Building Attributes Ruleset for Jakarta and Bangkok Building Stock

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- Development of Economic Exposure Data (EED) for cities requires detailed characterization of building attributes such as building height, footprint area, occupancy, age, construction type and replacement cost
- Rulesets for such building attributes are developed for Jakarta and Bangkok using building heights and footprint areas as inputs as following similar earlier work for Taipei
- These rulesets are applied in EED development using building heights and footprint areas extracted from high resolution satellite imagery in a sister project
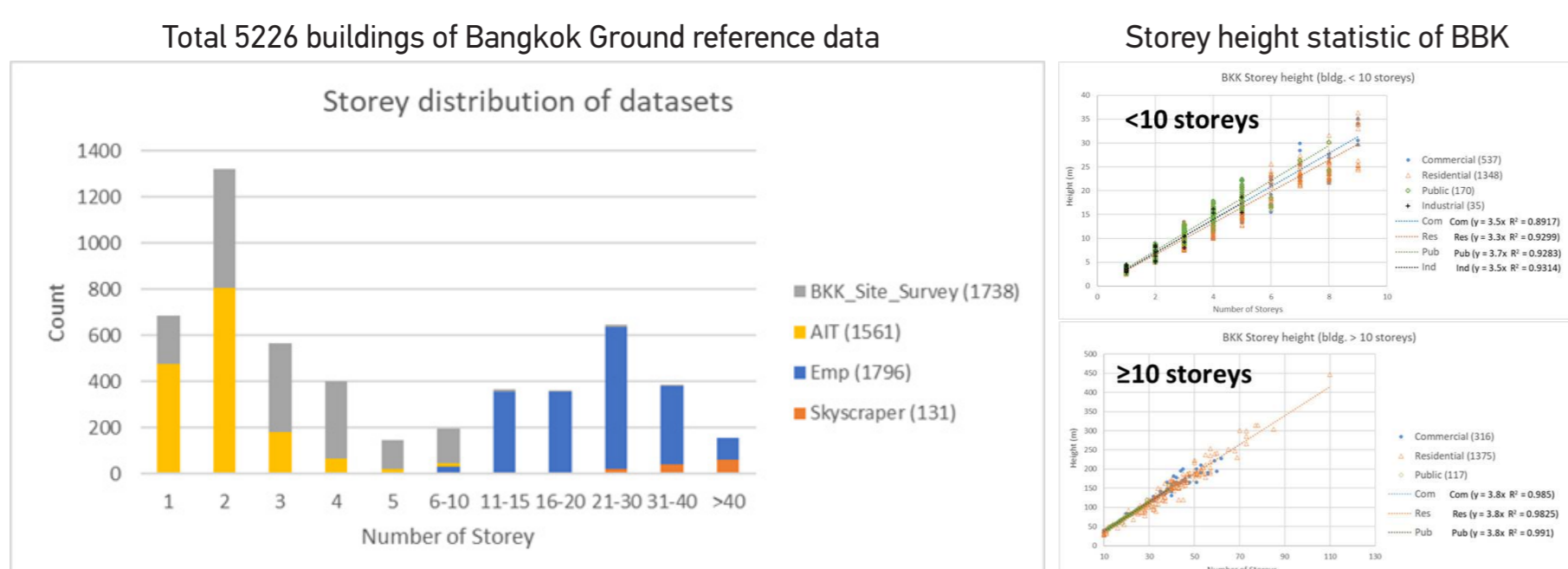
① Bangkok Study Area

Data Source
1. Site survey
2. Open data from website
   (1) Emporis
   (2) Skyscraper center

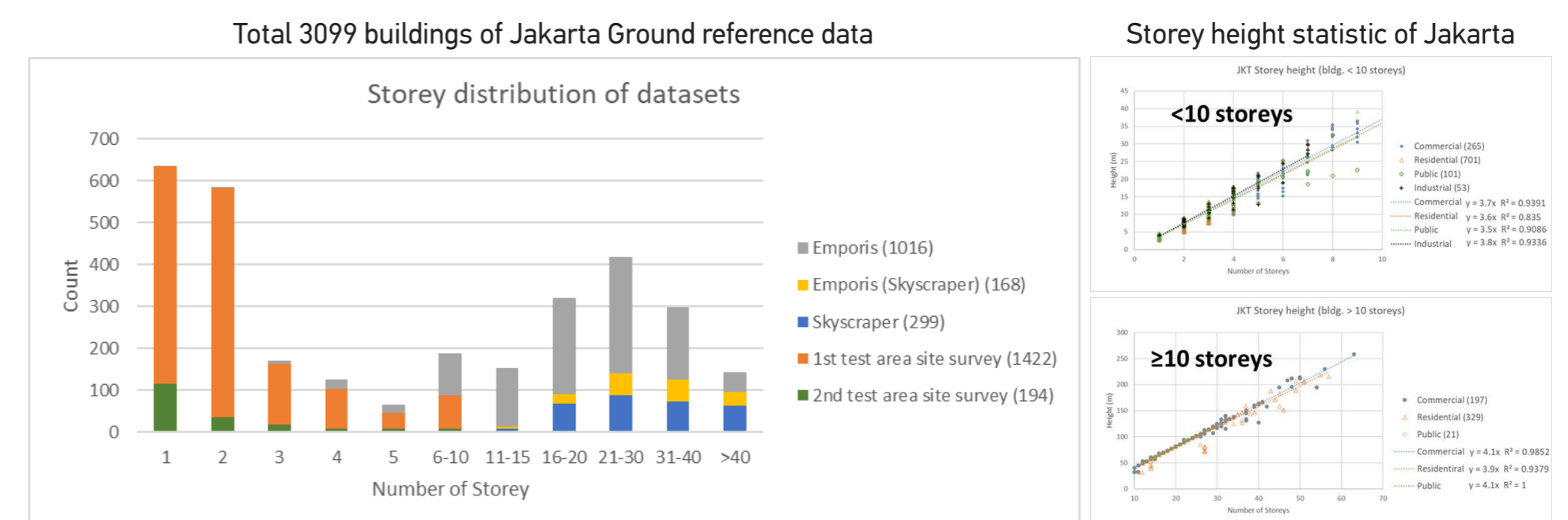Building Footprints in Bangkok

① Jakarta Study Area

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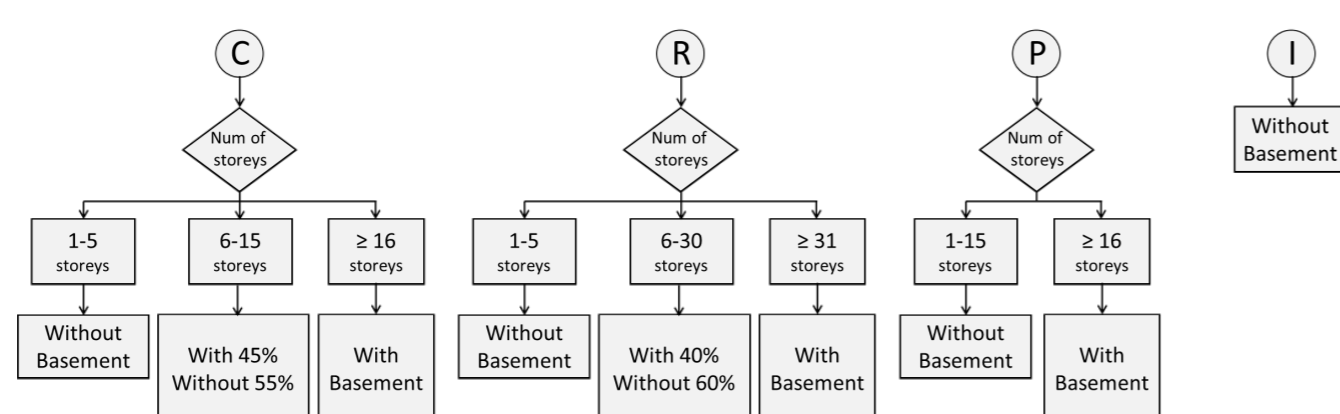
Building Footprints in Jakarta

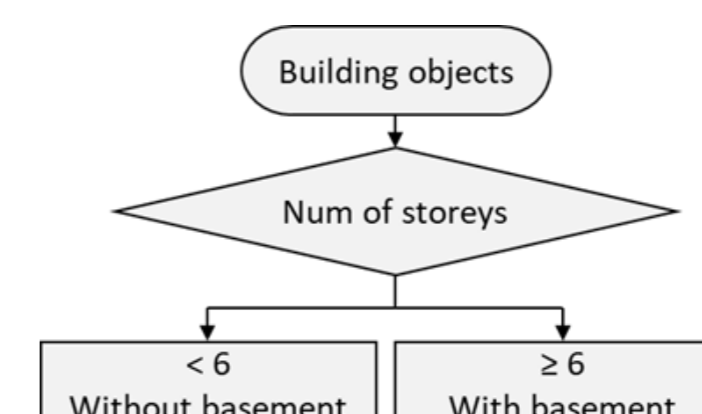## ② Storey Distribution and Storey Height Ruleset

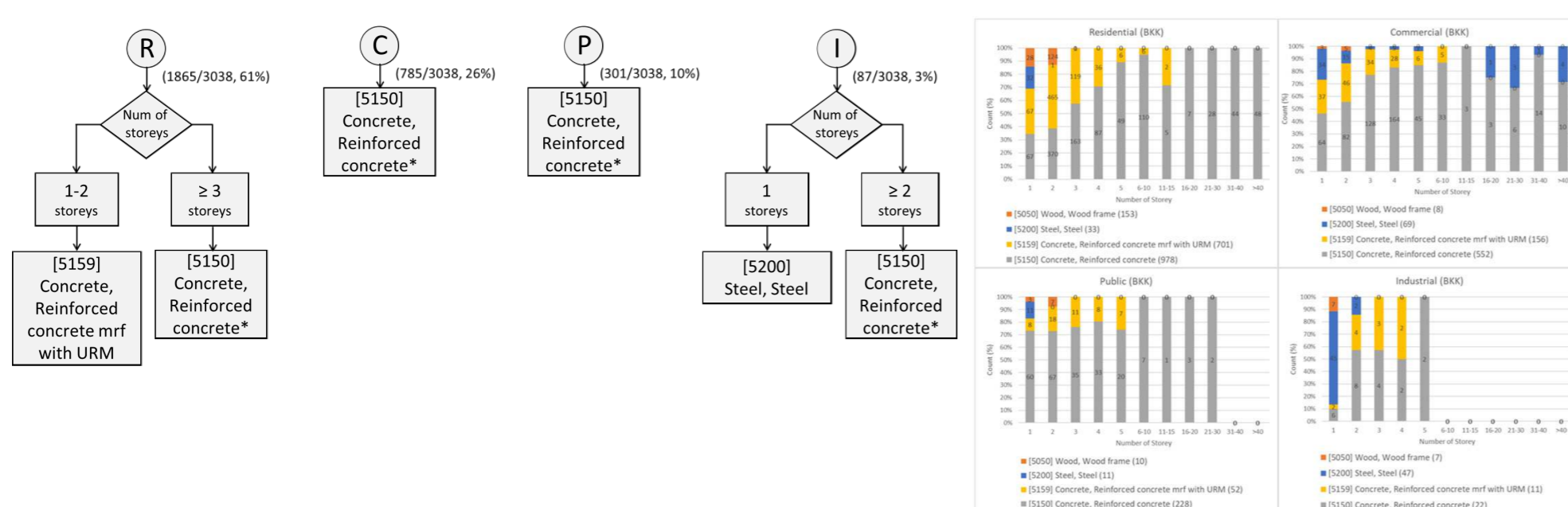## ② Storey Distribution and Storey Height Ruleset

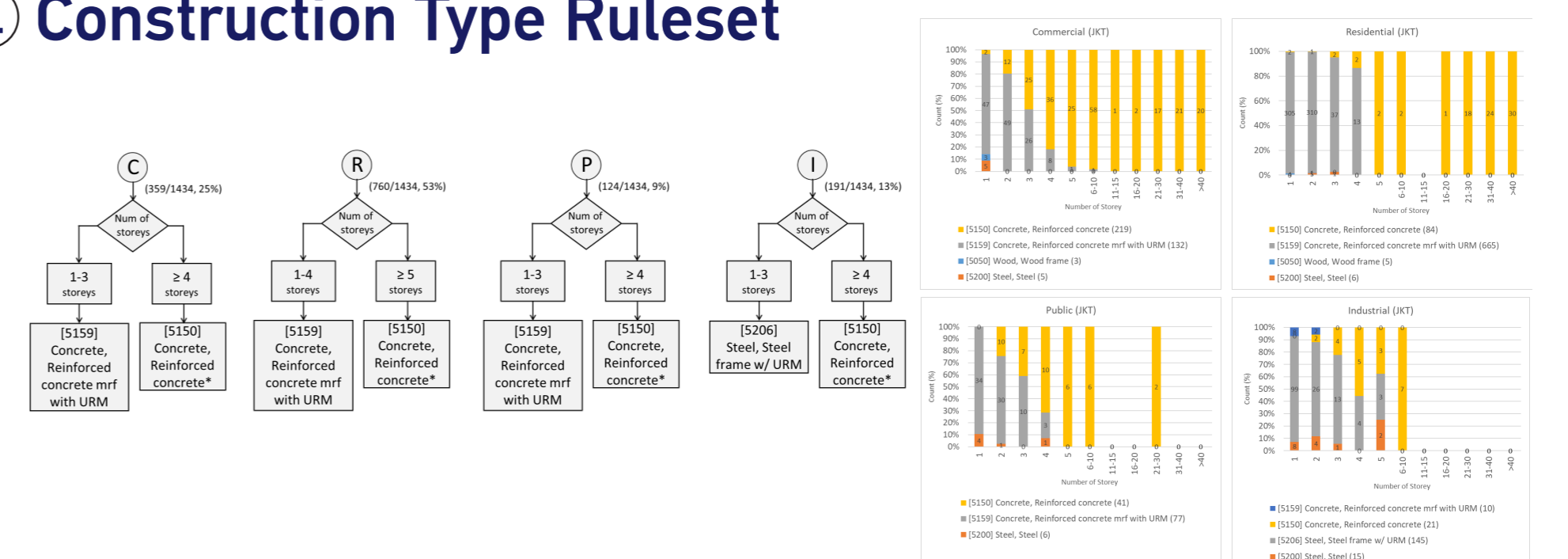

③ Building Basement Ruleset

③ Building Basement Ruleset

④ Construction Type Ruleset

④ Construction Type Ruleset

Summary

- Project developed rulesets for ready evaluation of building attributes using height and footprint area extracted from satellite imagery as inputs
- Prediction accuracies exceeding 80% achieved
- Developed ruleset for building attributes together with height and footprint area form a detailed Economic Exposure Dataset suitable for insurance applications

EED Ruleset Overall Accuracy of Bangkok and Jakarta

Compared attributes		Overall accuracy of Bangkok	Overall accuracy of Jakarta
number of floors	abs(dF) <= 1F	85%	88%
	abs(dF) <= 2F	92%	95%
	abs(dF) <= 3F	95%	97%
with / without basement		96%	95%
occupancy		66%	79%
construction type		79%	83%

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