

## Article

# Benchmarking city layouts—a Methodological Approach and an Accessibility Comparison Between a Real City and the Garden City

## Supplementary Materials

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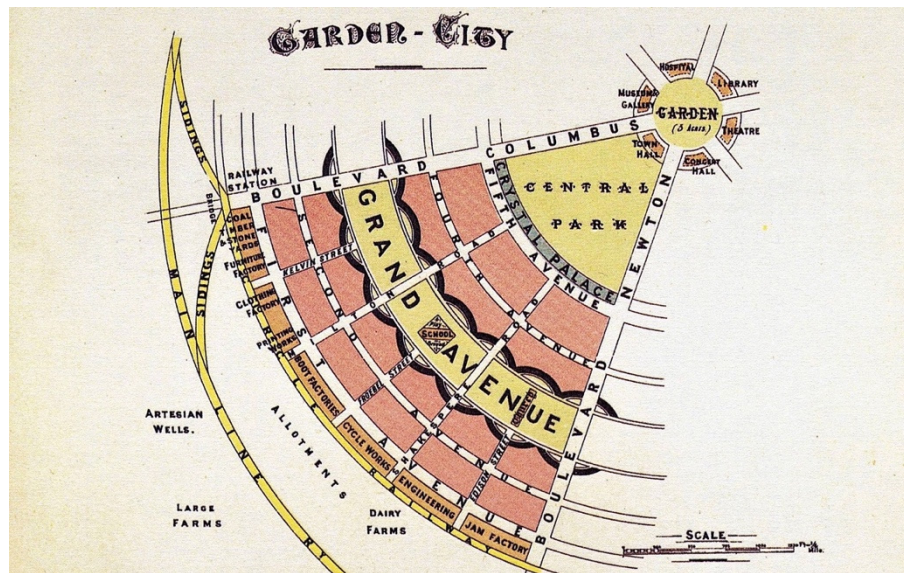
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### 1. Garden City Living Space Calculation

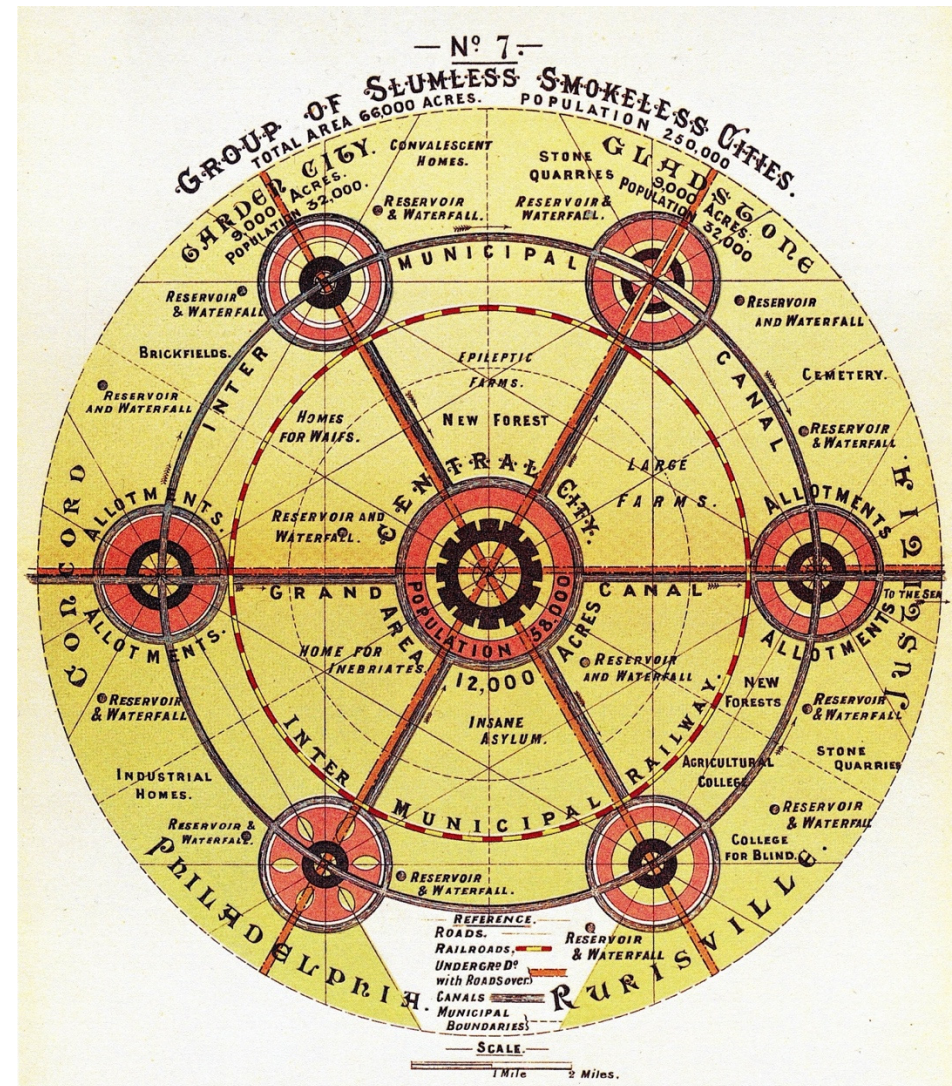
Garden City living space per inhabitant was calculated as follows:

- Measure all the Garden City land plots areas allocated to residential buildings;
- To ensure space for a fluid and spacious movement, a gap between buildings was assumed, consisting of a 2 m strip for gardens, plus 4 m for a sidewalk, and 2 m for a cycling lane. This area was removed from the land plot area of above, yielding the implantation area;
- After considering gap space, the area left on the residential land plots had associated floor area ratios of 1.3 and 1.8 (ratio of a building's total floor area to the area of the land plot upon which it is built), which are the two values stated in the municipal city plan of Coimbra for residential areas. Howard suggested the most central residential buildings to be more spacious, thus a ratio of 1.3 was assumed for these land plots. Residential buildings in the outward ring would be more compact, and for these land plots a ratio of 1.8 was assumed;
- The total construction area for residential purposes of one Garden City is 2,145,825 m<sup>2</sup>, obtained by multiplying the implantation area by the corresponding floor area ratio. Considering the three Garden Cities and dividing by 104,643 inhabitants yields an average 61.5 m<sup>2</sup> living space available per inhabitant;
- For each land plot, multiplying its implantation area by area ratio and dividing by 61.5 yields the number of inhabitants in that land plot, which ranges from 27 in the inner rings to 43 in the outer rings.

## 2. Garden City Blueprints



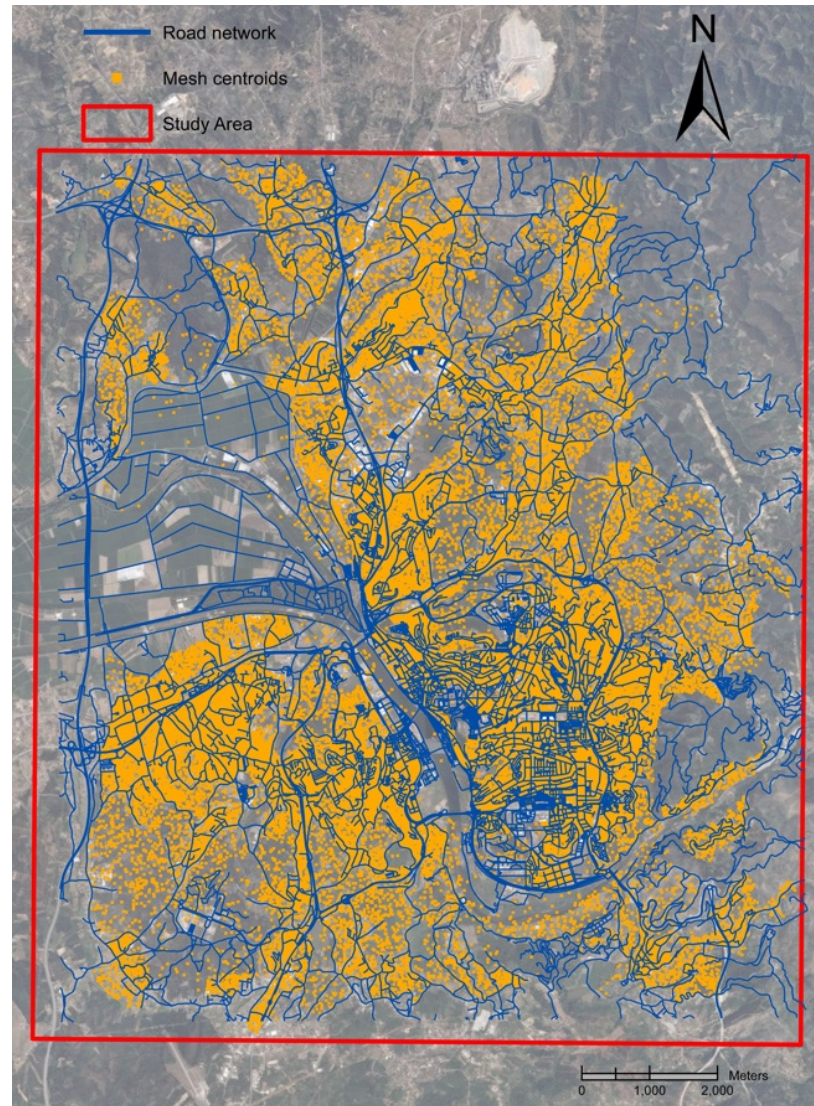
(a)



(b)

Figure S1. Layout of a Garden City ward (a) and Social City (b).

### 3. Size Comparison of Coimbra and Coimbra as a Garden City



(a)



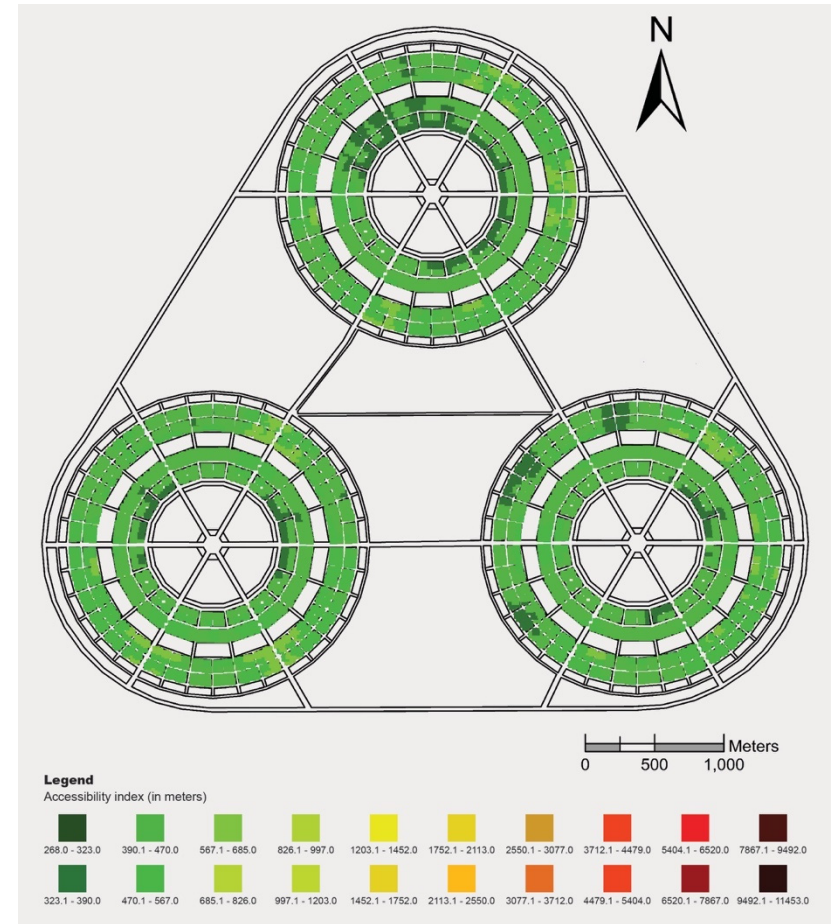
(b)

**Figure S2.** Comparison in size between the city of Coimbra (a) and Coimbra as a Garden City (b).

#### 4. Accessibility Maps



(a)

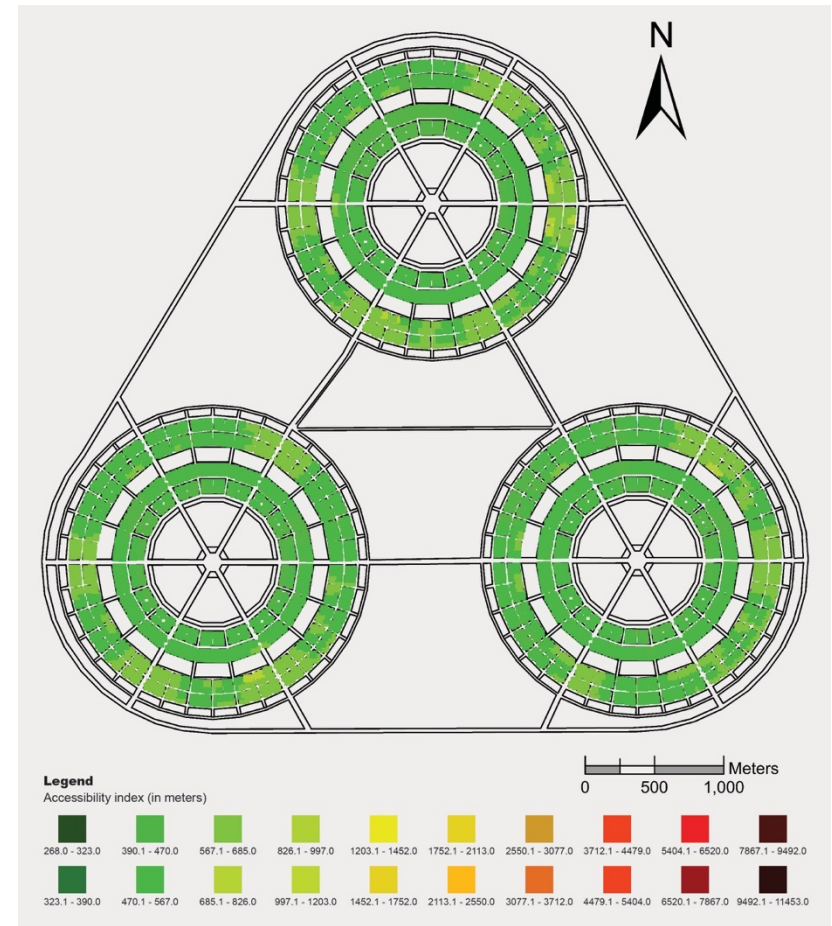


(b)

**Figure S3.** Accessibility to urban facilities for  $L_k(j_3)$  100/0/0; Coimbra (a) and Coimbra as a Garden City (b).



(a)

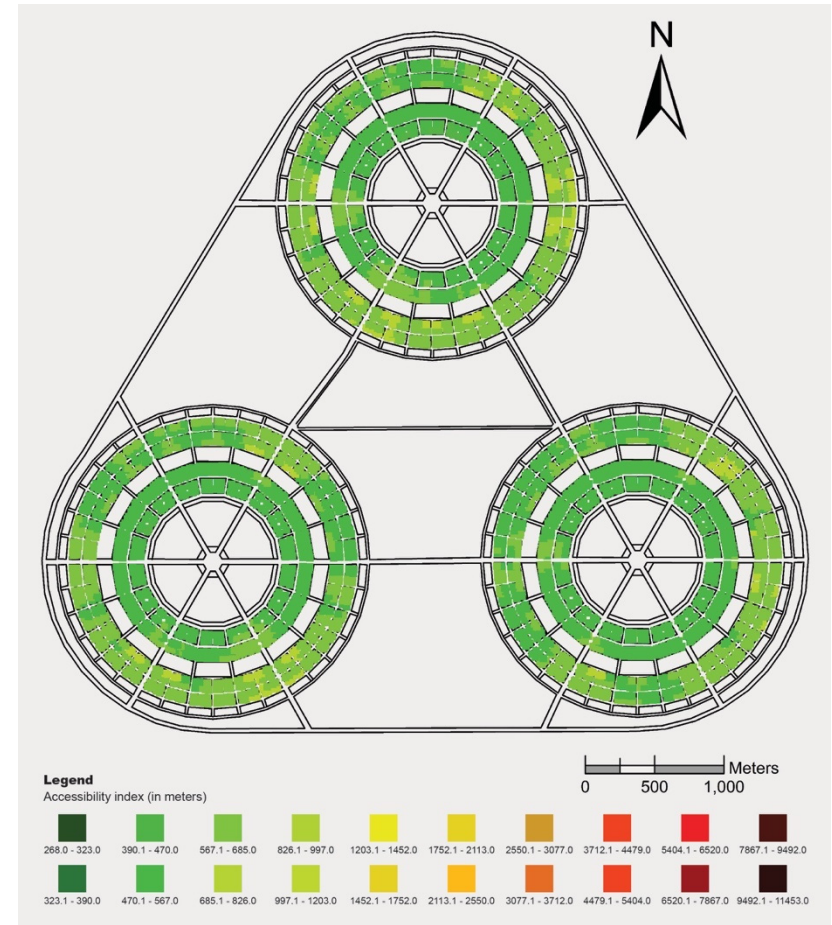


(b)

**Figure S4.** Accessibility to urban facilities for  $L_k(j_3)$  70/20/10; Coimbra (a) and Coimbra as a Garden City (b).



(a)

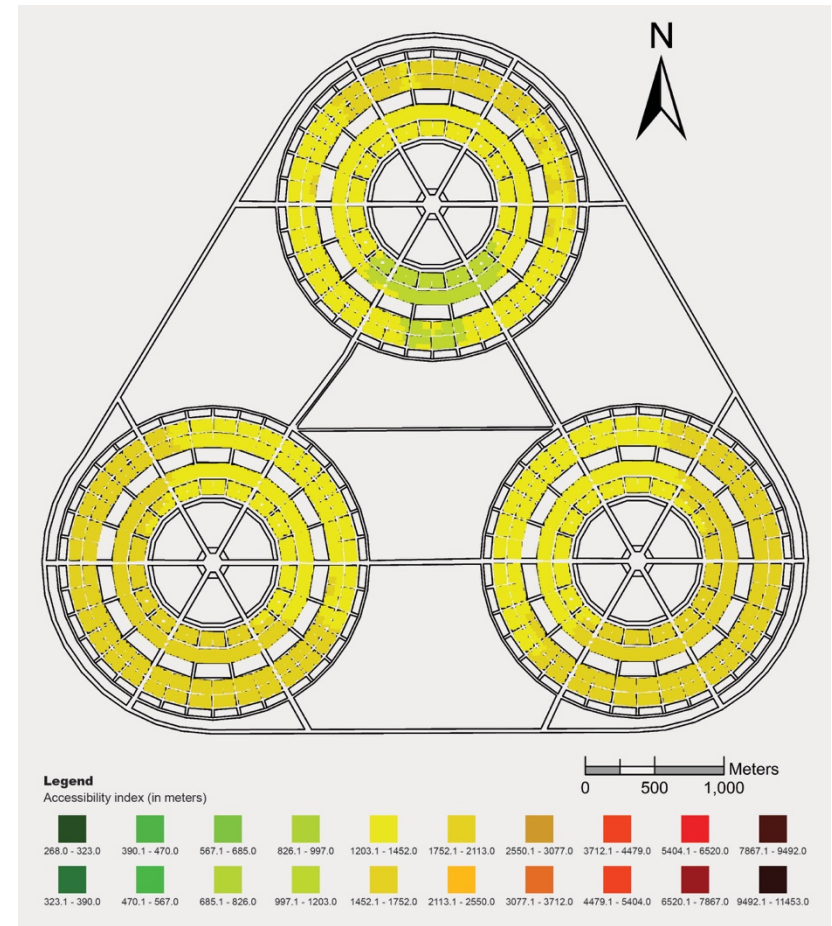


(b)

**Figure S5.** Accessibility to urban facilities for  $L_k(j_3)$  50/35/15; Coimbra (a) and Coimbra as a Garden City (b).

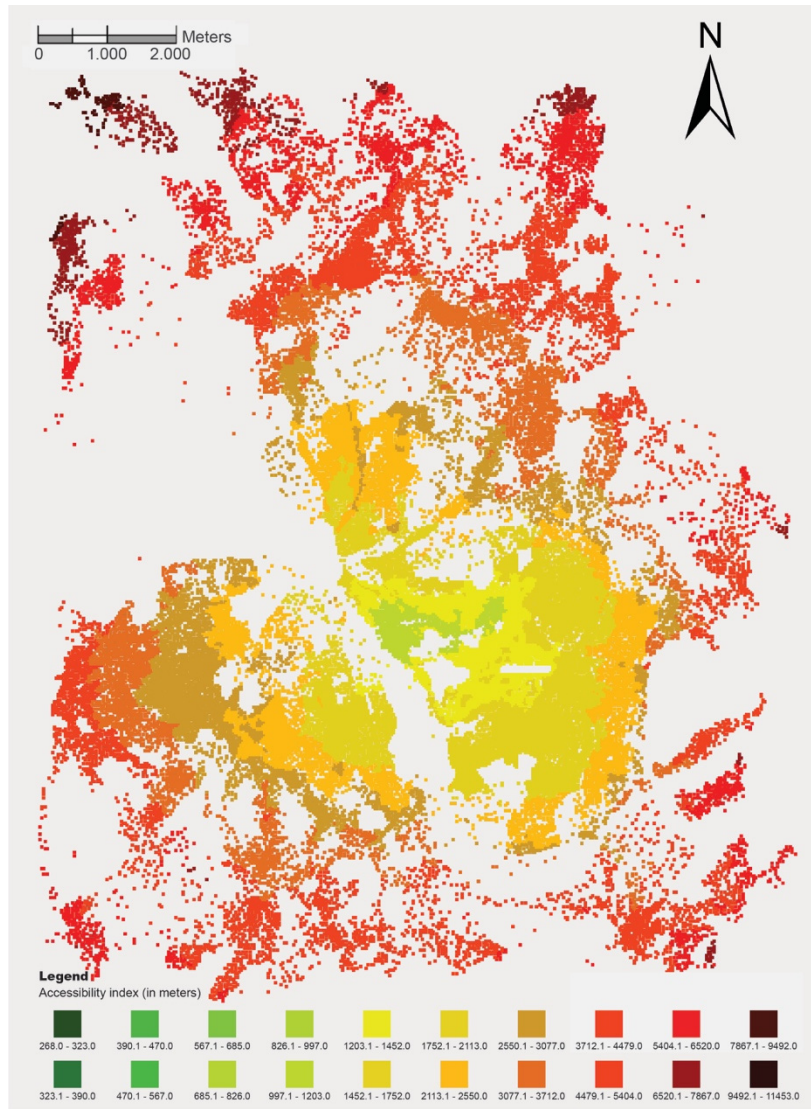


(a)

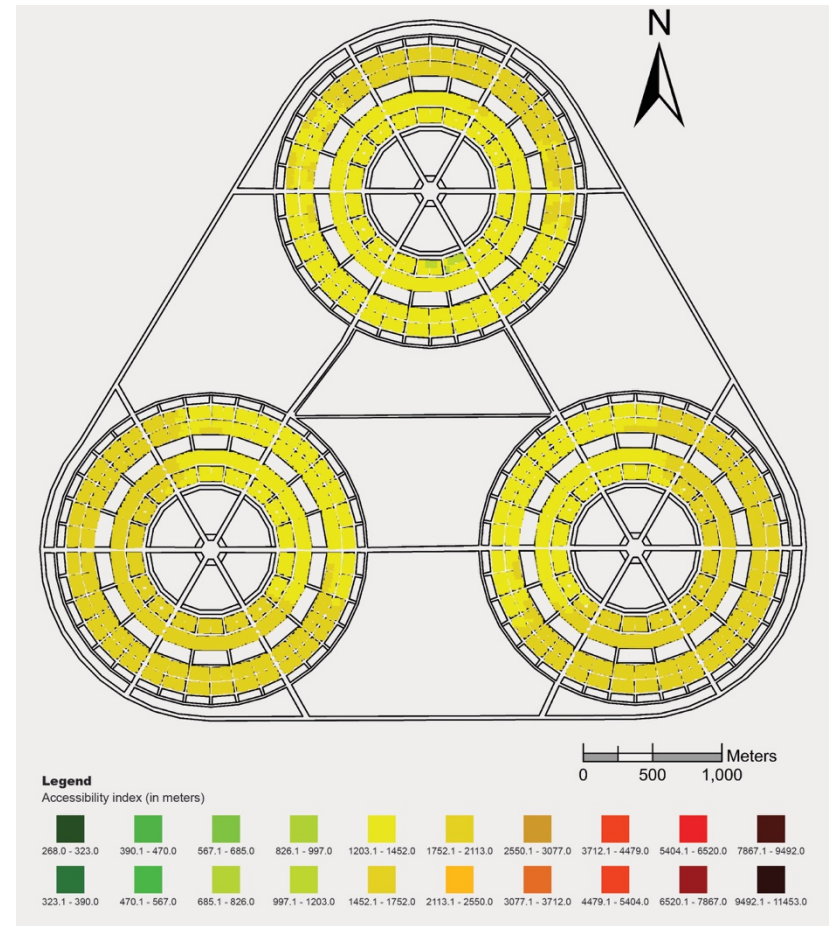


(b)

**Figure S6.** Overall accessibility for  $L_k(j_3)$  100/0/0; Coimbra (a) and Coimbra as a Garden City (b).

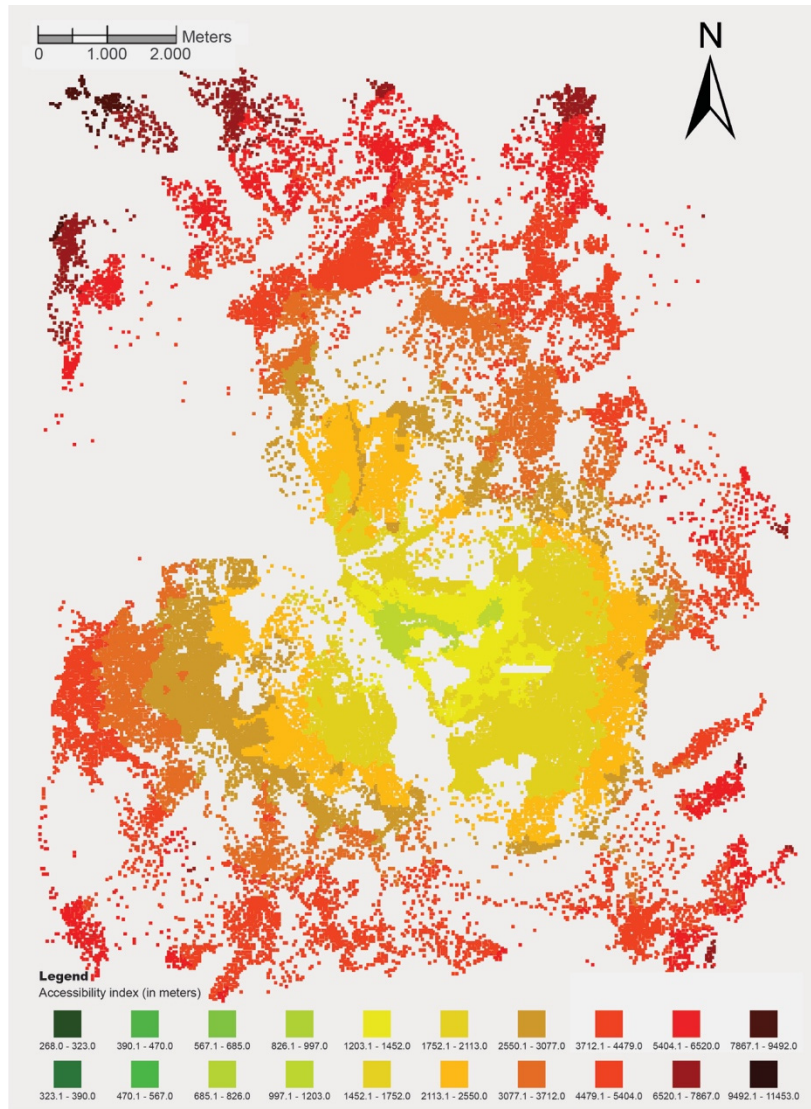


(a)

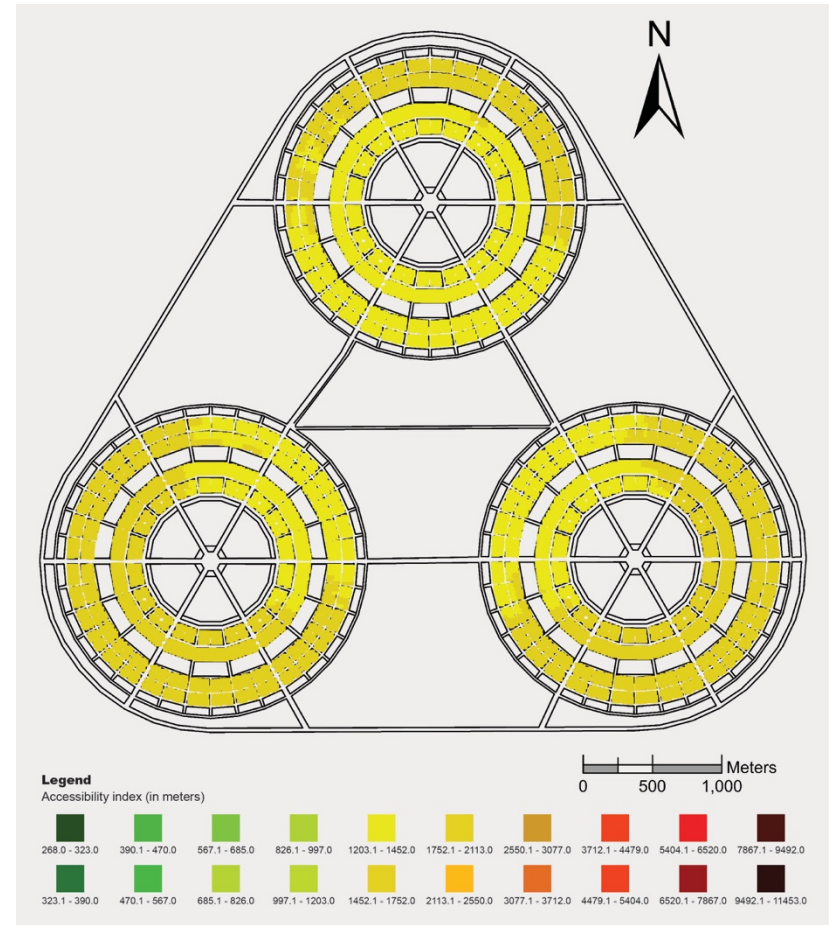


(b)

**Figure S7.** Overall accessibility for  $L_k(j_3)$  70/20/10; Coimbra (a) and Coimbra as a Garden City (b).



(a)

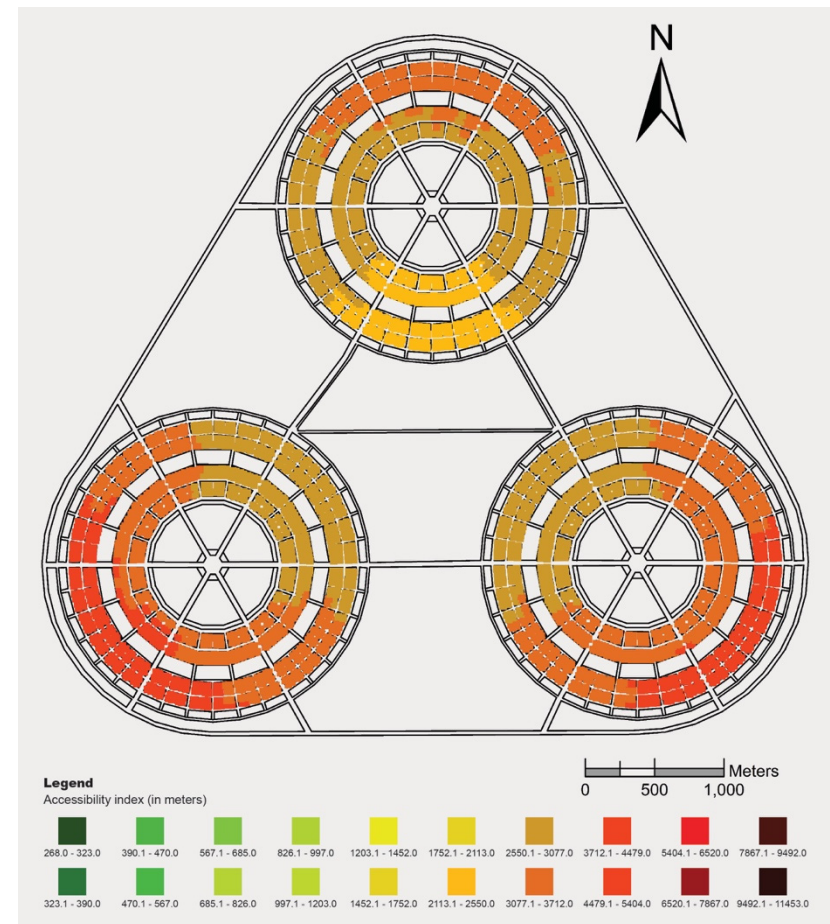


(b)

**Figure S8.** Overall accessibility for  $L_k(j_3)$  50/35/15; Coimbra (a) and Coimbra as a Garden City (b).



(a)



(b)

**Figure S9.** Job accessibility; Coimbra (a) and Coimbra as a Garden City (b).