

**DOCKETED**

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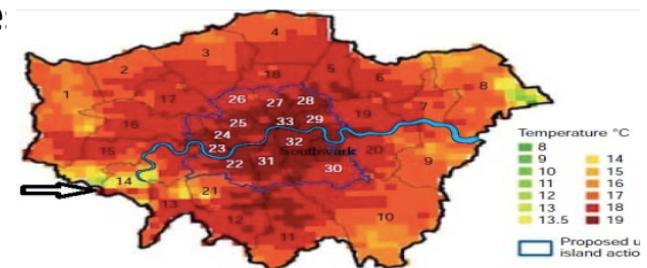
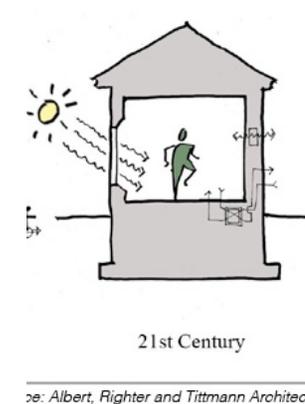
*Comment Received From: Healthy Building Research  
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## **Cost Effectiveness and Examples of Climate Ready Building Standards**

*Additional submitted attachment is included below.*

# Overheating Guidelines: *International*

- **Passive House Program:** <sup>1</sup>  
 $\leq 10\%$  (h/y)  $> 25\text{ C}$ , and moisture limit
- **CIBSE TM 59 Overheating Design Guide (UK):** <sup>2,3</sup>
  - Mechanical ventilation: **Operative Temperature**  $\leq 26\text{ C}$  for  $< 3\%$  of occupied hours
  - **Natural Ventilation:** temperature (summer occupied hours) and annual delta T limits for bedrooms
  - **Weather files for 50 %ile future climate**, high emissions. 2020's, mid & late century scenarios recommended
- **CIBSE TM 49 Urban Heat Island Design Guide (UK and London Plan):** <sup>4</sup>
  - **Overheating risk assessment** for urban heat zone
  - **Design Summer Year** weather file
  - **Hierarchy of efficiency measures**, before mechanical cooling is allowed



Average outdoor air temperature in London during August 2013

1. Passive House Institute, 2016. [Criteria for the Passive House, EnerPHit and PHI Low Energy Building Standard.](#)
2. CIBSE, 2017: [TM 59, Design methodology for the assessment of overheating in homes.](#)
3. Diamond, S., May 22, 2017. TM 59 webinar. Inking Associates.
4. CIBSE, 2014. [TM49 Design Summer Years for London.](#) See also: ARCC Network, 2017. [Designing for Future Climate.](#)

# Overheating and Adaptation/Resilience Guidelines : *N. America*

- ✓ **Build It Green (2019): GreenPoint Rated 7.0 (CA Homes) <sup>1</sup>**
- ✓ **Collaborative for High Performance Schools Criteria**
  - **National Climate Adaptation and Resilience credits (2019).**
  - **California update (2021) <sup>2</sup>**
- ✓ **National Research Council Canada <sup>3</sup>**
  - **Overheating assessment guide (April 2021)**
  - **Risk assessment framework, and health based evaluation method.**

1. Build It Green, 2017. [Version 7.0 Update, Executive Summary](#).

2. [CHPS 2019 update and webinar](#).

3. National Research Council Canada, 2019-2020.: [Preventing Overheating](#). [Risk analysis framework](#). [Health based evaluation method](#).

# Overheating Standards

- ✓ **British Columbia Energy Step Code. Supplement 3 on **Overheating and Air Quality** (2019) <sup>1</sup>**
- ✓ **Draft UK Future Homes Standard and Building Regulations. **Overheating assessment**, low carbon, and ventilation requirements (2021) <sup>2</sup>**

1. BC Housing, 2019. Overheating and AQ Design Guidelines Supplement. [BC Energy Step Code Design Guide & Supplemental Summary at Builder Insight 19: Modeling the Future Climate ... - BC Housing](#).

2. UK draft standards: <https://www.gov.uk/government/consultations/the-future-buildings-standard>. News: <https://www.architecture.com/knowledge-and-resources/knowledge-landing-page/the-future-homes-standard-explained>.