

# GBI PROFESSIONAL SERIES

Seminar on

# MISTAKES

## IN DA, CVA, & GREEN COST SUBMISSION

7 September 2017 (Thursday) | 8:30 AM - 6:00 PM (Full day) | MyIPO, Menara UOA, Bangsar

## GENERAL MISTAKES IN GBI SUBMISSION

Ar Michael Ching

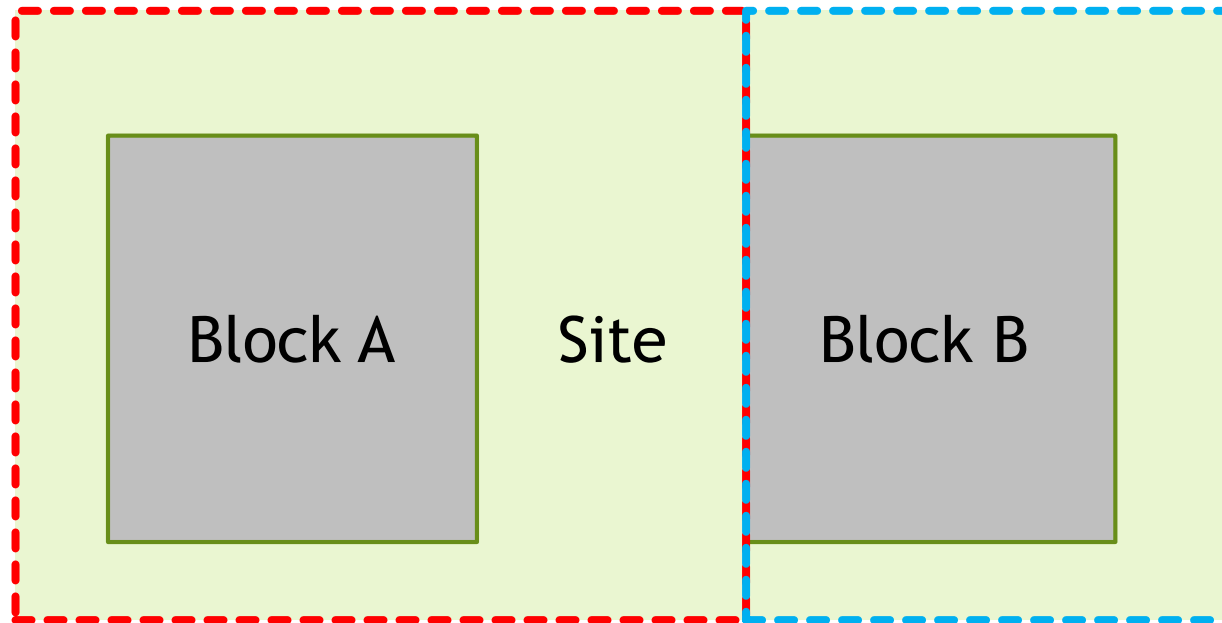


# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ **Boundary Demarcation**
- ▶ **Virtual Boundary** - Applicable to building **without** podium

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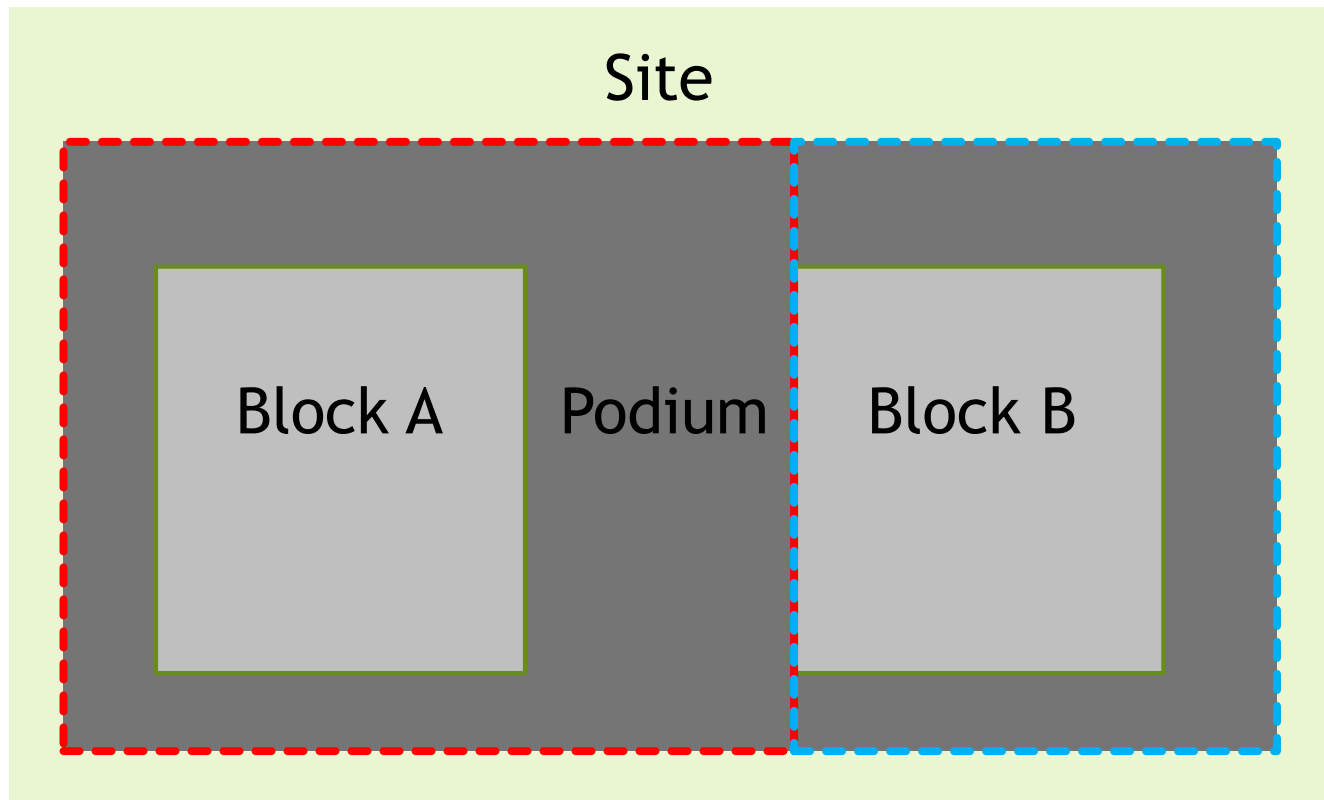


# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ **Boundary Demarcation**
- ▶ **Virtual Boundary** - Applicable to building **without** podium
  - ▶ All criteria to be assessed separately, except
    - ▶ Site Selection & Planning
    - ▶ Re-habitation of Brownfield Sites OR Re-development of Existing Building
    - ▶ Earthwork
    - ▶ Workers' Site Amenities
    - ▶ Stormwater Design
    - ~~▶ Greenscape (including composting) and Water Bodies AND Hardscape~~
    - ~~▶ Public Transportation AND Community Connectivity~~

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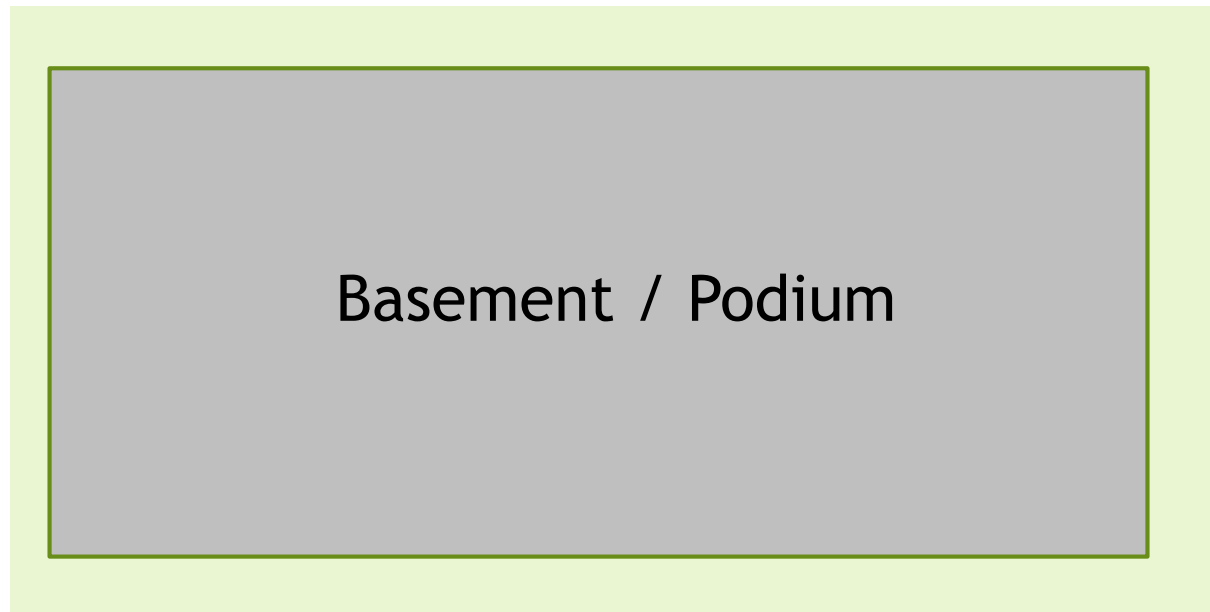


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  - ▶ Earthwork
  - ▶ Workers' Site Amenities
  - ▶ Stormwater Design
  - ▶ Greenscape and Water Bodies AND Hardscape
  - ▶ Public Transportation AND Community Connectivity (**if share entry points**)
  - ▶ Dedicated Cycling Network

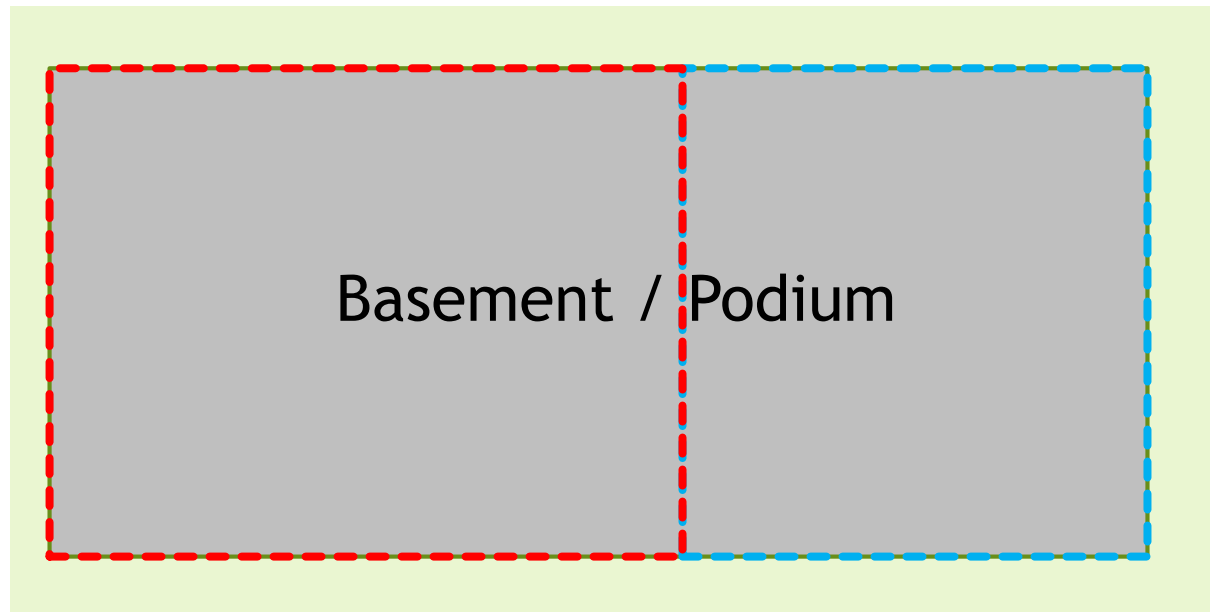
# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ Boundary Demarcation
- ▶ Virtual Boundary - Carpark



# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ Boundary Demarcation
- ▶ Virtual Boundary - Carpark
- ▶ Criteria to be assessed separately, if boundary if clearly define







# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ Contradiction Information
- ▶ Occupancy Load
  - ▶ Different occupancy load used in NRNC EE5 and WE1



# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ **Contradiction Information**
- ▶ **Glass Specification**
  - ▶ Glass specified different from MR2 and MR3
  - ▶ VLT percentage not used in Daylighting calculation

# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ **Contradiction Information**
- ▶ **Other Materials Specification**
  - ▶ Low VOC material specified different from MR2 and MR3
  - ▶ Non-Formaldehyde material specified different from MR2 and MR3



# GENERAL MISTAKES IN GBI SUBMISSION

- ▶ Contradiction Information
- ▶ Area Calculation
  - ▶ Landscape area different from WE3

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## MISTAKES IN EE (PASSIVE) SUBMISSION

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# DA

# DESIGN ASSESSMENT

# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ OTTV

## ▶ GENERAL

- ▶ Submission of Location Plan
- ▶ Site Plan indication of Orientation
- ▶ Complete GA Drawings, including Roof Plan
- ▶ Submission of Blow-up Sections illustrating SC2 calculation (R1 & R2)
- ▶ Submission of Perspective

# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ OTTV
- ▶ BUILDING DEMARCATION
  - ▶ Include all external façades
  - ▶ **NEW** - Use of local shading coefficient,  $R_v$  and  $R_h$  calculation for complex external façade and internal courtyard





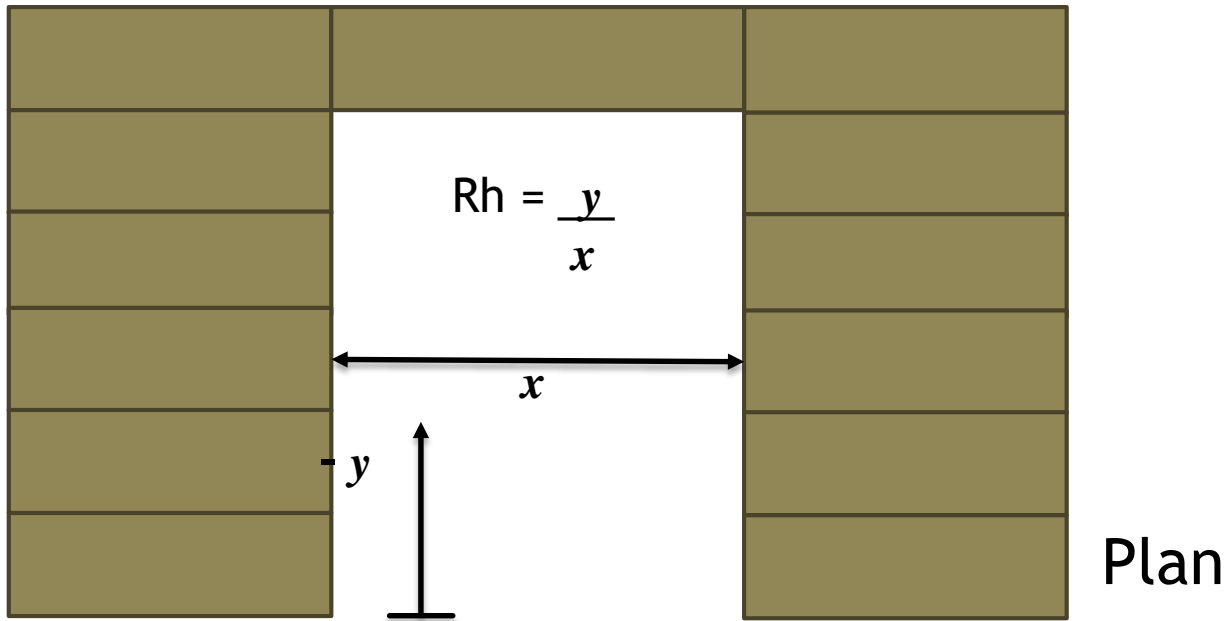
# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ OTTV
- ▶ BUILDING DEMARCATION

Example of a U-shaped Building

# MISTAKES IN EE (PASSIVE) SUBMISSION

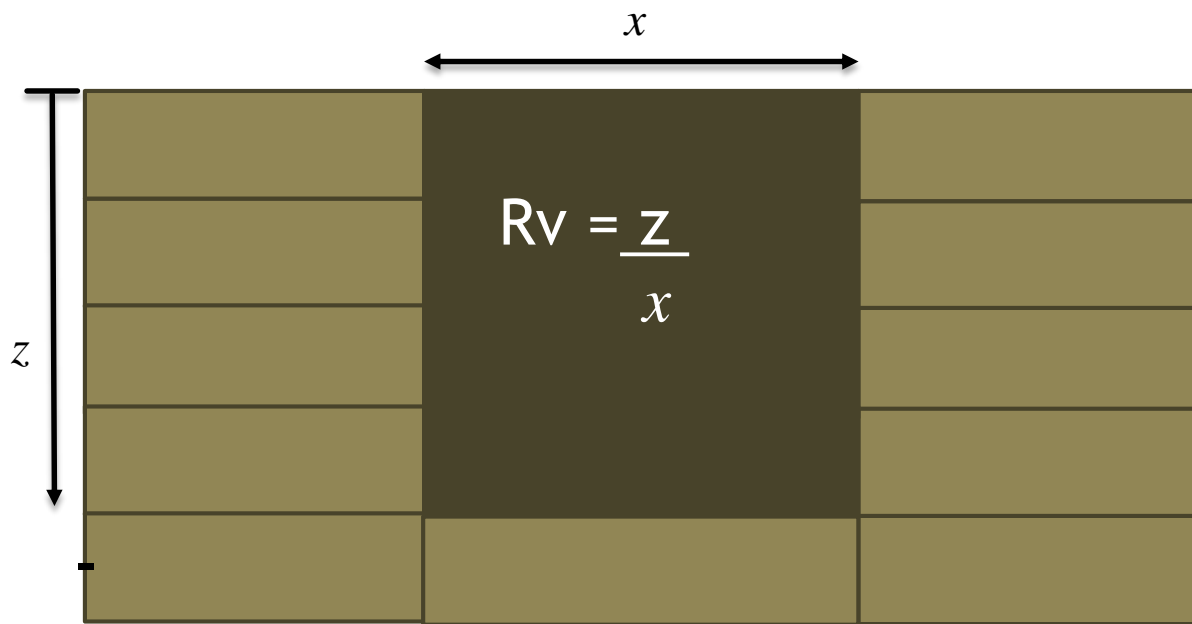
- ▶ OTTV
- ▶ BUILDING DEMARCATION



$x$  = opening width of U-shaped building  
 $y$  = distance from the unshaded surface due to horizontal depth

# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ OTTV
- ▶ BUILDING DEMARCATION



Front Elevation

$x$  = opening width U-shaped building

$z$  = distance from the unshaded surface due to vertical depth

# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ OTTV

## ▶ BUILDING DEMARCATION

### ▶ Horizontal Shading of U-shape Building,

- ▶  $R_h < 1$ , No local shading; shading coefficient = 1. To include all the internal façades in the OTTV calculation.
- ▶  $R_h \geq 1$ , Local shading peaked; shading coefficient range from 0.35 to 0.5 depending on orientation and facing. To assume all the affected internal façades as wall in the OTTV calculation.

# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ OTTV

## ▶ BUILDING DEMARCATION

### ▶ Vertical Shading of U-shaped Building,

- ▶  $R_v < 3$ , No local shading; shading coefficient = 1. To include all the internal façades in the OTTV calculation.
- ▶  $R_v \geq 3$ , Local shading peaked; shading coefficient range from 0.35 to 0.5 depending on orientation and facing. To assume all the affected internal façades as wall in the OTTV calculation.

# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ OTTV
- ▶ MINIMUM REQUIREMENT AND AVERAGING
  - ▶ NRNC and RNC EE1 - All buildings must meet MS1525 minimum requirement. Score base on highest OTTV value
  - ▶ RNC EE2 - Averaging is permitted provided EE1 is score

# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ OTTV
- ▶ GLASS U-VALUE AND SC VALUE
  - ▶ Use NFRC U-Value & Solar Gain Coefficient (SHGC) Value

# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ ROOF U-VALUE

## ▶ MINIMUM REQUIREMENT AND AVERAGING

- ▶ NRNC and RNC EE1 - All roofs must meet MS1525 minimum requirement. Score base on highest U-Value
- ▶ RNC EE2 - Averaging is permitted provided EE1 scored



# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ ROOF U-VALUE

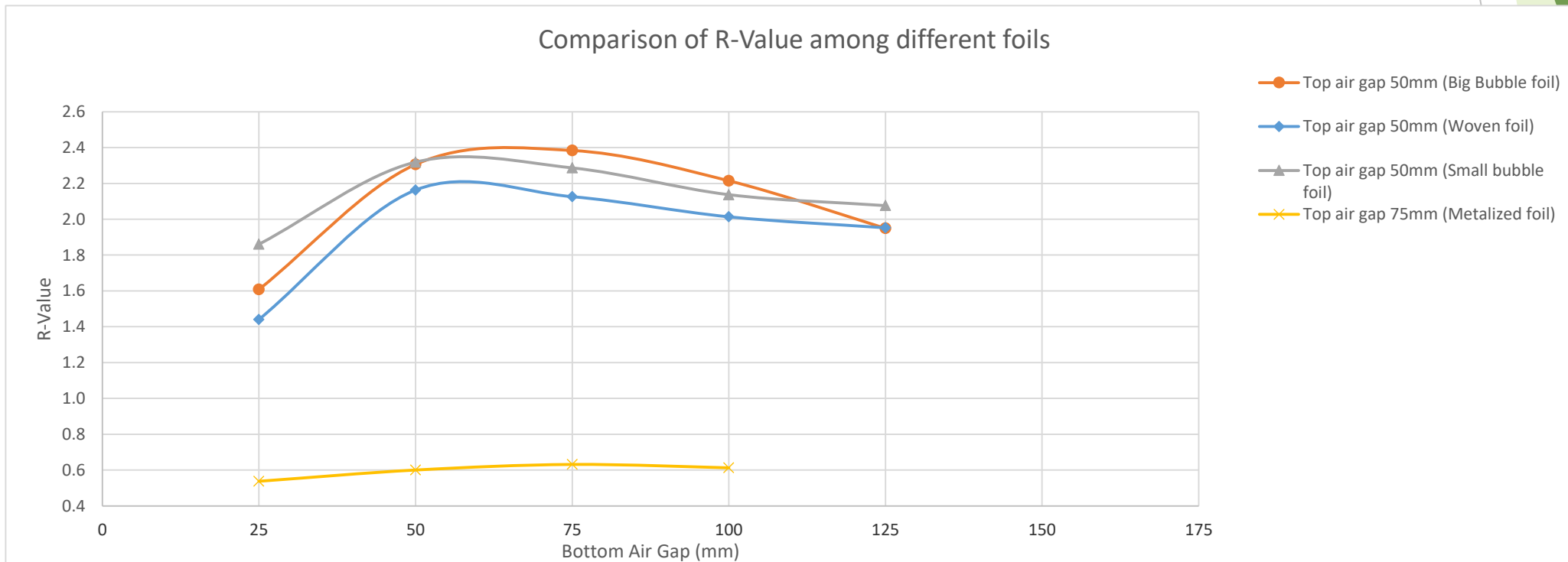
## ▶ R-VALUE OF RADIANT BARRIER INSULATION

- ▶ Discussion with Reflective Insulation Manufacturers of Malaysia (RIMM) on-going
- ▶ Apply a Reduction Coefficient to Air Gap R-value, due to:-
  - ▶ Angle of Roof
  - ▶ Varies Attic (Air Gap below the reflective foil) dimension
  - ▶ Imperfect installation (sagging) occur during construction
  - ▶ Dusty condition at site, which affect the emissivity

# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ ROOF U-VALUE

## ▶ R-VALUE OF RADIANT BARRIER INSULATION



# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ **ROOF U-VALUE**
- ▶ **PRIMARY ROOF**
- ▶ Mechanical plant, equipment (including PV) and water tank, which exposed to the sky, the Roof U-value are calculated on the Primary Roof construction

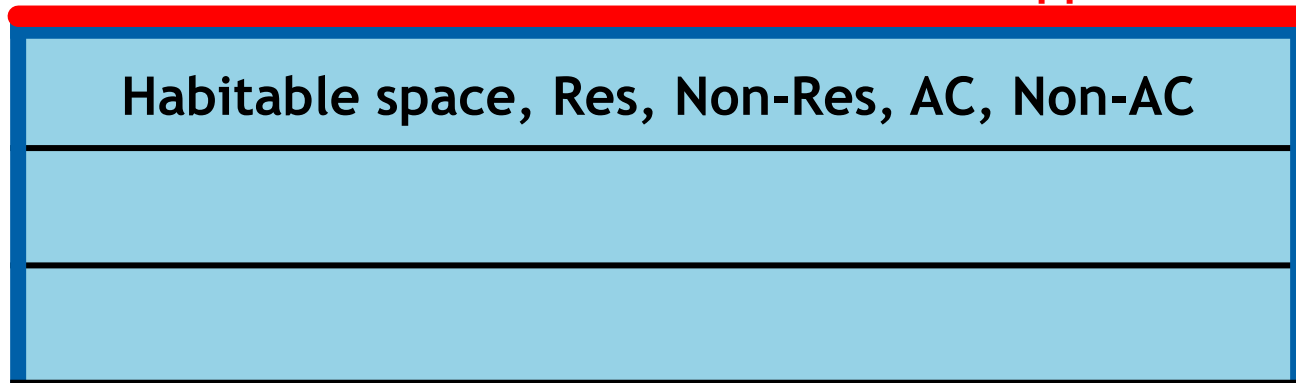
# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ ROOF U-VALUE
- ▶ PRIMARY ROOF

Habitable or non-habitable space

Primary Roof

Roof U-value applies here



Section

# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ ROOF U-VALUE

## ▶ SECONDARY ROOF - EXEMPTION

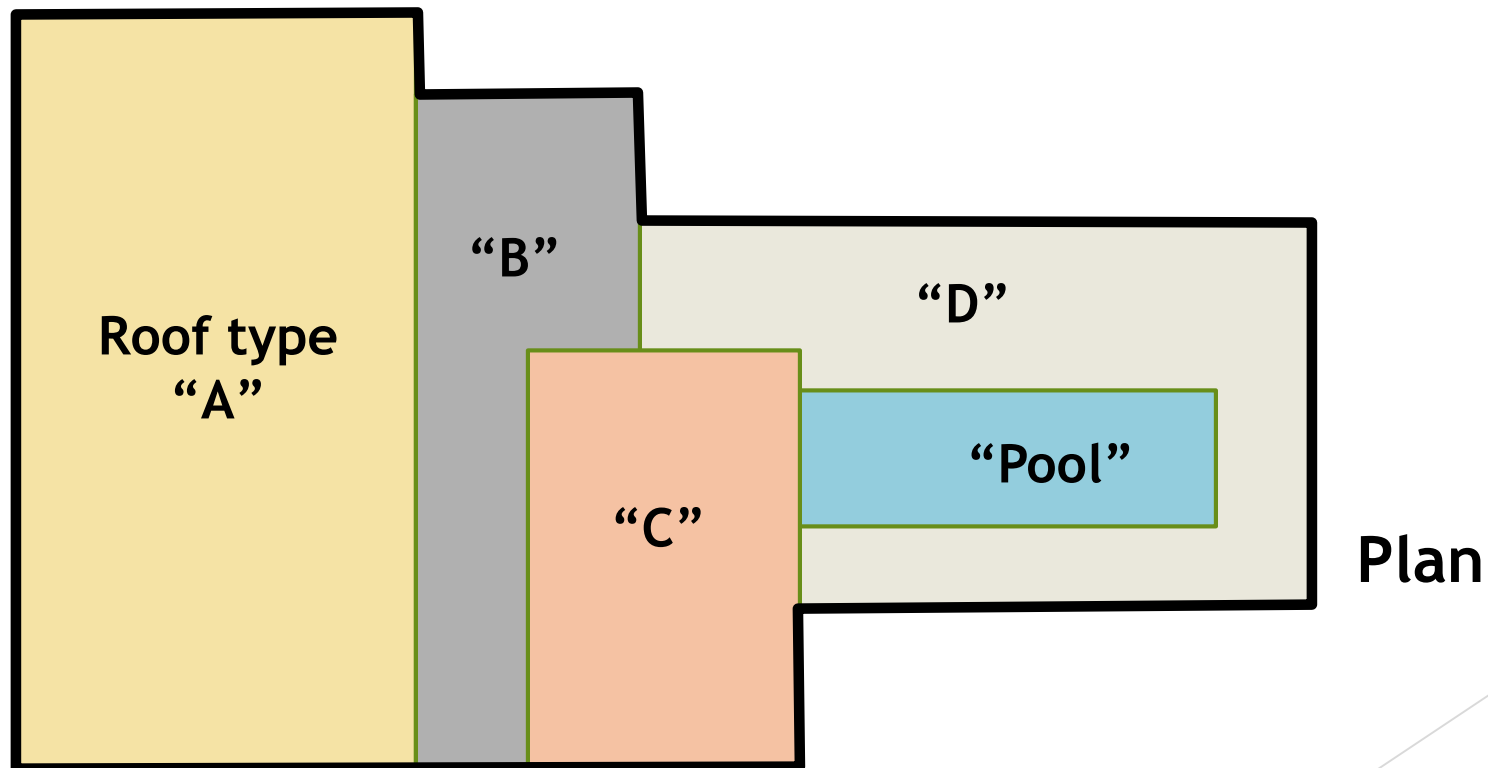
- ▶ Exempt from Roof U-value calculation if the following 2 conditions are met:-
  - ▶ Urban Heat Island (UHI)
  - ▶ Ventilation (ACH) and Height of Secondary Roof

# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ **ROOF U-VALUE**
- ▶ **SECONDARY ROOF - URBAN HEAT ISLAND (UHI)**
  - ▶ UHI is about reflecting away Solar Radiation to achieve a cooler micro-climate
  - ▶ Secondary Roof like horizontal pergolas or screens can be used to be part of the calculation to reduce UHI

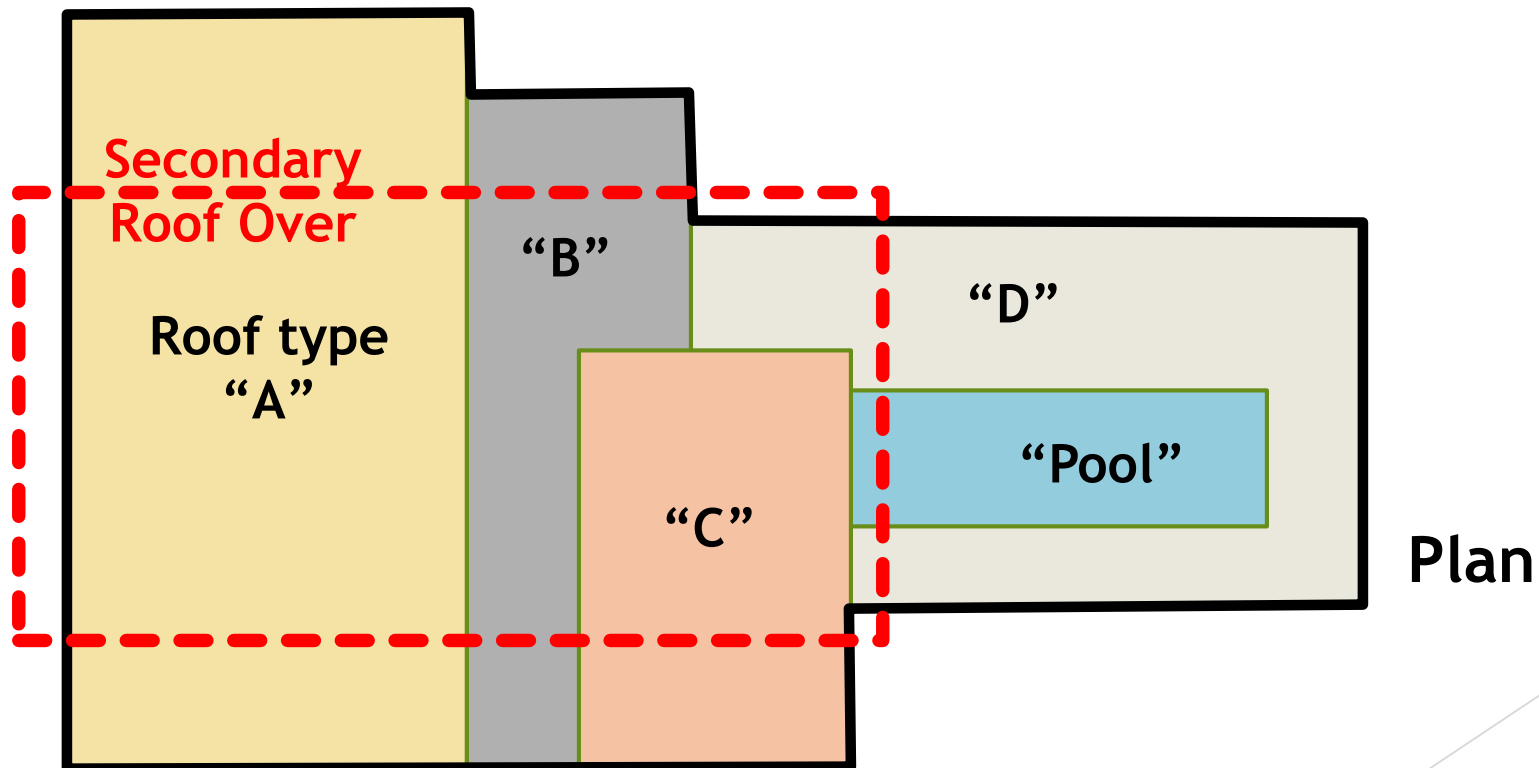
# MISTAKES IN EE (PASSIVE) SUBMISSION

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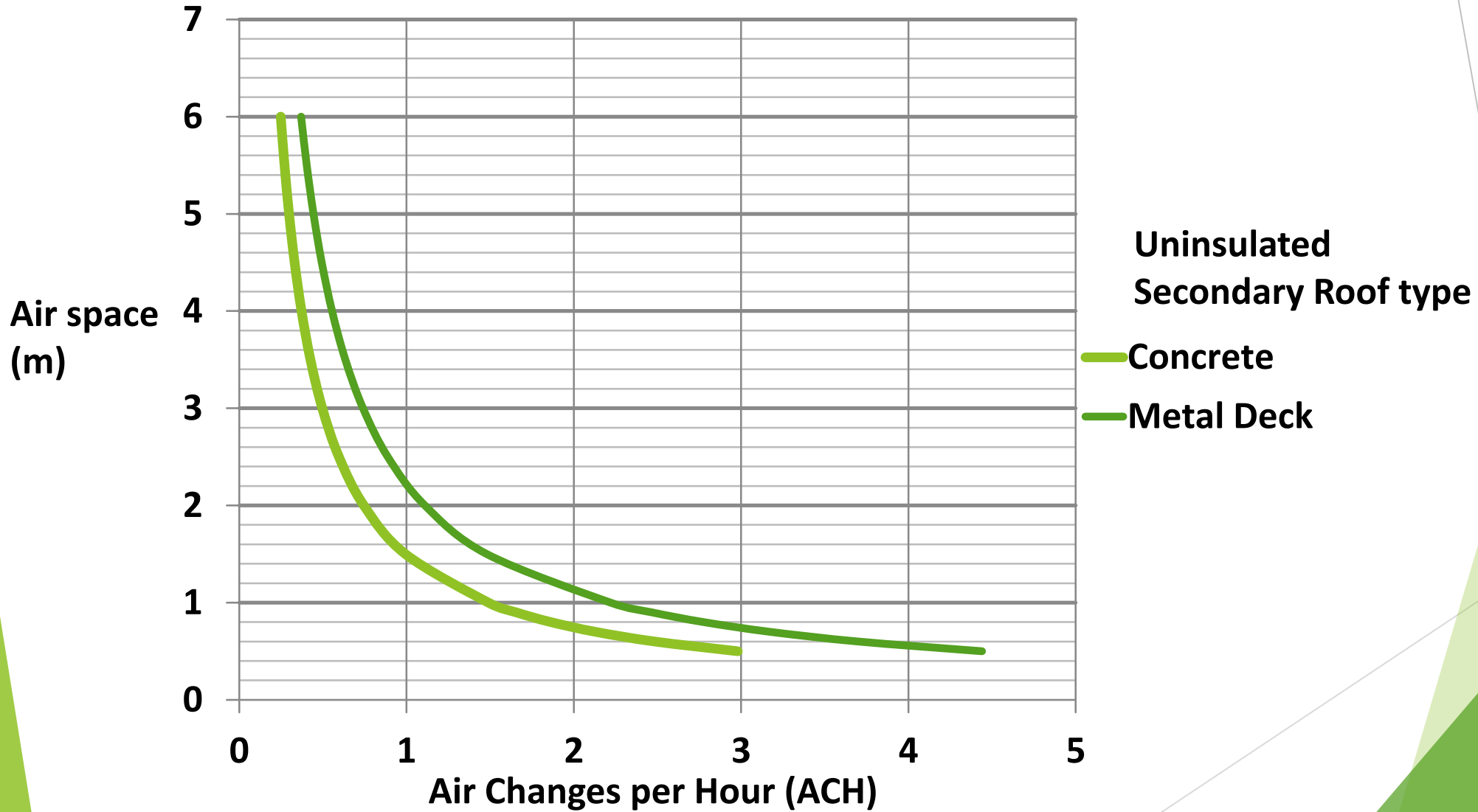




# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ ROOF U-VALUE
- ▶ SECONDARY ROOF - VENTILATION AND  
HEIGHT OF SECONDARY ROOF

## Secondary Roofs



# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ **ROOF U-VALUE**
- ▶ **EXISTING BUILDING**
- ▶ For renovation works, where the original roof is not replaced, insulation below rc slab in the ceiling space is considered

# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ **RTTV**
- ▶ Applies if the roof is provided with skylight, and the entire enclosure below is fully air-conditioned



# CVA

## COMPLETION & VERIFICATION ASSESSMENT

# MISTAKES IN EE (PASSIVE) SUBMISSION

## ▶ EVIDENCE OF MATERIALS USED

- ▶ Submit either one of the following:-
  - ▶ Purchase Order (PO) from the Main Contractor
  - ▶ Letter of Confirmation from Principle Supplier
  - ▶ Copy of PCP Material Approval Form

# MISTAKES IN EE (PASSIVE) SUBMISSION

- ▶ **DATA COLLECTION - RNC3**
- ▶ GBIF to propose location of the Thermal Couples for GBI consideration
- ▶ Minimum 3 conservative days record



**Malaysia Green Building Confederation**

**GBI PRO SERIES 2017**

**THANK YOU**