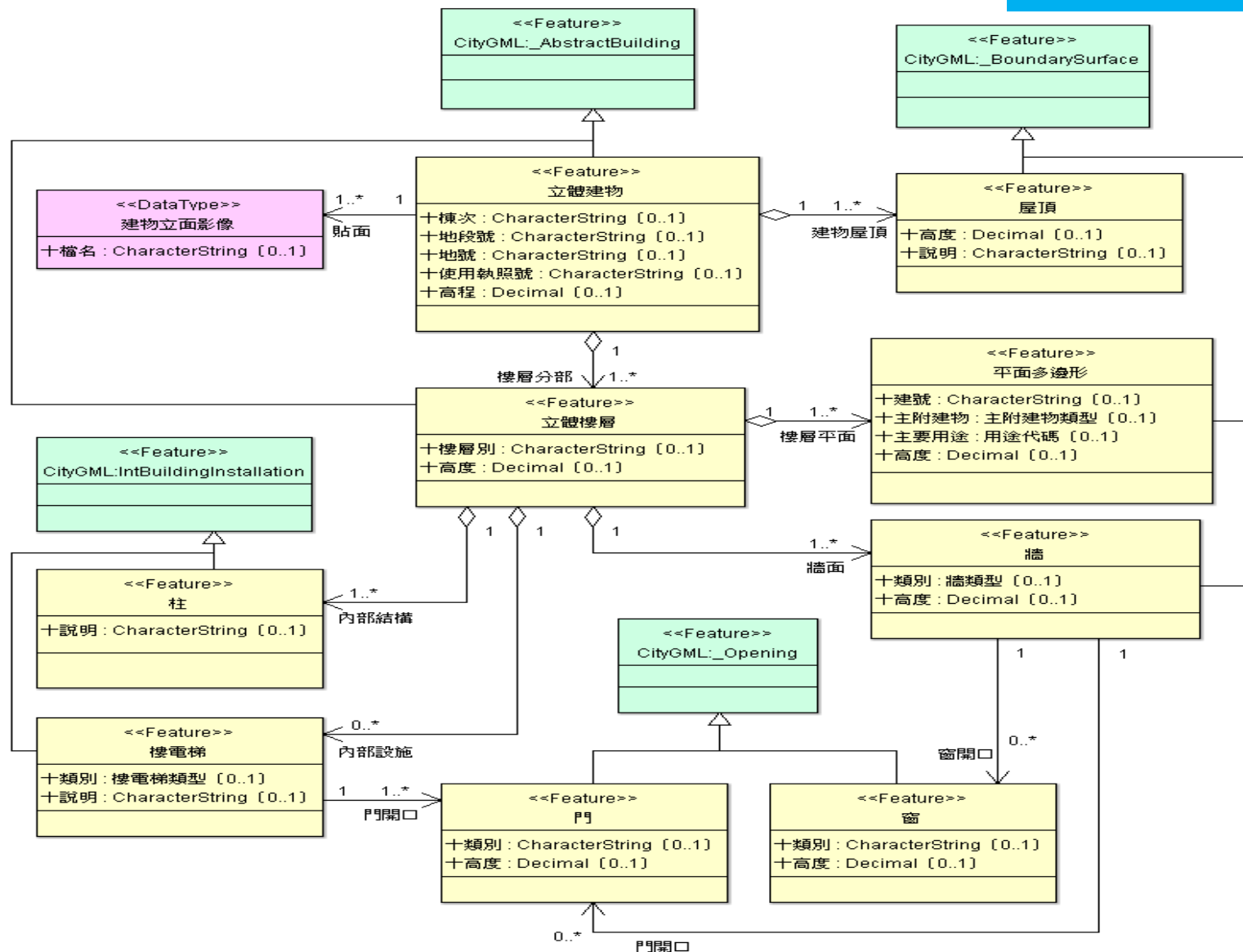


Result map of building survey attribute data

3D Cadastre building feature

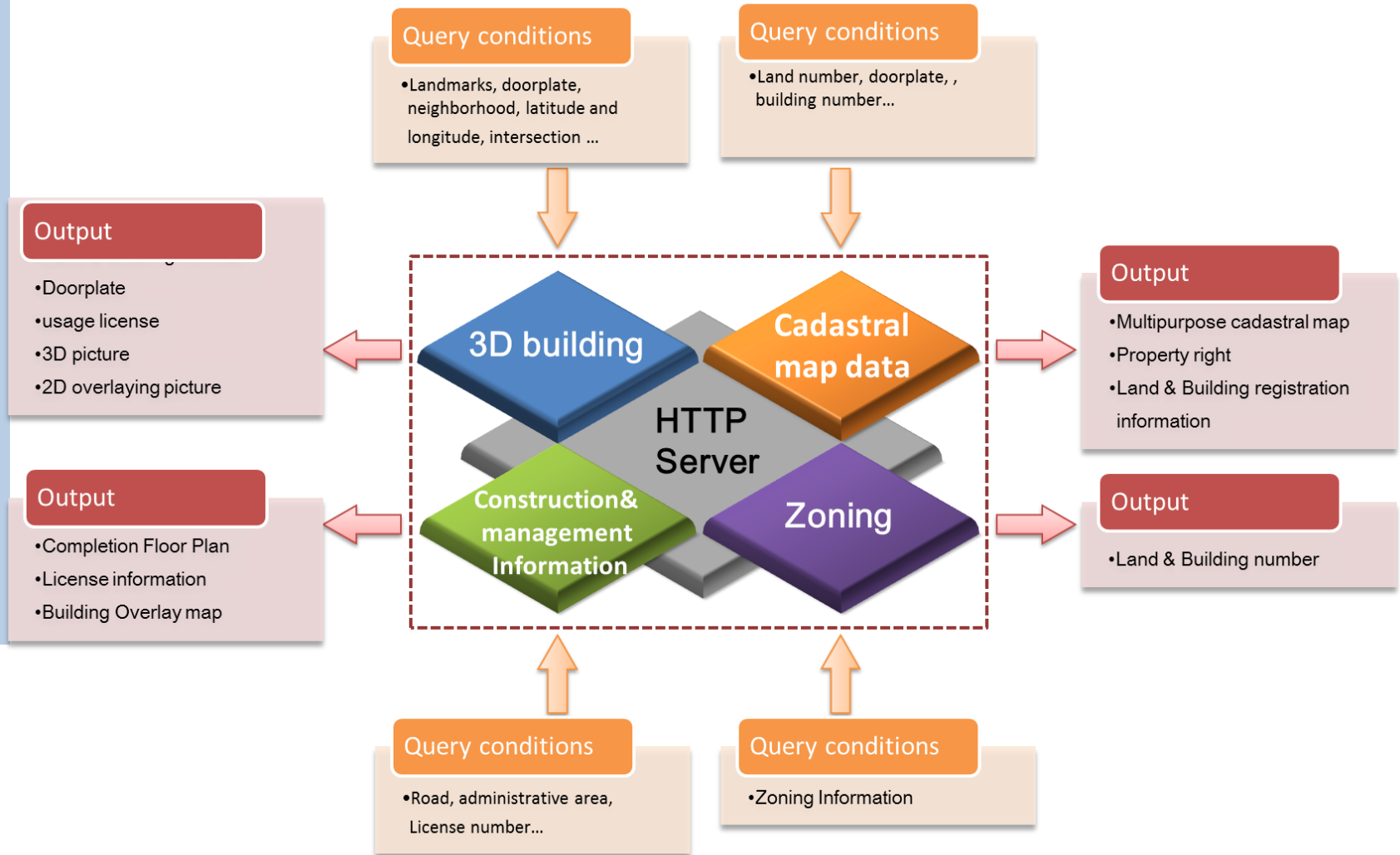


# Multi-Level 3D Cadastre Building Model Schema for Data Exchange



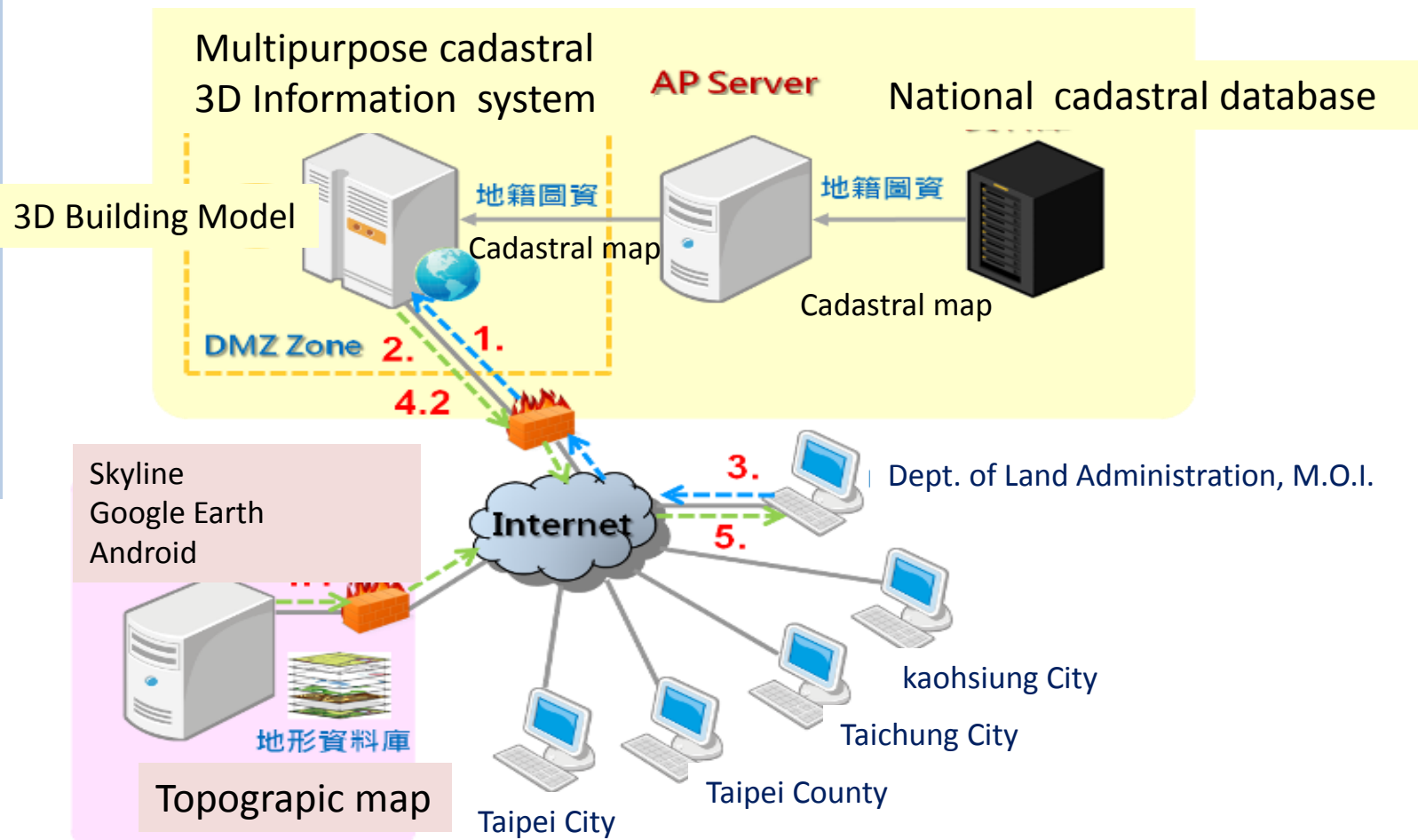


# 4、 Prototype system of Application



# Prototype system of Application

The system exploits the information from the land and building registration to compute a 3D building model which underpins property ownerships.



# Prototype system function

## Multipurpose Cadastral 3D Information System

### Maps Query

Land & Building number query

Doorplate query

Intersection query

Road query

Facility query

Location query

Path planning

### Land services

Building number query

Land number query

### development plan

Development zone query

Zoning query

### 3D application

3D building

Building Façade

Moving lines navigation

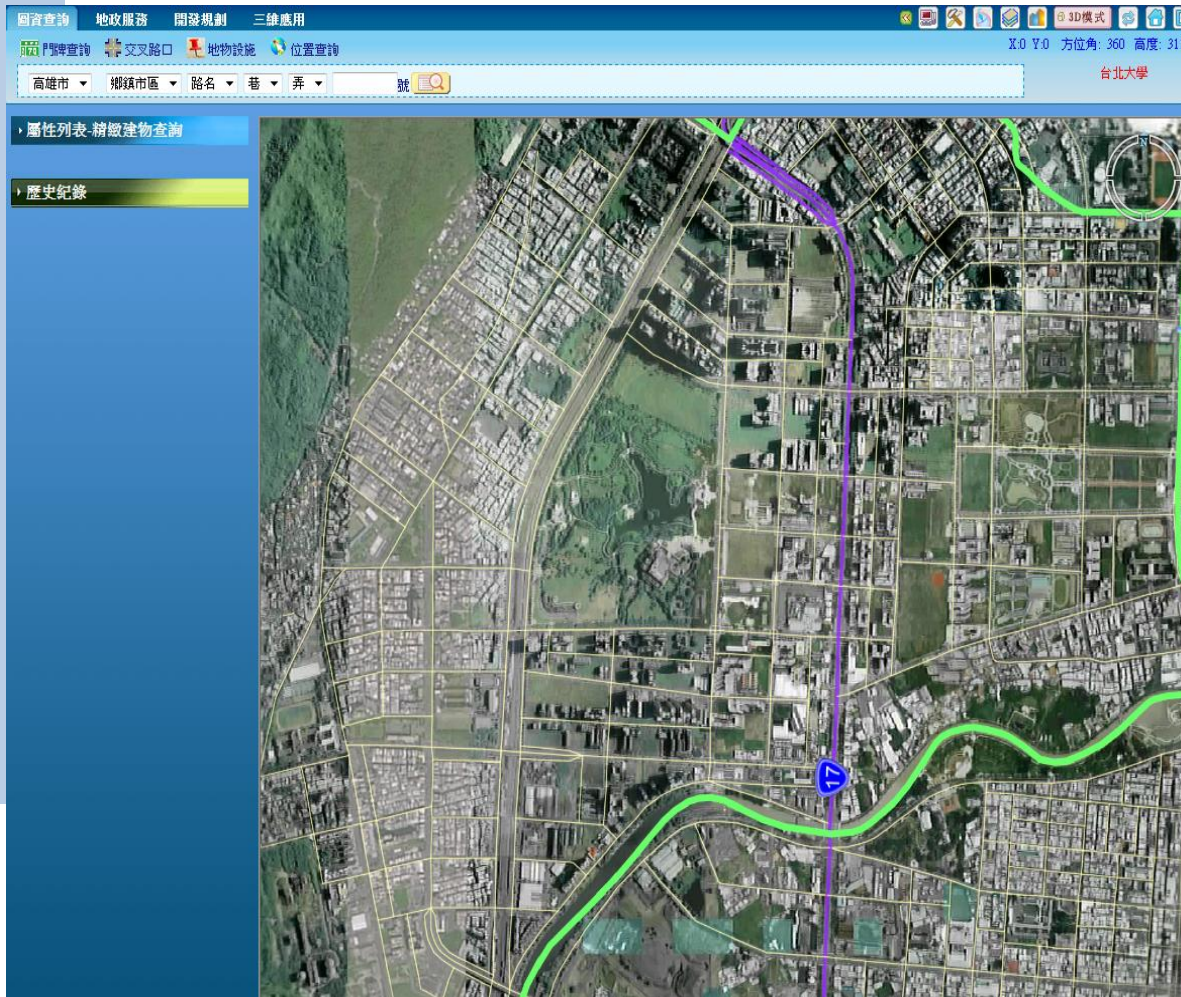
Real Estate value-added

### System management

Storey Plane Vectorization subsystem

Basic 3D Cadastral Building subsystem

# The Pilot system Area



- ❑ 44th readjustment area in Kaohsiung City.
- ❑ The area occupies approximately 144 hectares containing 1530 lots,
- ❑ 11310 registered building numbers, and approximately 550 buildings.
- ❑ Using in both Skyline & Google Earth platform



# Using Skyline、Google Earth & Mobile system platform

## 多目標地籍圖 立體圖資建置服務網

中部辦公室 台北大學  
2012-10-22 個人資料維護 登出



最新消息

下載專區

虛擬三維城市

圖資維護

建物圖資匯出

圖資管理

圖資交流

Skyline平台

GoogleEarth平台

行動裝置平台

登入IP

113.32.8.82

123.193.14.7

120.126.138.192

120.126.194.254

120.126.194.254

120.126.194.254

120.126.138.200

120.126.138.195

120.126.138.195

120.126.138.192

登入日期

2012-10-22

2012-10-16

2012-10-16

2012-10-16

2012-10-16

2012-10-16

2012-10-15

2012-10-14

2012-10-14

2012-10-12

登入時間

19:57:18

18:25:28

15:28:08

15:14:07

15:08:41

15:01:20

14:24:25

20:49:42

20:49:11

09:09:58

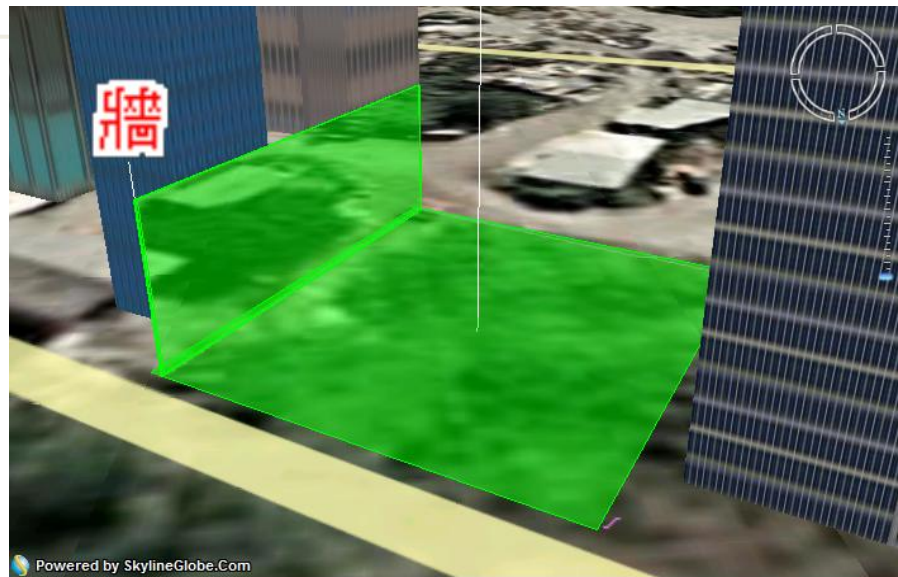
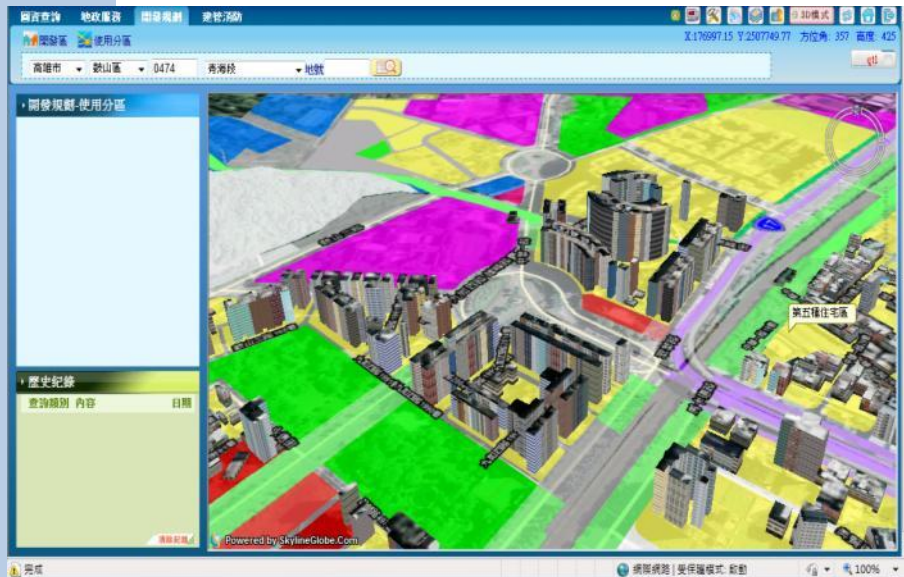








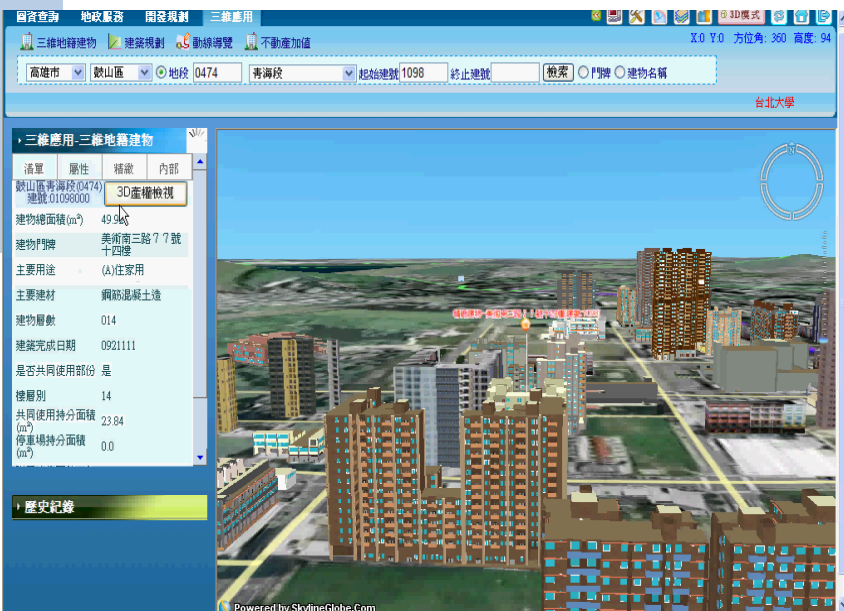
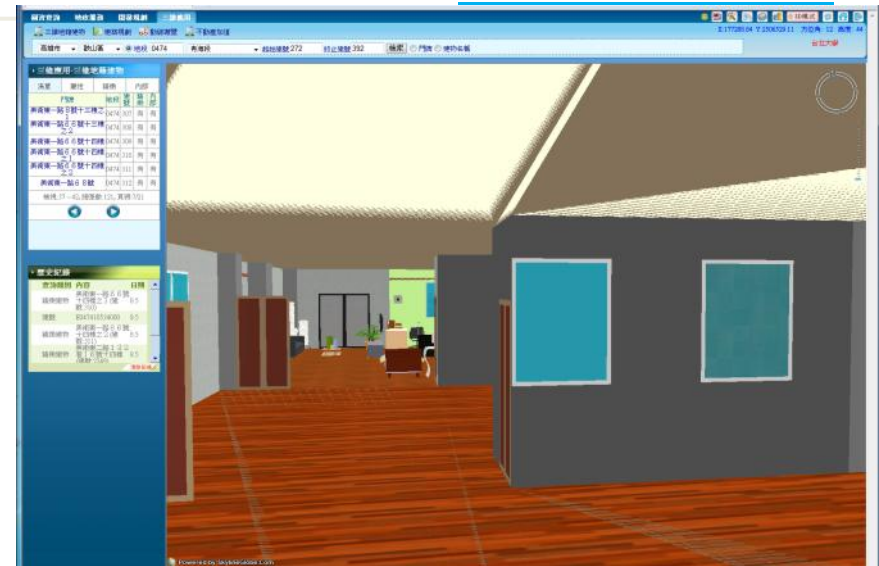
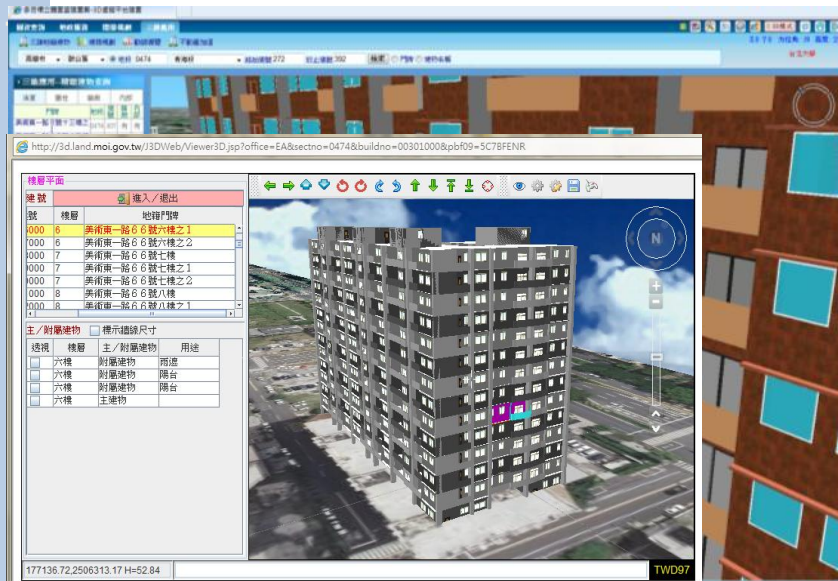
# Planning and Development







# 3D application for house property browsing



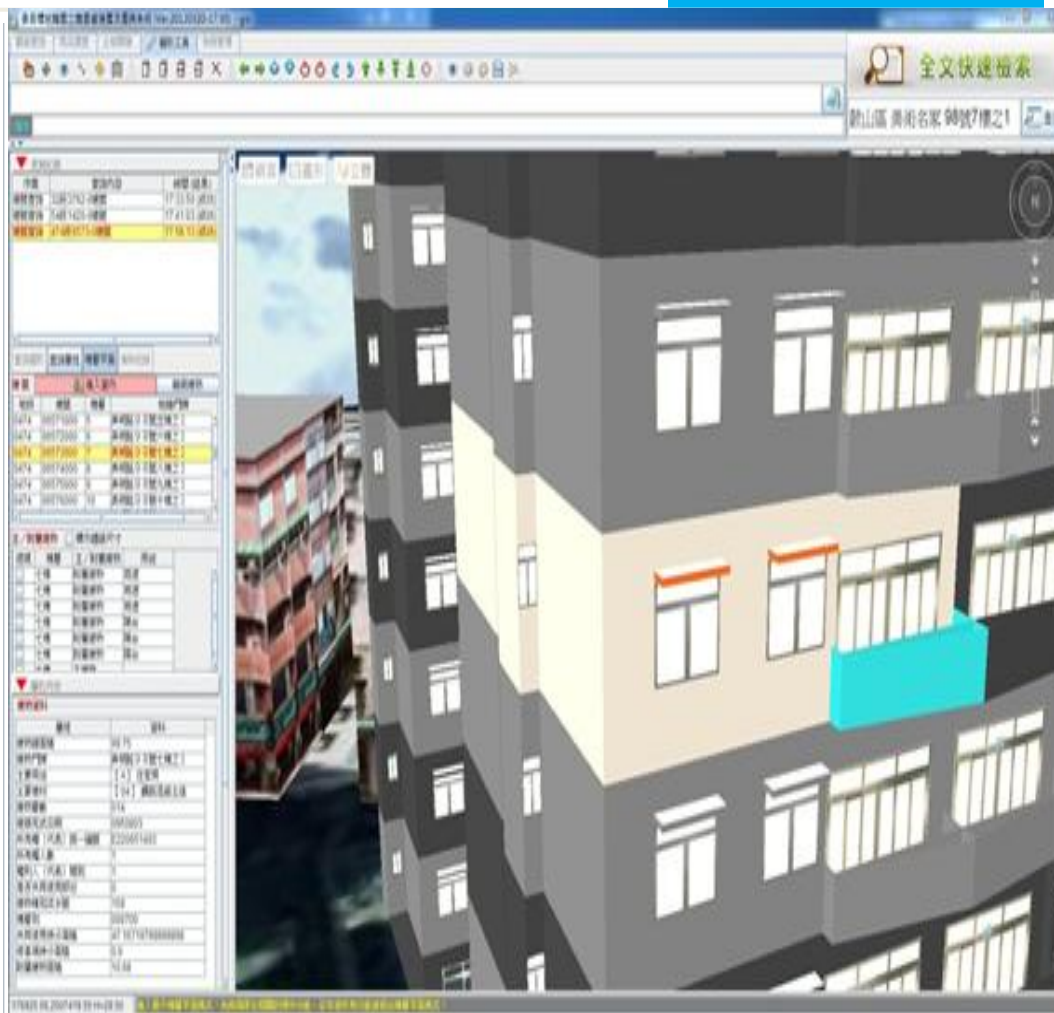


## 高雄市鼓山區 青海段(0474) 04679-000建號

查詢時間：民國097年01月22日21:13

### 建物標示部

登記日期	民國095年03月20日	登記原因	第一次登記
建物門牌	美術南三路229號二十三樓		
建物坐落地號	青海段 0545-0000		
主要用途	住家用		
主要建材	鋼筋混凝土造		
層數	025層	總面積	154.63平方公尺
層次	二十三層	層次面積	154.63平方公尺
建築完成日期	民國095年02月21日		
附屬建物用途	陽台	面積	15.67平方公尺
	雨遮		3.28平方公尺
共同使用部份	青海段 04681-000建號		28,462.90平方公尺
權利範圍	100000分之272		
其他登記事項	建築基地權利(種類)範圍：青海段545地號(所有權)10000分之317 使用執照字號：(95)高市工建築使字第353號		





# Google Earth

國資查詢 地政服務 三維應用 台北大學

精緻建物 建築規劃 動線導覽 經度:121.56392 緯度:25.034 高程:60.332 公尺

臺北市 信義區 地稅 門牌 路名 請輸入路名 巷 弄 號 建物名稱

三維應用-精緻建物

清單	屬性	精緻	內部
門牌	地稅	建號	精緻
檢視: -5 ~ 0, 縮放數: -1, 頁碼: 1/0			

歷史記錄

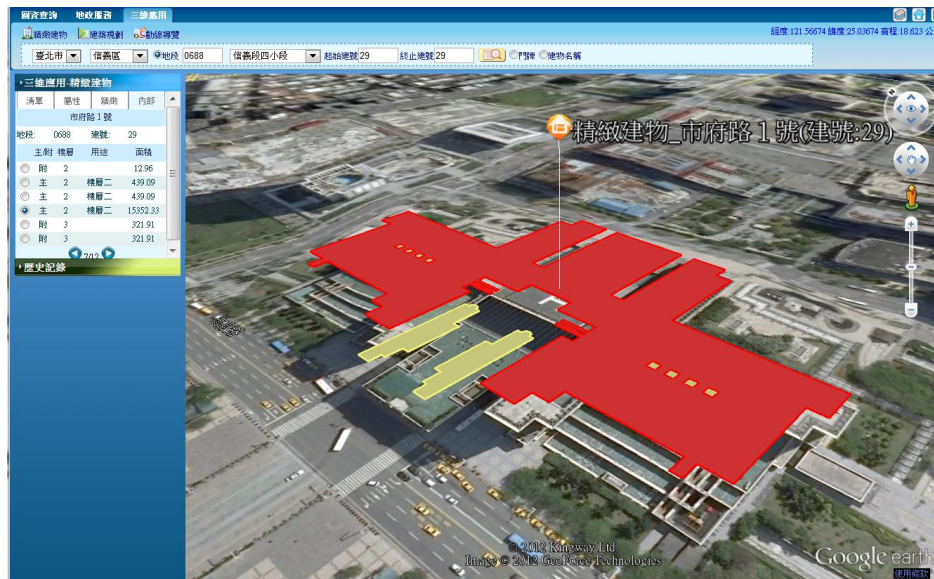
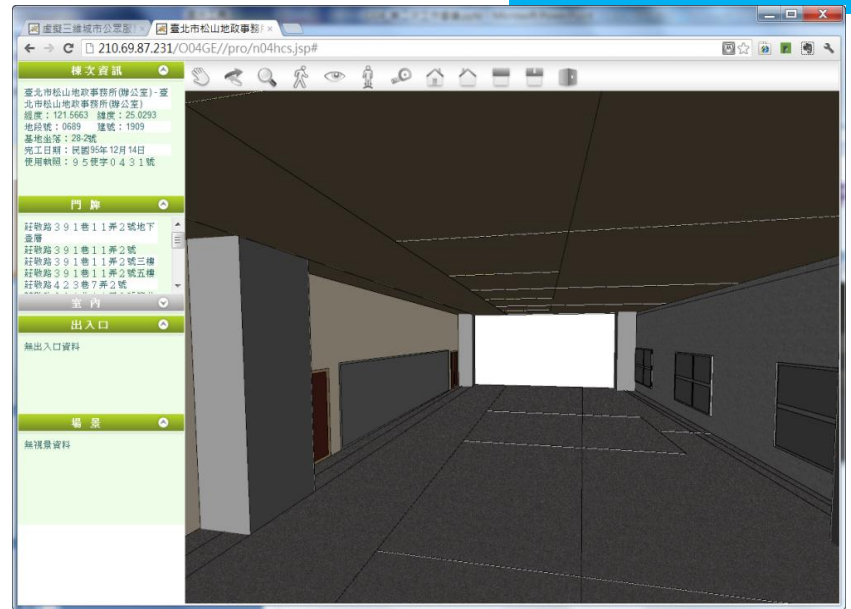
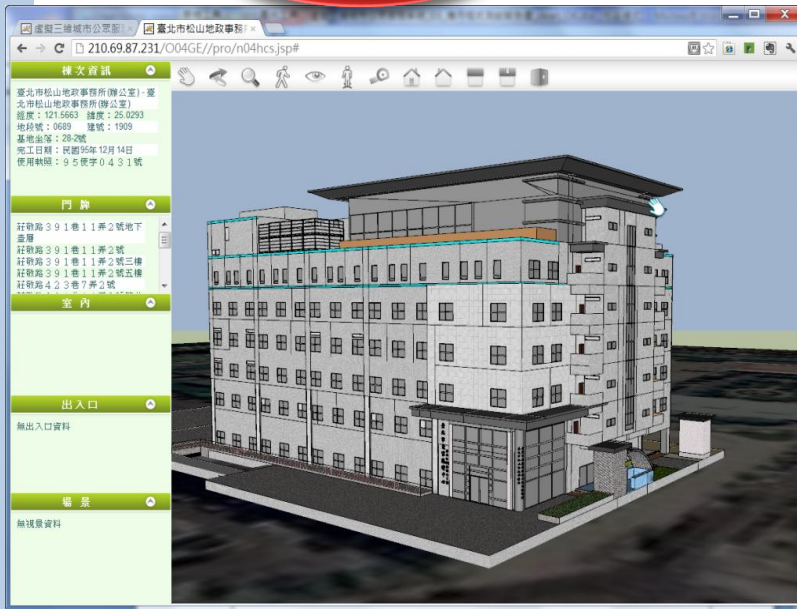
© 2012 Kinway Ltd.  
 Image © 2012 DigitalGlobe  
 Image © 2012 GeoPorto Technologies  
 Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google earth 使用條款



# 外觀

# 內部





## 5、 Conclusions

- ❑ **Result maps of building survey issued during building registration may be used to establish multiple floor planes, which can be integrated into 3D models based on building height information**
- ❑ **Construction plans provide building element data such as door, windows, and balcony for constructing basic 3D model. Further details may be edited as required.**
- ❑ **The database developed in this study is 2.5D. Since it is directly linked to National Cadastre Database and allows real-time information query, its potential applications are vast**
- ❑ **This study is an ongoing project sponsored by the government. It is expanding to other major cities and are currently under cost budgeting and seeking more applications**
- ❑ **Future studies include legislation regarding 3D cadastre establishment, data storage standard, information sharing, and maintenance.**



# 3D Cadastres

## Thanks for your attention !