**公共建筑换气次数**

**计算书**

|  |  |
| --- | --- |
| 工程名称 | 姜城旧里，绿巷蓬启 |
| 工程地点 | 焦作 |
| 设计编号 |  |
| 建设单位 | 河南理工大学 |
| 设计单位 | 河南理工大学 |
| 设 计 人 |  |
| 校 对 人 |  |
| 审 核 人 |  |
| 设计日期 | 2021年12月07日 |



|  |  |
| --- | --- |
| 采用软件 | 绿建斯维尔建筑通风Vent202020 |
| 软件版本 | 20200606 |
| 研发单位 | 北京绿建软件股份有限公司 |
| 正版授权码 | T18339172889 |

# 建筑概况

|  |  |
| --- | --- |
| 工程名称 | 姜城旧里，绿巷蓬启 |
| 工程地点 | 焦作 |

# 计算依据

1. 《绿色建筑评价标准》GB/T50378—2019

2. 《绿色建筑评价技术细则》

3. 姜城旧里，绿巷蓬启相关建筑图纸

# 参考标准

《绿色建筑评价标准》GB/T50378—2019 中5.2.10条款 对公共建筑的室内自然通风效果按以下规则评分：

根据在过渡季典型工况下主要功能房间平均自然通风换气次数不小于 2 次/h 的面积比例，按照下表的规则评分，最高得 8 分。

表1 公共建筑过渡季节典型工况下主要功能房间自然通风评分规则

|  |  |
| --- | --- |
| 面积比例 RR | 得分 |
| 70%≤RR＜80% | 5 |
| 80%≤RR＜90% | 6 |
| 90%≤RR＜100% | 7 |
| RR=100% | 8 |

# 计算方法

本项目采用多区域网络法对该建筑室内换气次数进行计算，多区域网络法即把室内各房间分为不同的通风换气区域，以门窗风压作为边界条件，不同区域之间通过联通的门窗作为连接，进行数据的传输，最终获得各个房间的换气次数。

房间换气次数的计算源于通风路径空气质量流量的计算，基于多区域网络法的空气质量流量计算如下式：

$$Q=C\_{d}A\sqrt{\frac{2∆P}{ρ}}$$

$ Q$——房间体积流量（$m^{3}$/s）

∆P——相邻房间之间门窗的风压差；

$C\_{d}$——流量系数，对于大的建筑洞口，取0.5，对于狭小的洞口取0.65，本项目计算取0.6；

*A*——洞口面积（$m^{2}$）

$ρ$——空气密度 （${kg}/{m^{3}}$）

通过上述方法获取一个房间的体积流量$Q$之后，即可进行房间换气次数的计算：

$$Acr=\frac{Q\*3600}{V}$$

$Q$——房间体积流量（$m^{3}$/s）

$Acr$——换气次数（次/h）；

$V$——房间体积（m3）；

# 换气次数计算表

表2 公共建筑过渡季节典型工况下换气次数统计表

|  |
| --- |
| 换气次数大于2次/h的面积比 |
| 换气次数大于2次/h的面积 | 1589.50 | ㎡ |
| 总面积 | 4464.63 | ㎡ |
| 面积比例RR | 35.60 | % |

| 分类 | 体积(m^3) | 面积(m^2) | 换气次数(次/h) |
| --- | --- | --- | --- |
|  建筑 |  |  |  |
|  第1层 |  |  |  |
|  户:1-A | 633.74 | 211.25 |  |
|  1004[房间] | 97.15 | 32.38 | 0.00 |
|  1007[房间] | 81.41 | 27.14 | 0.00 |
|  1008[房间] | 81.41 | 27.14 | 0.00 |
|  1009[房间] | 73.22 | 24.41 | 0.00 |
|  1010[房间] | 203.40 | 67.80 | 1.55 |
|  户:1-B | 633.74 | 211.25 |  |
|  1004[房间] | 97.15 | 32.38 | 0.00 |
|  1007[房间] | 81.41 | 27.14 | 0.00 |
|  1008[房间] | 81.41 | 27.14 | 0.00 |
|  1009[房间] | 73.22 | 24.41 | 0.00 |
|  1010[房间] | 203.40 | 67.80 | 2.91 |
|  户:1-C | 633.74 | 211.25 |  |
|  1004[房间] | 97.15 | 32.38 | 0.00 |
|  1007[房间] | 81.41 | 27.14 | 0.00 |
|  1008[房间] | 81.41 | 27.14 | 0.00 |
|  1009[房间] | 73.22 | 24.41 | 0.00 |
|  1010[房间] | 203.40 | 67.80 | 1.74 |
|  户:1-D | 469.80 | 156.60 |  |
|  1003[房间] | 101.09 | 33.70 | 2.79 |
|  1005[房间] | 63.07 | 21.02 | 0.00 |
|  1006[房间] | 72.14 | 24.05 | 0.00 |
|  1007[房间] | 72.14 | 24.05 | 0.00 |
|  1008[房间] | 161.35 | 53.78 | 2.22 |
|  户:1-E | 469.80 | 156.60 |  |
|  1003[房间] | 101.09 | 33.70 | 3.90 |
|  1005[房间] | 63.07 | 21.02 | 0.00 |
|  1006[房间] | 72.14 | 24.05 | 0.00 |
|  1007[房间] | 72.14 | 24.05 | 0.00 |
|  1008[房间] | 161.35 | 53.78 | 2.36 |
|  户:1-F | 469.80 | 156.60 |  |
|  1003[房间] | 101.09 | 33.70 | 1.60 |
|  1005[房间] | 63.07 | 21.02 | 0.00 |
|  1006[房间] | 72.14 | 24.05 | 0.00 |
|  1007[房间] | 72.14 | 24.05 | 0.00 |
|  1008[房间] | 161.35 | 53.78 | 3.39 |
|  户:1-G | 469.80 | 156.60 |  |
|  1003[房间] | 101.09 | 33.70 | 1.95 |
|  1005[房间] | 63.07 | 21.02 | 0.00 |
|  1006[房间] | 72.14 | 24.05 | 0.00 |
|  1007[房间] | 72.14 | 24.05 | 0.00 |
|  1008[房间] | 161.35 | 53.78 | 0.94 |
|  户:1-H | 333.19 | 111.06 |  |
|  1003[房间] | 97.15 | 32.38 | 7.44 |
|  1004[房间] | 81.41 | 27.14 | 0.00 |
|  1005[房间] | 81.41 | 27.14 | 8.88 |
|  1006[房间] | 73.22 | 24.41 | 0.00 |
|  户:1-I | 333.19 | 111.06 |  |
|  1003[房间] | 97.15 | 32.38 | 2.77 |
|  1004[房间] | 81.41 | 27.14 | 0.00 |
|  1005[房间] | 81.41 | 27.14 | 3.31 |
|  1006[房间] | 73.22 | 24.41 | 0.00 |
|  户:1-J | 333.19 | 111.06 |  |
|  1003[房间] | 97.15 | 32.38 | 5.86 |
|  1004[房间] | 81.41 | 27.14 | 0.00 |
|  1005[房间] | 81.41 | 27.14 | 7.00 |
|  1006[房间] | 73.22 | 24.41 | 0.00 |
|  户:1-K | 333.19 | 111.06 |  |
|  1003[房间] | 97.15 | 32.38 | 4.50 |
|  1004[房间] | 81.41 | 27.14 | 0.00 |
|  1005[房间] | 81.41 | 27.14 | 5.37 |
|  1006[房间] | 73.22 | 24.41 | 0.00 |
|  户:1-L | 333.19 | 111.06 |  |
|  1003[房间] | 97.15 | 32.38 | 5.91 |
|  1004[房间] | 81.41 | 27.14 | 0.00 |
|  1005[房间] | 81.41 | 27.14 | 7.05 |
|  1006[房间] | 73.22 | 24.41 | 0.00 |
|  户:1-M | 174.41 | 58.14 |  |
|  1003[房间] | 83.71 | 27.90 | 2.48 |
|  1005[房间] | 65.90 | 21.97 | 0.00 |
|  1006[房间] | 24.80 | 8.27 | 0.00 |
|  户:1-N | 174.41 | 58.14 |  |
|  1003[房间] | 83.71 | 27.90 | 4.10 |
|  1005[房间] | 65.90 | 21.97 | 0.00 |
|  1006[房间] | 24.80 | 8.27 | 0.00 |
|  户:1-O | 174.41 | 58.14 |  |
|  1003[房间] | 83.71 | 27.90 | 1.86 |
|  1005[房间] | 65.90 | 21.97 | 0.00 |
|  1006[房间] | 24.80 | 8.27 | 0.00 |
|  户:1-P | 139.97 | 46.66 |  |
|  1002[房间] | 101.09 | 33.70 | 4.38 |
|  户:1-Q | 139.97 | 46.66 |  |
|  1002[房间] | 101.09 | 33.70 | 1.11 |
|  户:1-R | 139.97 | 46.66 |  |
|  1002[房间] | 101.09 | 33.70 | 0.49 |
|  户:1-S | 139.97 | 46.66 |  |
|  1002[房间] | 101.09 | 33.70 | 1.97 |
|  户:1-T | 120.00 | 40.00 |  |
|  1002[房间] | 45.00 | 15.00 | 0.00 |
|  1003[房间] | 75.00 | 25.00 | 0.00 |
|  户:1-U | 75.65 | 25.22 |  |
|  1002[房间] | 75.65 | 25.22 | 0.00 |
|  户:1-V | 75.65 | 25.22 |  |
|  户:1-W | 75.65 | 25.22 |  |
|  1002[房间] | 75.65 | 25.22 | 0.00 |
|  户:1-X | 75.65 | 25.22 |  |
|  1002[房间] | 75.65 | 25.22 | 0.00 |
|  户:1-Y | 75.65 | 25.22 |  |
|  1002[房间] | 75.65 | 25.22 | 0.00 |
|  第2层 |  |  |  |
|  户:2-Z | 633.74 | 211.25 |  |
|  2001[房间] | 41.86 | 13.95 | 0.00 |
|  2004[房间] | 41.86 | 13.95 | 0.00 |
|  2006[房间] | 55.30 | 18.43 | 0.00 |
|  2009[房间] | 81.41 | 27.14 | 0.00 |
|  2010[房间] | 81.41 | 27.14 | 0.00 |
|  2011[房间] | 73.22 | 24.41 | 0.00 |
|  2012[房间] | 203.40 | 67.80 | 3.78 |
|  户:2-Z | 633.74 | 211.25 |  |
|  2001[房间] | 41.86 | 13.95 | 0.00 |
|  2004[房间] | 41.86 | 13.95 | 0.00 |
|  2006[房间] | 55.30 | 18.43 | 0.00 |
|  2009[房间] | 81.41 | 27.14 | 0.00 |
|  2010[房间] | 81.41 | 27.14 | 0.00 |
|  2011[房间] | 73.22 | 24.41 | 0.00 |
|  2012[房间] | 203.40 | 67.80 | 2.71 |
|  户:2-Z | 633.74 | 211.25 |  |
|  2001[房间] | 41.86 | 13.95 | 0.00 |
|  2004[房间] | 41.86 | 13.95 | 0.00 |
|  2006[房间] | 55.30 | 18.43 | 0.00 |
|  2009[房间] | 81.41 | 27.14 | 0.00 |
|  2010[房间] | 81.41 | 27.14 | 0.00 |
|  2011[房间] | 73.22 | 24.41 | 0.00 |
|  2012[房间] | 203.40 | 67.80 | 2.30 |
|  户:2-Z | 586.87 | 195.62 |  |
|  2001[房间] | 50.54 | 16.85 | 0.00 |
|  2002[房间] | 96.55 | 32.18 | 6.51 |
|  2003[房间] | 50.54 | 16.85 | 0.00 |
|  2006[房间] | 63.07 | 21.02 | 0.00 |
|  2007[房间] | 72.14 | 24.05 | 0.00 |
|  2008[房间] | 53.78 | 17.93 | 0.00 |
|  2009[房间] | 161.35 | 53.78 | 2.96 |
|  户:2-Z | 586.87 | 195.62 |  |
|  2001[房间] | 50.54 | 16.85 | 0.00 |
|  2002[房间] | 96.55 | 32.18 | 8.73 |
|  2003[房间] | 50.54 | 16.85 | 0.00 |
|  2006[房间] | 63.07 | 21.02 | 0.00 |
|  2007[房间] | 72.14 | 24.05 | 0.00 |
|  2008[房间] | 53.78 | 17.93 | 0.00 |
|  2009[房间] | 161.35 | 53.78 | 1.96 |
|  户:2-Z | 586.87 | 195.62 |  |
|  2001[房间] | 50.54 | 16.85 | 0.00 |
|  2002[房间] | 96.55 | 32.18 | 6.17 |
|  2003[房间] | 50.54 | 16.85 | 0.00 |
|  2006[房间] | 63.07 | 21.02 | 0.00 |
|  2007[房间] | 72.14 | 24.05 | 0.00 |
|  2008[房间] | 53.78 | 17.93 | 0.00 |
|  2009[房间] | 161.35 | 53.78 | 5.24 |
|  户:2-Z | 586.87 | 195.62 |  |
|  2001[房间] | 50.54 | 16.85 | 0.00 |
|  2002[房间] | 96.55 | 32.18 | 10.04 |
|  2003[房间] | 50.54 | 16.85 | 0.00 |
|  2006[房间] | 63.07 | 21.02 | 0.00 |
|  2007[房间] | 72.14 | 24.05 | 0.00 |
|  2008[房间] | 53.78 | 17.93 | 0.00 |
|  2009[房间] | 161.35 | 53.78 | 2.70 |
|  户:2-Z | 246.00 | 82.00 |  |
|  2001[房间] | 75.65 | 25.22 | 0.00 |
|  2002[房间] | 52.70 | 17.57 | 5.39 |
|  2003[房间] | 85.25 | 28.42 | 3.33 |
|  2004[房间] | 32.40 | 10.80 | 8.76 |
|  户:2-Z | 246.00 | 82.00 |  |
|  2001[房间] | 75.65 | 25.22 | 0.00 |
|  2002[房间] | 52.70 | 17.57 | 1.58 |
|  2003[房间] | 85.25 | 28.42 | 0.98 |
|  2004[房间] | 32.40 | 10.80 | 2.57 |
|  户:2-Z | 246.00 | 82.00 |  |
|  2001[房间] | 75.65 | 25.22 | 0.00 |
|  2002[房间] | 52.70 | 17.57 | 7.27 |
|  2003[房间] | 85.25 | 28.42 | 4.49 |
|  2004[房间] | 32.40 | 10.80 | 11.82 |
|  户:2-Z | 246.00 | 82.00 |  |
|  2001[房间] | 75.65 | 25.22 | 0.00 |
|  2002[房间] | 52.70 | 17.57 | 8.85 |
|  2003[房间] | 85.25 | 28.42 | 5.47 |
|  2004[房间] | 32.40 | 10.80 | 14.39 |
|  户:2-Z | 246.00 | 82.00 |  |
|  2001[房间] | 75.65 | 25.22 | 0.00 |
|  2002[房间] | 52.70 | 17.57 | 12.88 |
|  2003[房间] | 85.25 | 28.42 | 7.96 |
|  2004[房间] | 32.40 | 10.80 | 20.94 |
|  户:2-Z | 203.40 | 67.80 |  |
|  2006[房间] | 203.40 | 67.80 | 1.84 |
|  户:2-Z | 203.40 | 67.80 |  |
|  2006[房间] | 203.40 | 67.80 | 2.01 |
|  户:2-Z | 203.40 | 67.80 |  |
|  2006[房间] | 203.40 | 67.80 | 1.02 |
|  户:2-Z | 203.40 | 67.80 |  |
|  2006[房间] | 203.40 | 67.80 | 3.73 |
|  户:2-Z | 203.40 | 67.80 |  |
|  2006[房间] | 203.40 | 67.80 | 1.68 |
|  户:2-Z | 107.76 | 35.92 |  |
|  2001[房间] | 32.76 | 10.92 | 3.16 |
|  2002[房间] | 75.00 | 25.00 | 0.00 |
|  户:2-Z | 83.71 | 27.90 |  |
|  2003[房间] | 83.71 | 27.90 | 0.76 |
|  户:2-Z | 83.71 | 27.90 |  |
|  2003[房间] | 83.71 | 27.90 | 1.93 |
|  户:2-Z | 83.71 | 27.90 |  |
|  2003[房间] | 83.71 | 27.90 | 3.48 |
|  户:2-Z | 59.30 | 19.77 |  |
|  2008[房间] | 59.30 | 19.77 | 0.00 |
|  户:2-Z | 59.30 | 19.77 |  |
|  2008[房间] | 59.30 | 19.77 | 0.00 |
|  户:2-Z | 59.30 | 19.77 |  |
|  2008[房间] | 59.30 | 19.77 | 0.00 |
|  户:2-Z | 59.23 | 19.74 |  |
|  2007[房间] | 59.23 | 19.74 | 0.00 |
|  户:2-Z | 59.23 | 19.74 |  |
|  2007[房间] | 59.23 | 19.74 | 0.00 |
|  户:2-Z | 59.23 | 19.74 |  |
|  2007[房间] | 59.23 | 19.74 | 0.00 |
|  第3层 |  |  |  |

# 结论

该建筑主要功能房间换气次数大于2次**/**h的面积比例为35.60%，按照绿标5.2.10条款要求得0分。

# 附表（门窗风压表）

|  |  |  |  |
| --- | --- | --- | --- |
| 分类 | 编号 | 朝向 | 风压(Pa) |
| ○建筑 |  |  |  |
| ├○第1层 |  |  |  |
| ︱├○户:1-A |  |  |  |
| ︱︱├ 1001[房间] | C1008 | 南 | -0.62 |
| ︱︱├ 1004[房间] | C1008 | 南 | -1.00 |
| ︱︱├ 1007[房间] | C1008 | 北 | -0.01 |
| ︱︱├ 1008[房间] | C1008 | 北 | -0.21 |
| ︱︱├ 1009[房间] | C1008 | 北 | -0.07 |
| ︱︱├ 1010[房间] | C1008 | 北 | -0.29 |
| ︱︱├ 1010[房间] | C1008 | 北 | -0.20 |
| ︱︱└ 1010[房间] | C1008 | 北 | -0.17 |
| ︱├○户:1-B |  |  |  |
| ︱︱├ 1001[房间] | C1008 | 南 | 0.45 |
| ︱︱├ 1004[房间] | C1008 | 南 | -0.51 |
| ︱︱├ 1007[房间] | C1008 | 北 | 0.59 |
| ︱︱├ 1008[房间] | C1008 | 北 | -0.18 |
| ︱︱├ 1009[房间] | C1008 | 北 | 0.56 |
| ︱︱├ 1010[房间] | C1008 | 北 | -0.05 |
| ︱︱├ 1010[房间] | C1008 | 北 | 0.27 |
| ︱︱└ 1010[房间] | C1008 | 北 | 0.36 |
| ︱├○户:1-C |  |  |  |
| ︱︱├ 1001[房间] | C1008 | 南 | 1.02 |
| ︱︱├ 1004[房间] | C1008 | 南 | 1.51 |
| ︱︱├ 1007[房间] | C1008 | 北 | 1.72 |
| ︱︱├ 1008[房间] | C1008 | 北 | 1.36 |
| ︱︱├ 1009[房间] | C1008 | 北 | 1.73 |
| ︱︱├ 1010[房间] | C1008 | 北 | 1.52 |
| ︱︱├ 1010[房间] | C1008 | 北 | 1.63 |
| ︱︱└ 1010[房间] | C1008 | 北 | 1.71 |
| ︱├○户:1-D |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | 1.62 |
| ︱︱├ 1003[房间] | C1008 | 南 | 1.49 |
| ︱︱├ 1006[房间] | C1008 | 北 | 1.87 |
| ︱︱├ 1007[房间] | C1008 | 北 | 1.53 |
| ︱︱├ 1008[房间] | C1008 | 北 | 1.64 |
| ︱︱├ 1008[房间] | C1008 | 北 | 1.81 |
| ︱︱└ 1008[房间] | C1008 | 北 | 1.75 |
| ︱├○户:1-E |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | 1.03 |
| ︱︱├ 1003[房间] | C1008 | 南 | 0.77 |
| ︱︱├ 1006[房间] | C1008 | 北 | 1.45 |
| ︱︱├ 1007[房间] | C1008 | 北 | 1.01 |
| ︱︱├ 1008[房间] | C1008 | 北 | 1.12 |
| ︱︱├ 1008[房间] | C1008 | 北 | 1.32 |
| ︱︱└ 1008[房间] | C1008 | 北 | 1.25 |
| ︱├○户:1-F |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | -0.91 |
| ︱︱├ 1003[房间] | C1008 | 南 | -0.87 |
| ︱︱├ 1006[房间] | C1008 | 北 | 0.37 |
| ︱︱├ 1007[房间] | C1008 | 北 | -0.45 |
| ︱︱├ 1008[房间] | C1008 | 北 | -0.46 |
| ︱︱├ 1008[房间] | C1008 | 北 | 0.02 |
| ︱︱└ 1008[房间] | C1008 | 北 | -0.22 |
| ︱├○户:1-G |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | -0.96 |
| ︱︱├ 1003[房间] | C1008 | 南 | -0.90 |
| ︱︱├ 1006[房间] | C1008 | 北 | -0.58 |
| ︱︱├ 1007[房间] | C1008 | 北 | -0.61 |
| ︱︱├ 1008[房间] | C1008 | 北 | -0.57 |
| ︱︱├ 1008[房间] | C1008 | 北 | -0.60 |
| ︱︱└ 1008[房间] | C1008 | 北 | -0.59 |
| ︱├○户:1-H |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | 0.77 |
| ︱︱├ 1004[房间] | C1008 | 北 | 1.89 |
| ︱︱├ 1005[房间] | C1008 | 北 | 1.75 |
| ︱︱└ 1006[房间] | C1008 | 北 | 1.80 |
| ︱├○户:1-I |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | 1.73 |
| ︱︱├ 1004[房间] | C1008 | 北 | 2.29 |
| ︱︱├ 1005[房间] | C1008 | 北 | 1.87 |
| ︱︱└ 1006[房间] | C1008 | 北 | 1.91 |
| ︱├○户:1-J |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | -0.60 |
| ︱︱├ 1004[房间] | C1008 | 北 | -0.15 |
| ︱︱├ 1005[房间] | C1008 | 北 | 0.01 |
| ︱︱└ 1006[房间] | C1008 | 北 | -0.09 |
| ︱├○户:1-K |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | -1.02 |
| ︱︱├ 1004[房间] | C1008 | 北 | -0.73 |
| ︱︱├ 1005[房间] | C1008 | 北 | -0.66 |
| ︱︱└ 1006[房间] | C1008 | 北 | -0.65 |
| ︱├○户:1-L |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | 0.04 |
| ︱︱├ 1004[房间] | C1008 | 北 | 1.15 |
| ︱︱├ 1005[房间] | C1008 | 北 | 0.66 |
| ︱︱└ 1006[房间] | C1008 | 北 | 1.02 |
| ︱├○户:1-M |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | 1.37 |
| ︱︱└ 1003[房间] | C1008 | 南 | 1.44 |
| ︱├○户:1-N |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | -0.20 |
| ︱︱└ 1003[房间] | C1008 | 南 | -0.39 |
| ︱├○户:1-O |  |  |  |
| ︱︱├ 1003[房间] | C1008 | 南 | -0.57 |
| ︱︱└ 1003[房间] | C1008 | 南 | -0.53 |
| ︱├○户:1-P |  |  |  |
| ︱︱├ 1002[房间] | C1008 | 南 | -0.37 |
| ︱︱└ 1002[房间] | C1008 | 南 | -0.69 |
| ︱├○户:1-Q |  |  |  |
| ︱︱├ 1002[房间] | C1008 | 南 | 1.20 |
| ︱︱└ 1002[房间] | C1008 | 南 | 1.18 |
| ︱├○户:1-R |  |  |  |
| ︱︱├ 1002[房间] | C1008 | 南 | 1.72 |
| ︱︱└ 1002[房间] | C1008 | 南 | 1.73 |
| ︱├○户:1-S |  |  |  |
| ︱︱├ 1002[房间] | C1008 | 南 | -1.16 |
| ︱︱└ 1002[房间] | C1008 | 南 | -1.23 |
| ︱├○户:1-T |  |  |  |
| ︱︱├ 1002[房间] | C1515 | 南 | 0.00 |
| ︱︱├ 1002[房间] | M0921 | 南 | 0.00 |
| ︱︱├ 1002[房间] | M0921 | 南 | 0.00 |
| ︱︱├ 1003[房间] | C0915 | 北 | 1.20 |
| ︱︱└ 1003[房间] | M0921 | 南 | 0.00 |
| ︱├○户:1-U |  |  |  |
| ︱︱└ 1002[房间] | C1008 | 南 | -0.94 |
| ︱├○户:1-V |  |  |  |
| ︱︱└ 1002[房间] | C1008 | 南 | 0.78 |
| ︱├○户:1-W |  |  |  |
| ︱︱└ 1002[房间] | C1008 | 南 | -0.60 |
| ︱├○户:1-X |  |  |  |
| ︱︱└ 1002[房间] | C1008 | 南 | 0.51 |
| ︱└○户:1-Y |  |  |  |
| ︱ └ 1002[房间] | C1008 | 南 | 1.86 |
| └○第2层 |  |  |  |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1008 | 南 | 0.22 |
|  ︱├ 2004[房间] | C1008 | 南 | -0.59 |
|  ︱├ 2009[房间] | C1008 | 北 | 0.96 |
|  ︱├ 2010[房间] | C1008 | 北 | -0.40 |
|  ︱├ 2011[房间] | C1008 | 北 | 0.69 |
|  ︱├ 2012[房间] | C1008 | 北 | -0.11 |
|  ︱├ 2012[房间] | C1008 | 北 | 0.25 |
|  ︱└ 2012[房间] | C1008 | 北 | 0.75 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1008 | 南 | -0.64 |
|  ︱├ 2004[房间] | C1008 | 南 | -1.26 |
|  ︱├ 2009[房间] | C1008 | 北 | -0.17 |
|  ︱├ 2010[房间] | C1008 | 北 | -0.88 |
|  ︱├ 2011[房间] | C1008 | 北 | -0.31 |
|  ︱├ 2012[房间] | C1008 | 北 | -0.57 |
|  ︱├ 2012[房间] | C1008 | 北 | -0.29 |
|  ︱└ 2012[房间] | C1008 | 北 | -0.23 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1008 | 南 | 1.00 |
|  ︱├ 2004[房间] | C1008 | 南 | 1.22 |
|  ︱├ 2009[房间] | C1008 | 北 | 1.84 |
|  ︱├ 2010[房间] | C1008 | 北 | 2.00 |
|  ︱├ 2011[房间] | C1008 | 北 | 1.75 |
|  ︱├ 2012[房间] | C1008 | 北 | 1.69 |
|  ︱├ 2012[房间] | C1008 | 北 | 1.82 |
|  ︱└ 2012[房间] | C1008 | 北 | 2.01 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | 1.71 |
|  ︱├ 2002[房间] | C1015 | 南 | 1.70 |
|  ︱├ 2002[房间] | C1015 | 南 | 1.60 |
|  ︱├ 2002[房间] | C1015 | 南 | 1.55 |
|  ︱├ 2003[房间] | C1015 | 南 | 1.30 |
|  ︱├ 2007[房间] | C1008 | 北 | 1.97 |
|  ︱├ 2008[房间] | C1008 | 北 | 1.93 |
|  ︱├ 2009[房间] | C1008 | 北 | 2.29 |
|  ︱├ 2009[房间] | C1008 | 北 | 2.11 |
|  ︱└ 2009[房间] | C1008 | 北 | 1.94 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | 1.16 |
|  ︱├ 2002[房间] | C1015 | 南 | 1.17 |
|  ︱├ 2002[房间] | C1015 | 南 | 1.16 |
|  ︱├ 2002[房间] | C1015 | 南 | 0.96 |
|  ︱├ 2003[房间] | C1015 | 南 | 0.65 |
|  ︱├ 2007[房间] | C1008 | 北 | 1.15 |
|  ︱├ 2008[房间] | C1008 | 北 | 1.78 |
|  ︱├ 2009[房间] | C1008 | 北 | 1.76 |
|  ︱├ 2009[房间] | C1008 | 北 | 1.71 |
|  ︱└ 2009[房间] | C1008 | 北 | 1.63 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | -0.63 |
|  ︱├ 2002[房间] | C1015 | 南 | -0.88 |
|  ︱├ 2002[房间] | C1015 | 南 | -1.00 |
|  ︱├ 2002[房间] | C1015 | 南 | -0.91 |
|  ︱├ 2003[房间] | C1015 | 南 | -0.88 |
|  ︱├ 2007[房间] | C1008 | 北 | -0.66 |
|  ︱├ 2008[房间] | C1008 | 北 | 0.97 |
|  ︱├ 2009[房间] | C1008 | 北 | -0.28 |
|  ︱├ 2009[房间] | C1008 | 北 | 0.84 |
|  ︱└ 2009[房间] | C1008 | 北 | 0.31 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | -1.21 |
|  ︱├ 2002[房间] | C1015 | 南 | -1.31 |
|  ︱├ 2002[房间] | C1015 | 南 | -1.40 |
|  ︱├ 2002[房间] | C1015 | 南 | -1.07 |
|  ︱├ 2003[房间] | C1015 | 南 | -0.99 |
|  ︱├ 2007[房间] | C1008 | 北 | -0.84 |
|  ︱├ 2008[房间] | C1008 | 北 | -0.59 |
|  ︱├ 2009[房间] | C1008 | 北 | -0.63 |
|  ︱├ 2009[房间] | C1008 | 北 | -0.61 |
|  ︱└ 2009[房间] | C1008 | 北 | -0.82 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | 1.82 |
|  ︱├ 2002[房间] | C1015 | 南 | 1.75 |
|  ︱└ 2003[房间] | C1015 | 南 | 1.67 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | -0.59 |
|  ︱├ 2002[房间] | C1015 | 南 | -0.58 |
|  ︱└ 2003[房间] | C1015 | 南 | -0.59 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | -0.90 |
|  ︱├ 2002[房间] | C1015 | 南 | -0.97 |
|  ︱└ 2003[房间] | C1015 | 南 | -1.11 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | 0.47 |
|  ︱├ 2002[房间] | C1015 | 南 | 0.55 |
|  ︱└ 2003[房间] | C1015 | 南 | 0.76 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C1015 | 南 | 0.27 |
|  ︱├ 2002[房间] | C1015 | 南 | 0.15 |
|  ︱└ 2003[房间] | C1015 | 南 | -0.28 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2006[房间] | C1008 | 北 | 2.06 |
|  ︱├ 2006[房间] | C1008 | 北 | 2.04 |
|  ︱└ 2006[房间] | C1008 | 北 | 2.19 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2006[房间] | C1008 | 北 | -0.13 |
|  ︱├ 2006[房间] | C1008 | 北 | -0.39 |
|  ︱└ 2006[房间] | C1008 | 北 | -0.25 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2006[房间] | C1008 | 北 | -0.69 |
|  ︱├ 2006[房间] | C1008 | 北 | -0.68 |
|  ︱└ 2006[房间] | C1008 | 北 | -0.64 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2006[房间] | C1008 | 北 | 1.17 |
|  ︱├ 2006[房间] | C1008 | 北 | 1.23 |
|  ︱└ 2006[房间] | C1008 | 北 | 1.79 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2006[房间] | C1008 | 北 | 1.97 |
|  ︱├ 2006[房间] | C1008 | 北 | 2.08 |
|  ︱└ 2006[房间] | C1008 | 北 | 1.94 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2001[房间] | C0915 | 南 | 0.64 |
|  ︱├ 2001[房间] | C0915 | 南 | 0.65 |
|  ︱├ 2001[房间] | M1521 | 南 | 0.69 |
|  ︱└ 2002[房间] | C0915 | 北 | 1.39 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2003[房间] | C1008 | 南 | 1.22 |
|  ︱└ 2003[房间] | C1008 | 南 | 1.21 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2003[房间] | C1008 | 南 | -0.75 |
|  ︱└ 2003[房间] | C1008 | 南 | -0.70 |
|  ├○户:2-Z |  |  |  |
|  ︱├ 2003[房间] | C1008 | 南 | -0.59 |
|  ︱└ 2003[房间] | C1008 | 南 | -0.45 |
|  ├ 户:2-Z |  |  |  |
|  ├ 户:2-Z |  |  |  |
|  ├ 户:2-Z |  |  |  |
|  ├ 户:2-Z |  |  |  |
|  ├ 户:2-Z |  |  |  |
|  └ 户:2-Z |  |  |  |