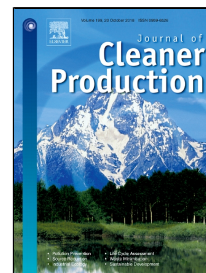


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Regional Suitability of Climate-Responsive Technologies for Buildings Based on Expert Knowledge: A China Study



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1 Regional Suitability of Climate-Responsive Technologies for Buildings Based on
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13

14 **Abstract**

15 Global warming and energy shortage have aroused great interests in climate-
16 responsive technologies during recent years. They are required for buildings to
17 positively adjust themselves to local climates in different climate regions. Incorrect
18 selections of these technologies may cause resource waste and low technological
19 efficiency. Therefore, the present study to explore the regional suitability of climate-
20 responsive technologies was conducted with expert knowledge-based investigation in
21 five kinds of climate regions in China, including severe cold region, cold region, hot
22 summer & cold winter region, hot summer & warm winter region and temperate region.
23 71 climate-responsive technologies were identified for controlling climate physical
24 features (i.e., temperature, humidity, sunlight, and ventilation). Suitability priorities as
25 well as application levels were analyzed with expert knowledge-based rankings, based
26 on which, a database of climate-responsive technologies for buildings in different
27 climate regions was established. The most suitable general technologies in different
28 climate regions were derived regarding temperature, humidity, sunlight, and ventilation.
29 The findings illustrated universality and disparity of technology regional suitability and

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