



# **Collecting Reality & Digital Engineering**

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#### PRESENTATION OVERVIEW



- Tools for collecting reality
- Examples of Reality Capture
- Applications

### WHY CAPTURE REALITY?





At AAM, it is what we do!



# "...geospatial data are the building blocks of a Smart City"

• Vincent Hoong, CEO of Singapore Land Authority, 2009 – 2015

"Geospatial data and technology will allow us to maximise our use of limited land resources"

Tan Boon Khai, CEO of Singapore Land Authority





"Smart cities are places where information technology is wielded to address problems old and new...

... combined with infrastructure, architecture, everyday objects, and even our bodies to address social, economic, and environmental problems."

"...geospatial data are the building blocks of a Smart City"





### HOW DO WE CAPTURE REALITY?





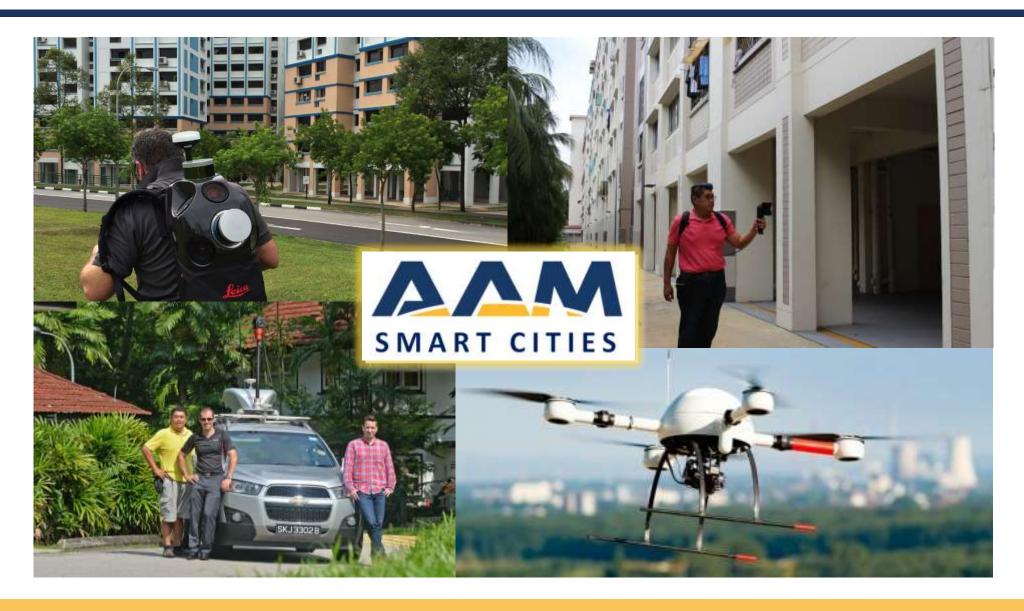






### NEW WAYS TO CAPTURE REALITY





### MODEL ENHANCEMENT



Enhancement at ground level





### DIGITAL DATABASE OF AN ENTIRE CITY





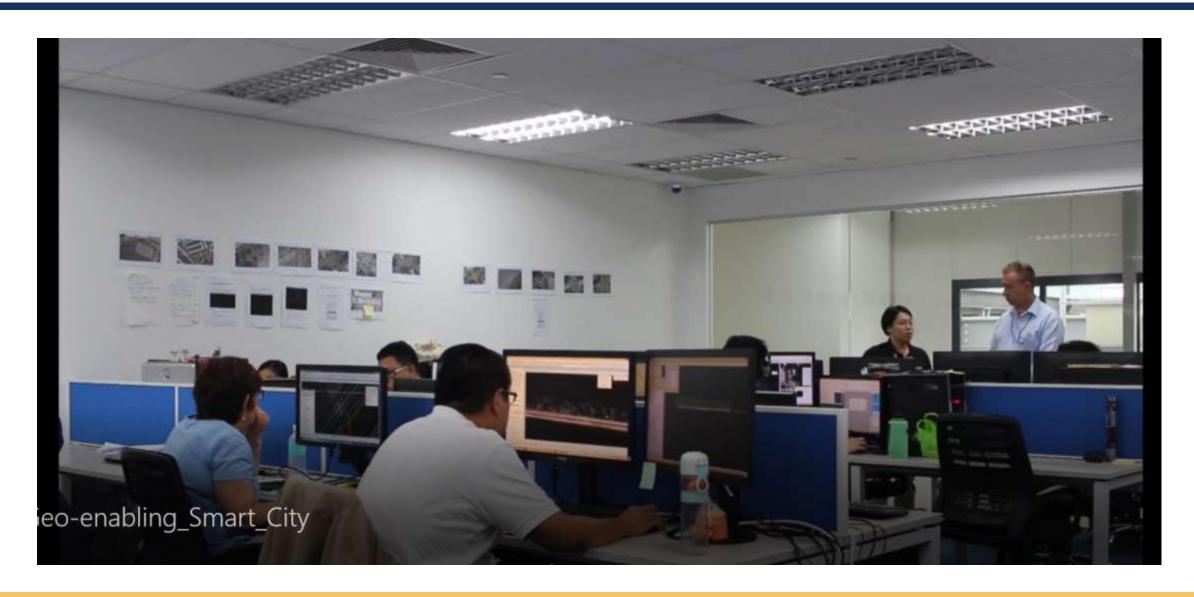
### PUTTING IT TOGETHER - A DIGITAL TWIN





### PEOPLE ARE STILL THE KEY





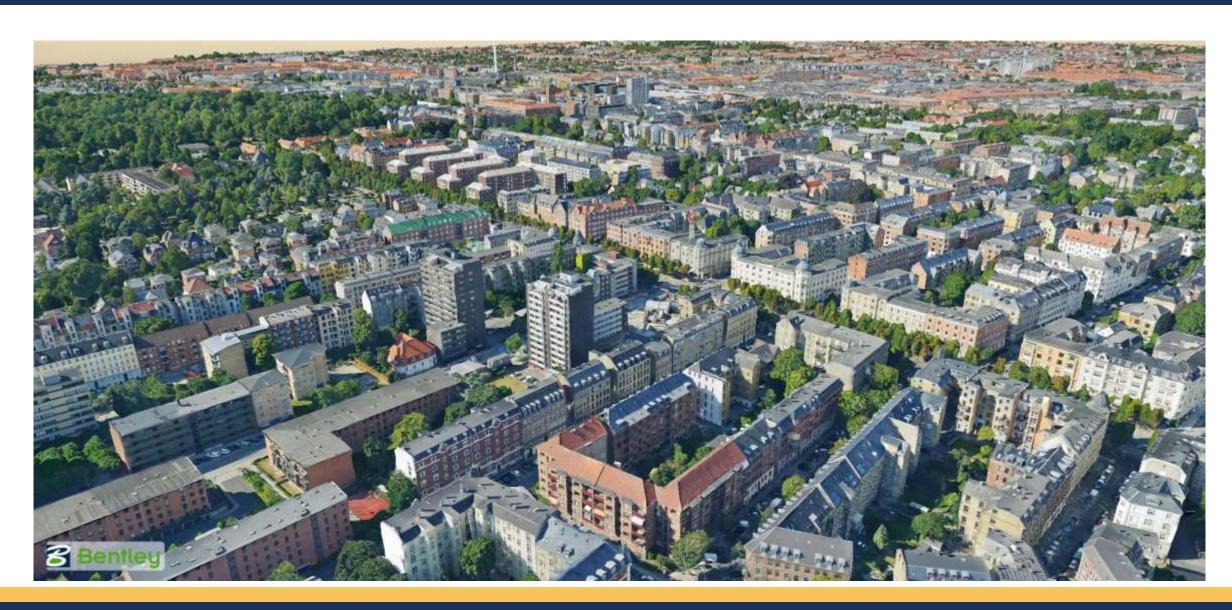
### REALITY MESH – THE NEW (3D) ORTHOPHOTO ?





### COPENHAGEN 3D – REALITY MESH

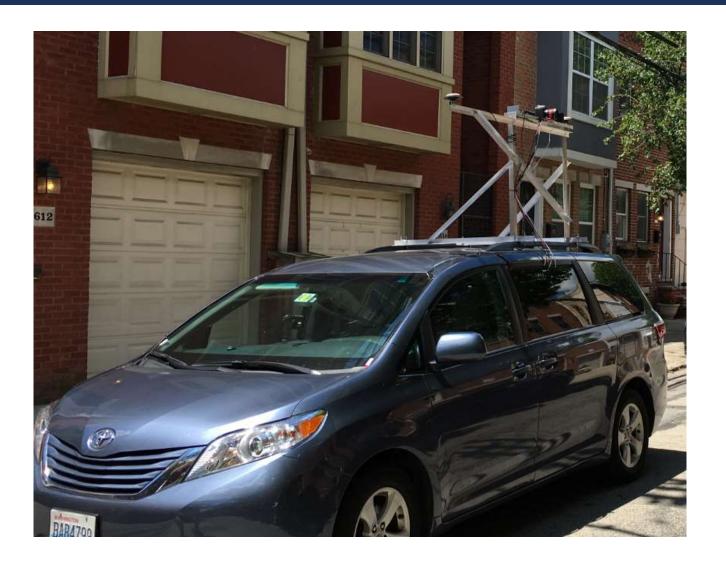




### AUTOMATED FAÇADE TEXTURING FROM MOBILE MAPPING



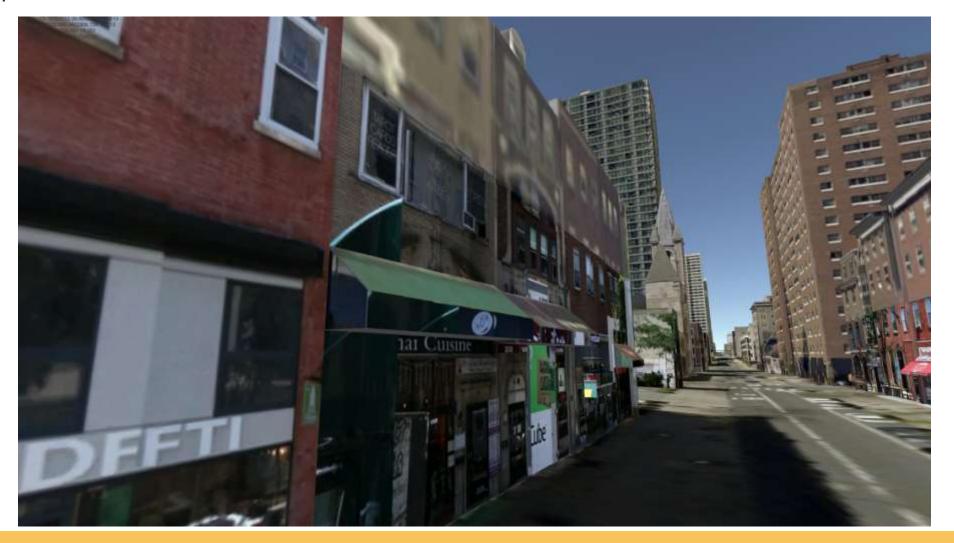
Philadelphia Street Level



## AUTOMATED FAÇADE TEXTURING FROM MOBILE MAPPING



Philadelphia Street Level



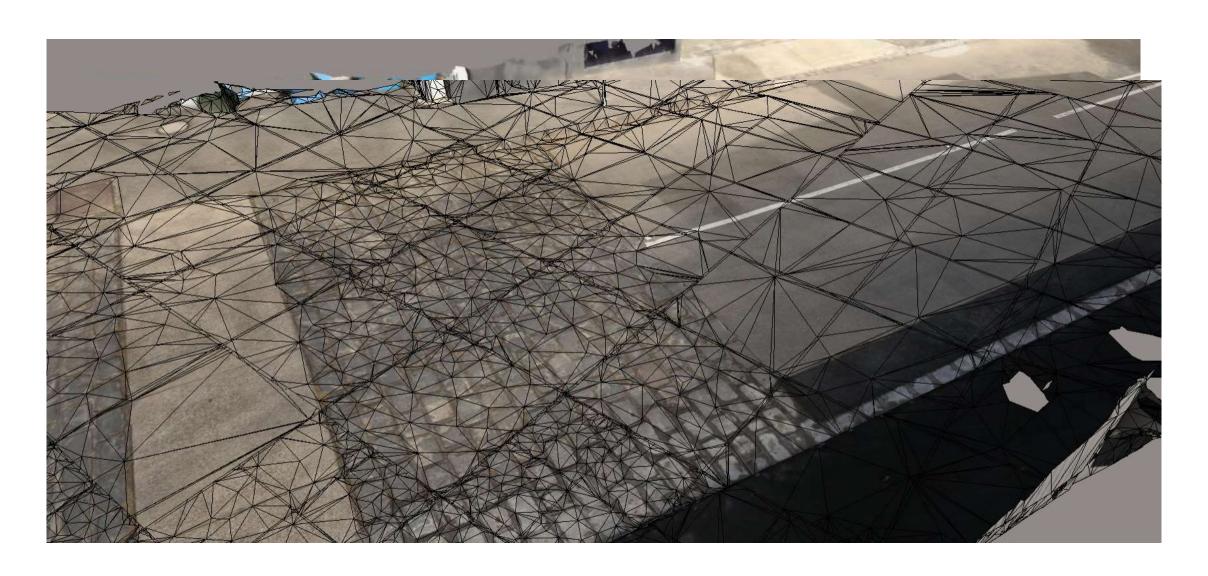
### REALITY MESHES – ROAD LEVEL





### REALITY MESHES – ROAD LEVEL





#### USE CASE - SOCIAL COLLABORATION / URBAN PLANNING



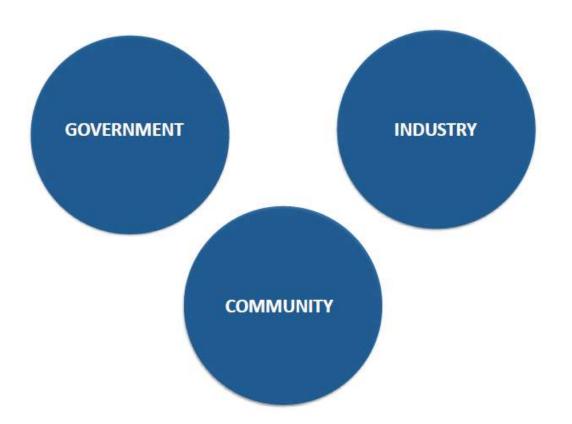


Community Engaged Urban Planning

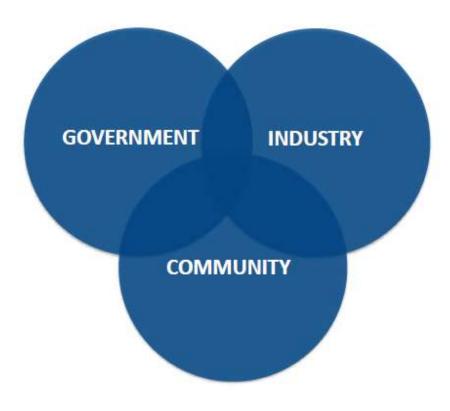
### SOCIAL COLLABORATION / URBAN PLANNING



**Traditional Approach** 



**Smart City Approach** 







### **QUESTIONS**





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