

California NetZero Design - A Guide for Architects



Architects

Q.1) The term Net Zero means:

- A. Free (Zero cost) energy
- B. Achieving a balance when the amount of carbon we add to the atmosphere is no more than the amount removed
- C. Buildings that rely only on natural ventilation and lighting
- D. Allowing new construction of buildings only if an older one is demolished - Zero new additions

Q.2) Which of the following are referred to as “greenhouse gases”?

- A. CO₂
- B. CH₄
- C. N₂O
- D. All of the above

- Q.3) The state of the atmosphere at a particular location over the short term is:
- A. Atmospheric tension
 - B. Climate change
 - C. Climate
 - D. Weather
- Q.4) Which one of the following is not included in the Greenhouse Gase (GHG) reporting under Kyoto Protocol?
- A. Carbon dioxide (CO₂)
 - B. Methane (CH₄)
 - C. Carbon Monoxide (CO)
 - D. Nitrous Oxide (N₂O)
- Q.5) According to the International Energy Agency (IEA), in 2018 the buildings and construction sector accounted for ____ of energy and process-related carbon dioxide emissions.
- A. 32%
 - B. 39%
 - C. 57%
 - D. 64%
- Q.6) According to the World Green Building Council, emissions due to cement manufacturing are responsible for:
- A. 7% of global carbon emissions
 - B. 7% of US carbon emissions
 - C. 7% of global pollution
 - D. None of the above

Q.7) How many distinct life-cycle stages are there for buildings according to EN:

A. 5

B. 4

C. 2

D. 3

Q.8) _____ stage of building life-cycle includes processes from the practical completion of construction works to the point of deconstruction or demolition of buildings. Including emissions from use, maintenance, repair, replacement, refurbishment, operational energy and water use.

A. Product

B. Construction

C. Use

D. End-of-Life

Q.9) The difference between Cradle-to-Grave and Cradle-to-Cradle is that the latter includes:

A. Recycling of products

B. Sensitive disposal of materials

C. There is no difference, the terms are synonymous

D. Locally procured materials at all stages of construction

Q.10) According to GHG Protocol, there are three distinct Greenhouse Gas accounting scopes, namely: Scope 1, Scope 2 and Scope 3. _____ accounts direct Greenhouse Gas emissions or removals.

- A. Scope 1
- B. Scope 2
- C. Scope 3
- D. None of the above

Q.11) Which of the following are impacts of increased precipitation?

- A. Decreased durability of materials
- B. Increased efflorescence and surface leaching concerns
- C. Increased corrosion
- D. All of the above

Q.12) A highly energy efficient building that produces on-site, or procures, enough carbon-free renewable energy to meet building operations energy consumption annually is referred to as _____.

- A. Zero Net Carbon Building
- B. Carbon Neutral Building
- C. Carbon Negative Building
- D. Zero Carbon Building

Q.13) In order to maintain licensure, _____ is now requiring California architects to get training on zero net carbon design topics.

A. The California Architects Board

B. LEED

C. Living Futures

D. The AIA

Q.14) The World Green Building Council (WGBC) established a “Net Zero Carbon Buildings Commitment” which has 176 signatories including the state of California. What are some of the goals of the Commitment?

A. Phase out the use of concrete by 2030

B. All new projects globally must achieve at least 40% of embodied carbon reductions by 2030

C. Create a carbon accounting tool by 2030

D. Develop a partnership with the other rating systems by 2030

Q.15) A building that uses no fossil fuel, Greenhouse Gas emitting energy to operate is referred to as _____.

A. Zero Net Carbon Building

B. Carbon Neutral Building

C. Carbon Negative Building

D. Zero Carbon Building

Q.16) Per the Architecture 2030 concept, what is the required % reduction over baseline building type by the year 2025?

A. 50%

B. 70%

C. 90%

D. 100%

Q.17) Carbon Positive Buildings are those that:

A. achieve less than zero emissions

B. achieve more than zero emissions

C. achieve zero emissions

D. None of the above

Q.18) Which one do you like? how many definitions are there of Net zero?

A. 4

B. 2

C. 3

D. 1

Q.19) Green-e-Climate is...

A. Part of the LEED certification process

B. An EPA program to certify green products

C. A global independent third-party product certification program

D. A joint EU and US initiative to coordinate climate change response

- Q.20) According to the EPA, which of the following is not a component of a “Green Building”?
- A. Buildings only designed by LEED certified designers
 - B. Water Conservation
 - C. Resiliency
 - D. Energy Efficiency and Renewable Energy
- Q.21) According to the author, which of the following is an overlooked component of a “Healthy building”?
- A. Its medical use
 - B. Aesthetics
 - C. Function
 - D. No components were overlooked
- Q.22) According to the IEA, which of the following will be essential for achieving Net Zero by 2050?
- A. An increase tree planting
 - B. Ending all new building construction
 - C. Huge declines in the use of coal, oil and gas
 - D. Replacing LEED with BREEAM

Q.23) According to milestones for NZE published by the World Economic Forum and IEA, what is the target year for 50% of existing buildings to be retrofitted to zero-carbon-ready levels?

A. 2025

B. 2030

C. 2040

D. 2045

Q.24) Vernacular Architecture has which of the following characteristics?

A. Stresses on utilizing materials within reach from the site

B. Applies only to developing countries

C. Not designed by architects

D. None of the above

Q.25) A consequence of the lockdowns during the COVID 19 pandemic was ...

A. A worsening of climate change

B. New building techniques were developed

C. A noticeable improvement in air quality

D. All of the above

Q.26) The Australian Islamic Center by Glenn Murcutt is an example of what kind of design?

A. Biophilic

B. Post Modern

C. Deconstructivist

D. Futuristic

Q.27) LEED was developed by ...

- A. American Institute of Architects
- B. US Environmental Protection Agency (EPA)
- C. Building Research Establishment
- D. U.S. Green Building Council (USGBC)

Q.28) Green Globes was developed by ...

- A. International Living Future Institute (ILFI) U.S.
- B. Green Building Initiative (GBI)
- C. Green Building Council Australia (GBCA)
- D. U.S. Green Building Council

Q.29) GreenStar was developed by which organization?

- A. Passive House Institute US
- B. Green Building Initiative
- C. Green Building Council Australia
- D. MIT environmental lab

Q.30) What is a choice of conscience?

- A. Something undesirable that is mandated by law
- B. A voluntary choice to "do the right thing"
- C. A choice that causes tax savings
- D. Something done out of getting caught