Multiple SBM Building System Objects were generated. For simplicity, all SBM Building Objects are cuboid, but may be tall and thin, short and wide, or anything in between. Multiple building heights were defined. Valid SBM outputs required a width : height ratio greater than 0.125.

The buildings were modelled with different heat loss/gains characteristics.

The Standard Building Model (SBM) generated 24.7 million cases. Each case is assessed on the basis of both net carbon emissions and net energy demand.

Each SBM case assessment output is generated with a unique 14 unit case code whereby each unit value identifies a particular characteristic of the case in question (see Table 1).

Table 1: SBM case code units, characteristics and values.

|  |  |  |  |
| --- | --- | --- | --- |
| **Case code unit**  | **Input variable (Classification tree feature)** | **Case characteristic** | **Case code unit value**  |
| 1 | Building location | Athens | 1 |
| Carcassonne | 2 |
| Macapa | 3 |
| Mumbai | 4 |
| Oslo | 5 |
| Seattle | 6 |
| 2 | Construction material | Brick | 1 |
| Straw (including sequestration) | 2 |
| Straw (excluding sequestration) | 3 |
| 3 | Calculation boundary | Operational only | 1 |
| Operational + Embodied | 2 |
| 4 | Balance period | Annual | 1 |
| Monthly | 2 |
| 5 | PV location | Onsite | 1 |
| Remote | 2 |
| 6 | Infiltration level (air changes per hour at normal pressure) | 0.042 + MVHR | 1 |
| 0.700 | 2 |
| 0.343 | 3 |
| 7 | Occupancy density | No occupants | 1 |
| 35 m2/person | 2 |
| 20 m2/person | 3 |
| 8 | PV specification | Low embodied metrics | 1 |
| High embodied metrics | 2 |
| 9 | Glazing U-value (W/m2K) | 1.4, 0.8, 0.68 | As case label |
| 10 | Wall U-value (W/m2K) | 0.10 – 0.18 | As case label |
| 11 | Glazing % | 10 - 80 | As case label |
| 12 | Number of storeys | 1 - 32 | As case label |
| 13 | Width (m) | Calculated value (see Table 4) | As case label |
| 14 | Footprint (m2) | 45 – 450 | As case label |