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## Hospital Struck by Hurricane Milton Installs Air-Water System

### **Description**

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Johns Hopkins All Children's Hospital was hit by Hurricane Milton earlier this week

Dirk Shadd/Tampa Bay Times/ZUMA Wire/Alamy

An innovative solution has emerged for a children's hospital affected by Hurricane Milton. The hospital, facing water shortages in the aftermath of the disaster, is now utilizing a cutting-edge device that extracts potable water directly from the air. This initiative showcases the potential of atmospheric water harvesting systems in responding to calamities.

According to David Stuckenber, a key figure at Genesis Systems, the Florida-based creator of this apparatus, having access to both water and power is crucial for a hospital's operations. The system employs advanced absorbent materials known as metal organic frameworks to condense moisture from air passed through the device. Subsequently, it releases pure water upon heating the material by approximately 8°C.

Atmospheric water harvesting systems, known for their self-sufficiency, have garnered interest for various applications, including supplying water to off-grid communities and supporting military operations. These systems have proven invaluable in responding to disasters by ensuring a reliable water source in times of crisis.

Jason Weida, from the Florida Agency for Health Care Administration, recognized the potential of this technology as Hurricane Milton loomed. The system was swiftly deployed to Johns Hopkins All Children's Hospital, restoring the facility's water supply and ensuring the wellbeing of its occupants, including newborns in critical care.

Overall, atmospheric water harvesting systems represent a versatile and efficient solution for securing water supply during emergencies, offering a valuable layer of redundancy in critical situations.

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## Vocabulary List:

1. **Innovative** /'ɪnə,veɪtɪv/ (adjective): Introducing new ideas; original and creative in thinking.
2. **Disaster** /dɪ'zæstər/ (noun): A sudden event causing great damage or hardship.
3. **Atmospheric** /,ætməs'fərɪk/ (adjective): Relating to the atmosphere; air.
4. **Harvesting** /'ha:rvestɪŋ/ (verb): The act of gathering a crop or resource.
5. **Self-sufficiency** /səlf sə'fɪʃənsi/ (noun): The ability to fulfill one's own needs without external assistance.
6. **Calamities** /kə'læmə,ti:z/ (noun): Serious events causing great and often sudden damage or distress.

## Comprehension Questions

## Multiple Choice

1. What type of hospital was affected by Hurricane Milton?

- Option: General hospital
- Option: Children's hospital
- Option: Veterinary hospital
- Option: Psychiatric hospital

2. What is the innovative solution being utilized by the hospital affected by Hurricane Milton?

- Option: Solar panels
- Option: Wind turbines
- Option: Atmospheric water harvesting device
- Option: Desalination plant

3. Which absorbent materials are used in the system to extract moisture from the air?

- Option: Cotton balls
- Option: Sponges
- Option: Metal organic frameworks
- Option: Activated charcoal

4. Who deployed the atmospheric water harvesting system to Johns Hopkins All Children's Hospital?

- Option: Jason Weida
- Option: David Stuckenber
- Option: Florida Agency for Health Care Administration
- Option: Genesis Systems

5. What temperature increase causes the material to release pure water in the device?

- Option: 5°C
- Option: 10°C
- Option: 8°C
- Option: 15°C

6. For what purpose have atmospheric water harvesting systems been used besides responding to disasters?

- Option: Generating electricity
- Option: Supplying water to off-grid communities
- Option: Purifying sea water
- Option: Cooling system for buildings

**True-False**

7. Atmospheric water harvesting systems have proven to be inefficient during disasters.
8. The system in the hospital uses metal organic frameworks to extract water from the air.
9. Florida Agency for Health Care Administration recognized the potential of the technology during Hurricane Milton.
10. The innovative device extracts water from the ground.
11. Atmospheric water harvesting systems are only useful for military operations.
12. This technology was deployed to a different hospital than Johns Hopkins All Children's Hospital.

**Gap-Fill**

13. The system releases pure water upon heating the material by approximately \_\_\_\_\_ °C.
14. Jason Weida is from the \_\_\_\_\_ for Health Care Administration.
15. Atmospheric water harvesting systems ensure a reliable water source in times of \_\_\_\_\_.
16. The hospital was facing water shortages in the \_\_\_\_\_ of the disaster.
17. Metal organic frameworks are used to condense moisture from \_\_\_\_\_ passed through the device.
18. This initiative showcases the potential of atmospheric water harvesting systems in responding to \_\_\_\_\_.

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## Answer

**Multiple Choice:** 1. Children's hospital 2. Atmospheric water harvesting device 3. Metal organic frameworks 4. Florida Agency for Health Care Administration 5. 8°C 6. Supplying water to off-grid communities

**True-False:** 7. False 8. True 9. True 10. False 11. False 12. False

**Gap-Fill:** 13. 8 14. Florida Agency 15. crisis 16. aftermath 17. air 18. calamities

## Vocabulary quizzes

### **Multiple Choice ( Select the Correct answer for each question. )**

1. What term is used to describe a significant development or discovery?

- Option: Congestion
- Option: Revolutionizing
- Option: Breakthrough
- Option: Innovative

2. What are the objects or instruments carried aboard a vehicle such as a spacecraft?

- Option: Payloads
- Option: Multiplex
- Option: Integration
- Option: Mechanisms

3. Which term refers to something made or produced by human beings rather than occurring naturally?

- Option: Artificial
- Option: Atmospheric
- Option: Self-sufficiency
- Option: Tapering

4. What is the point or level at which something begins or changes?

- Option: Implications
- Option: Threshold
- Option: Disaster
- Option: Calamities

5. What term refers to the action or process of combining different elements into a whole?

Option: Groundbreaking

Option: Reusability

Option: Integration

Option: Harvesting

6. Which term describes the possibility or likelihood of future success or something happening?

Option: Criticism

Option: Prospect

Option: Approvals

Option: Guidelines

7. What term describes introducing new ideas methods or products?

Option: Innovative

Option: Revolutionizing

Option: Deceleration

Option: Zenith

8. What word describes events causing great and often sudden damage or distress?

Option: Innovative

Option: Calamities

Option: Self-sufficiency

Option: Breakthrough

9. What term refers to the maximum data transfer rate of a network or internet connection?

Option: Deceleration

Option: Bandwidth

Option: Zenith

Option: Multiplex

10. Which term describes something innovative or pioneering?

Option: Threshold

Option: Atmospheric

Option: Groundbreaking

Option: Harvesting

**Gap-Fill ( Fill in the blanks with the correct word from the vocabulary list. )**

11. The new \_\_\_\_\_ cinema is equipped with multiple screens for simultaneous screenings.

12. The earthquake resulted in a humanitarian \_\_\_\_\_ with widespread destruction and

loss of lives.

13. The community aimed for \_\_\_\_\_ by growing their own food and generating electricity.

14. The project cannot proceed without the necessary permits and \_\_\_\_\_ from the authorities.

15. Employees are required to follow the safety \_\_\_\_\_ to prevent accidents in the workplace.

16. The new technology is \_\_\_\_\_ the way we communicate and access information.

17. The medication dosage should be gradually reduced in a process known as \_\_\_\_\_.

18. The company reached the \_\_\_\_\_ of success with record profits and global recognition.

19. Farmers began \_\_\_\_\_ crops as soon as they ripened to ensure a good yield.

20. The new design received mixed \_\_\_\_\_ from experts in the field.

**Matching Sentences ( Match each definition to the correct word from the vocabulary list. )**

21. The decision to cut costs had significant consequences for the company's workforce.

22. The introduction of new technology led to improved efficiency and customer satisfaction.

23. Effective communication is for the success of any team or organization.

24. The in place ensure the safety and security of the building occupants.

25. The internet speed test measures the available for data transfer.

26. The driver had to apply brakes to slow down the car's on the sharp curve.

27. The company was at the of a major breakthrough in renewable energy technology.



28. His career included becoming a top executive in the industry.

29. The innovative product is the way consumers interact with technology.

30. The new cinema offers a variety of movie genres for viewers to choose from.

## Answer

**Multiple Choice:** 1. Breakthrough 2. Payloads 3. Artificial 4. Threshold 5. Integration 6. Prospect 7. Innovative 8. Calamities 9. Bandwidth 10. Groundbreaking

**Gap-Fill:** 11. Multiplex 12. Disaster 13. Self-sufficiency 14. Approvals 15. Guidelines 16. Revolutionizing 17. Tapering 18. Zenith 19. Harvesting 20. Critical

**Matching sentence:** 1. Implications 2. Innovation 3. Crucial 4. Mechanisms 5. Bandwidth 6. Deceleration 7. Threshold 8. Aspirations 9. Revolutionizing 10. Multiplex

## CATEGORY

1. Sci/Tech - LEVEL4

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