Don’t Fan the Flames

Understanding fire and what to do about it

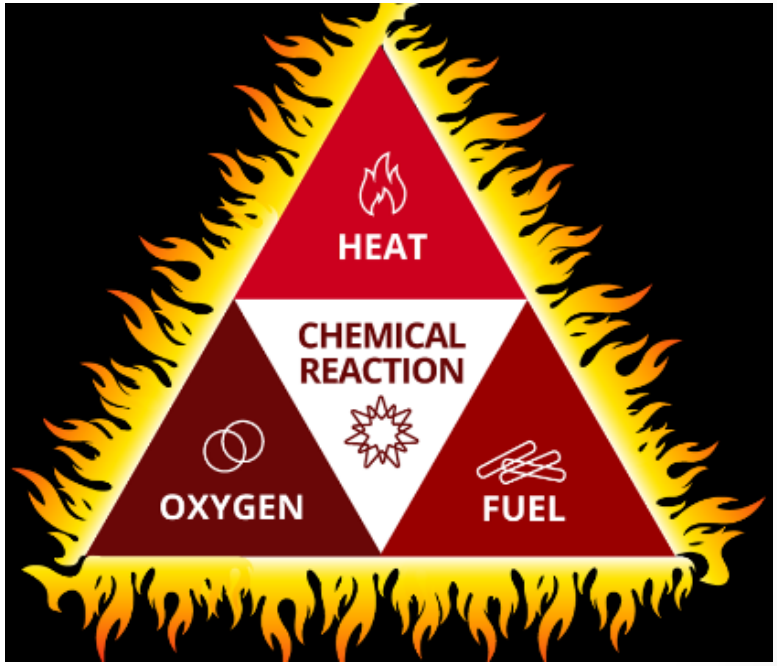
Outline

- Fire characteristics
- Fire department operations
- What we can do to prevent fires or make fighting them easier

FIRE CHARACTERISTICS

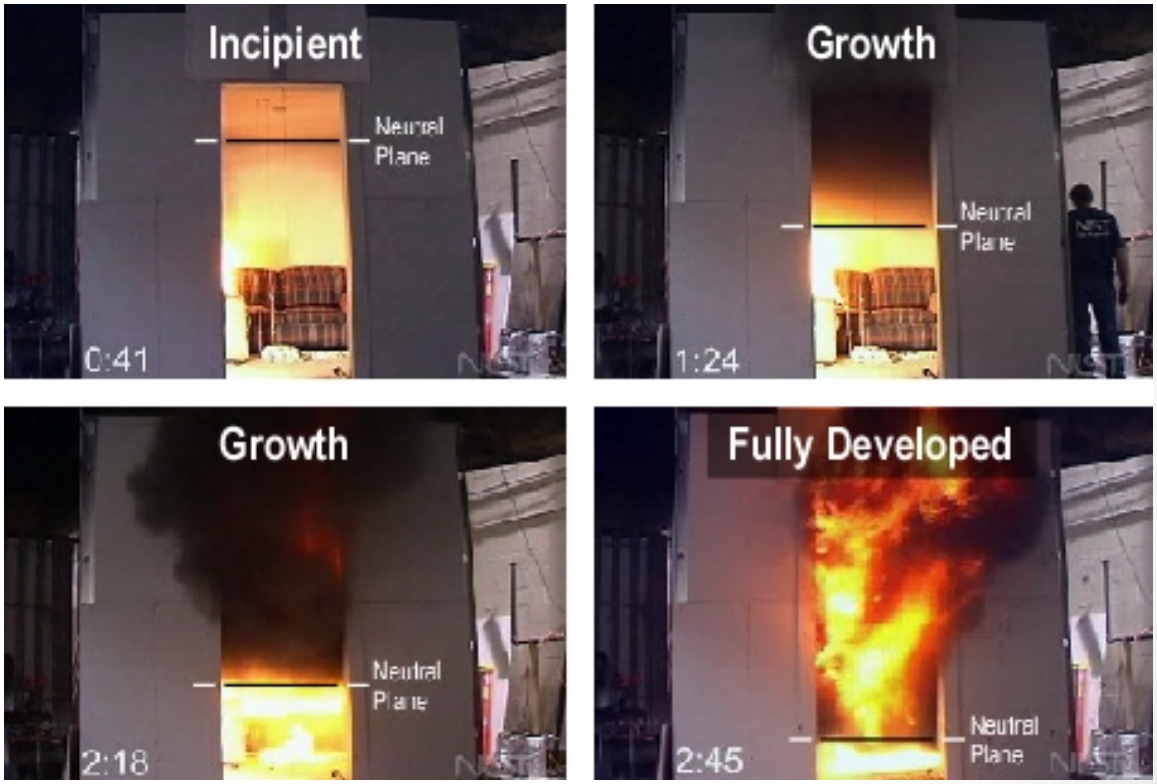
Fire

- Three basic factors required for combustion:
  - Fuel
  - Oxygen
  - Heat

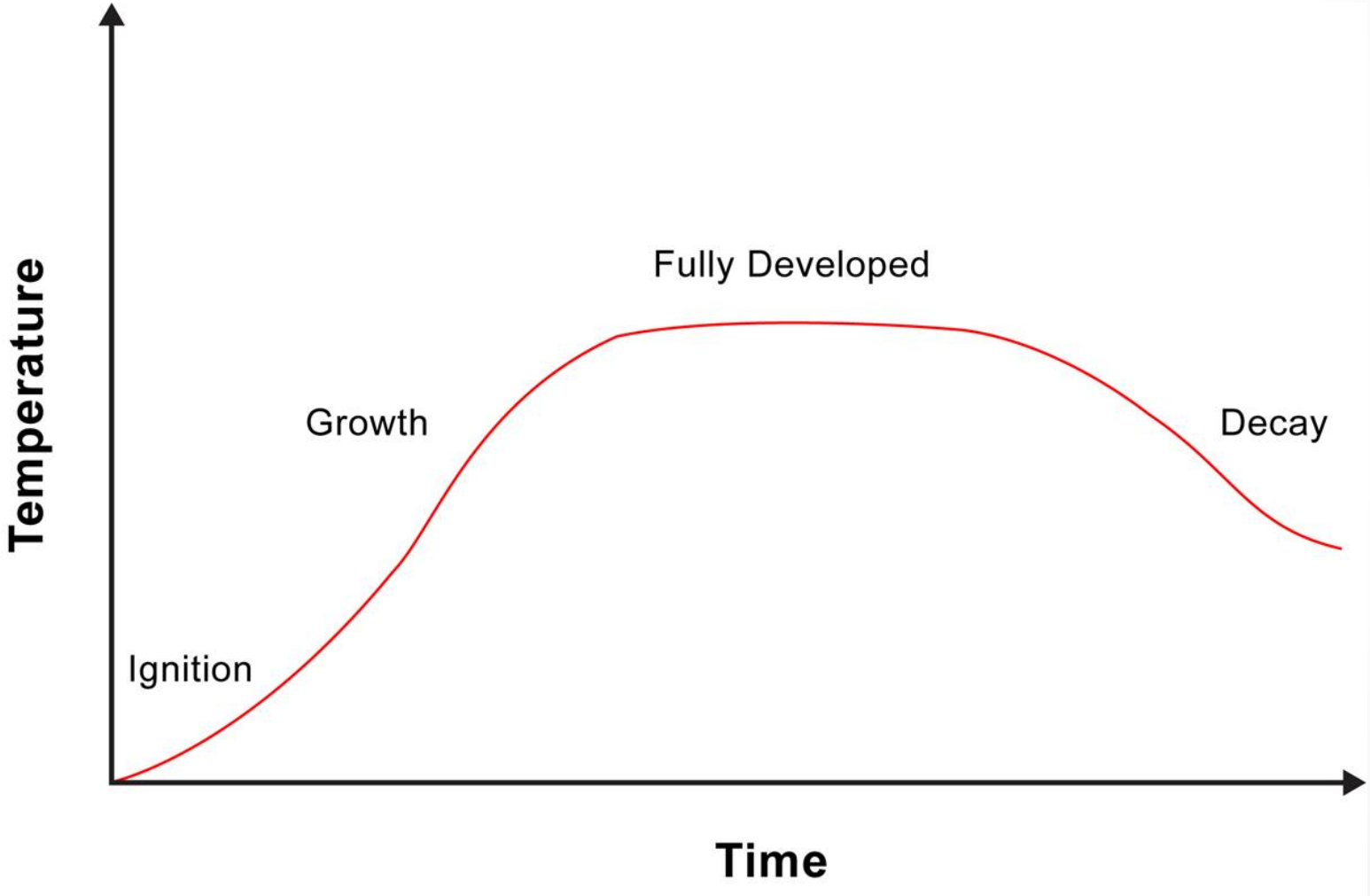


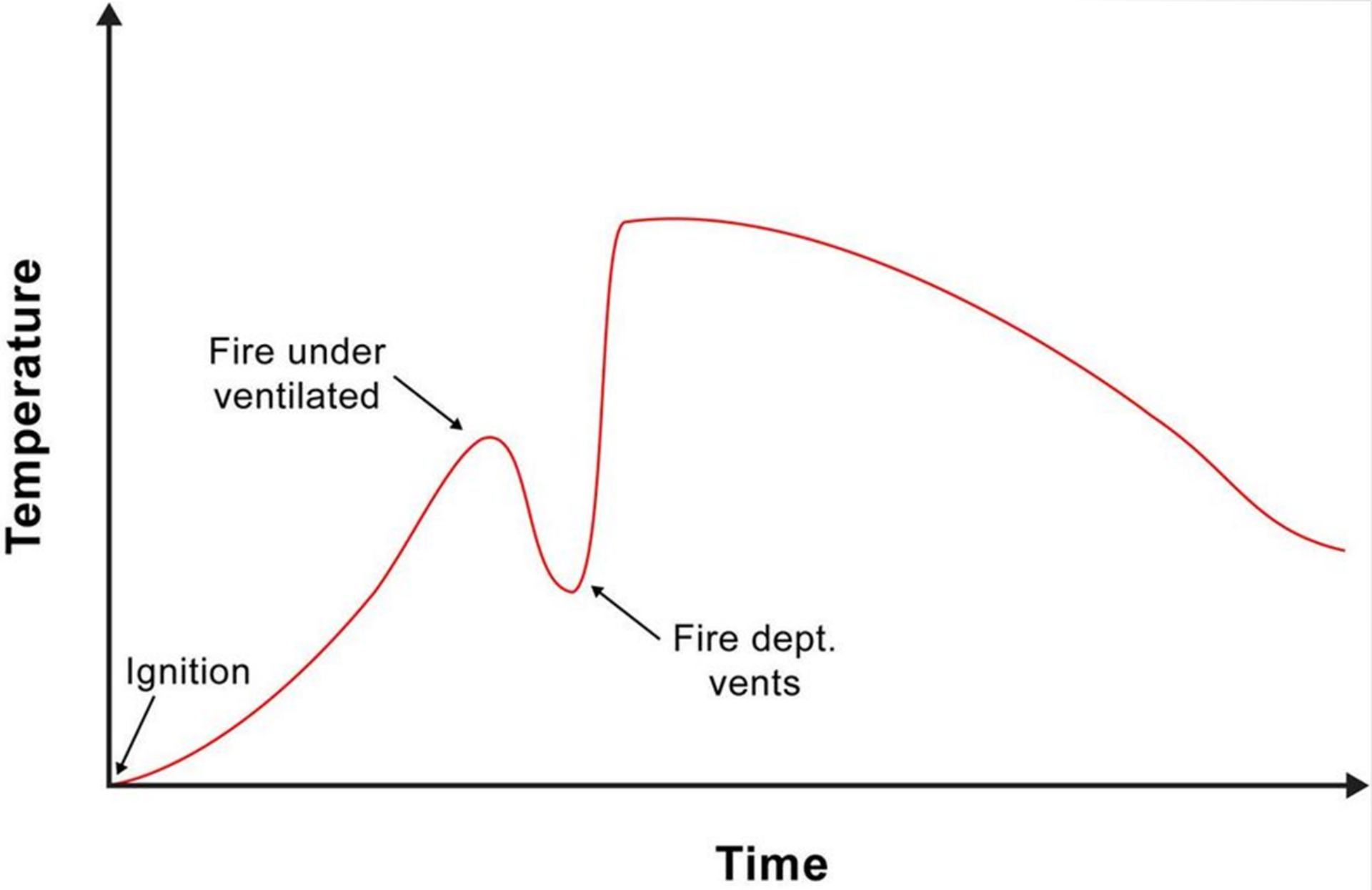
Fire

- The growth rate of a fire is determined by the oxygen and fuel available.
- A fire doubles in size every minute as items are heated to their ignition temperature where they ignite.



Fire Development and Behavior




Temperature
Fire under ventilated
Ignition
Fire dept. vents
Time

Room Fires

https://www.youtube.com/watch?v=IEOmSN2LRq0

Fire Spread

- Fires spread vertically faster than horizontally
- Greater space between storage racks creates a reduction in heat transfer and slows spread of fire

Benoit Moser/BSPP via AP

FIRE DEPARTMENT OPERATIONS

Fire Department Operations

- Fire is a chaotic event
- All fire incidents have a list of priorities that is followed
  - Life Safety
  - Incident Stabilization
  - Property Conservation

Sasha Goldstein

Property Conservation

- Salvage Operations
  - Moving and/or covering items
  - Fans to exhaust smoke from the area once the fire is controlled
  - Preventing water damage
    - Turning off valves
    - Stopping unnecessary waterflow from hose lines
    - Water chutes

Overhaul

- Searching for hidden fire and rendering the building safe
- Returning the building to as close to normal as possible
- Recognizing and preserving evidence

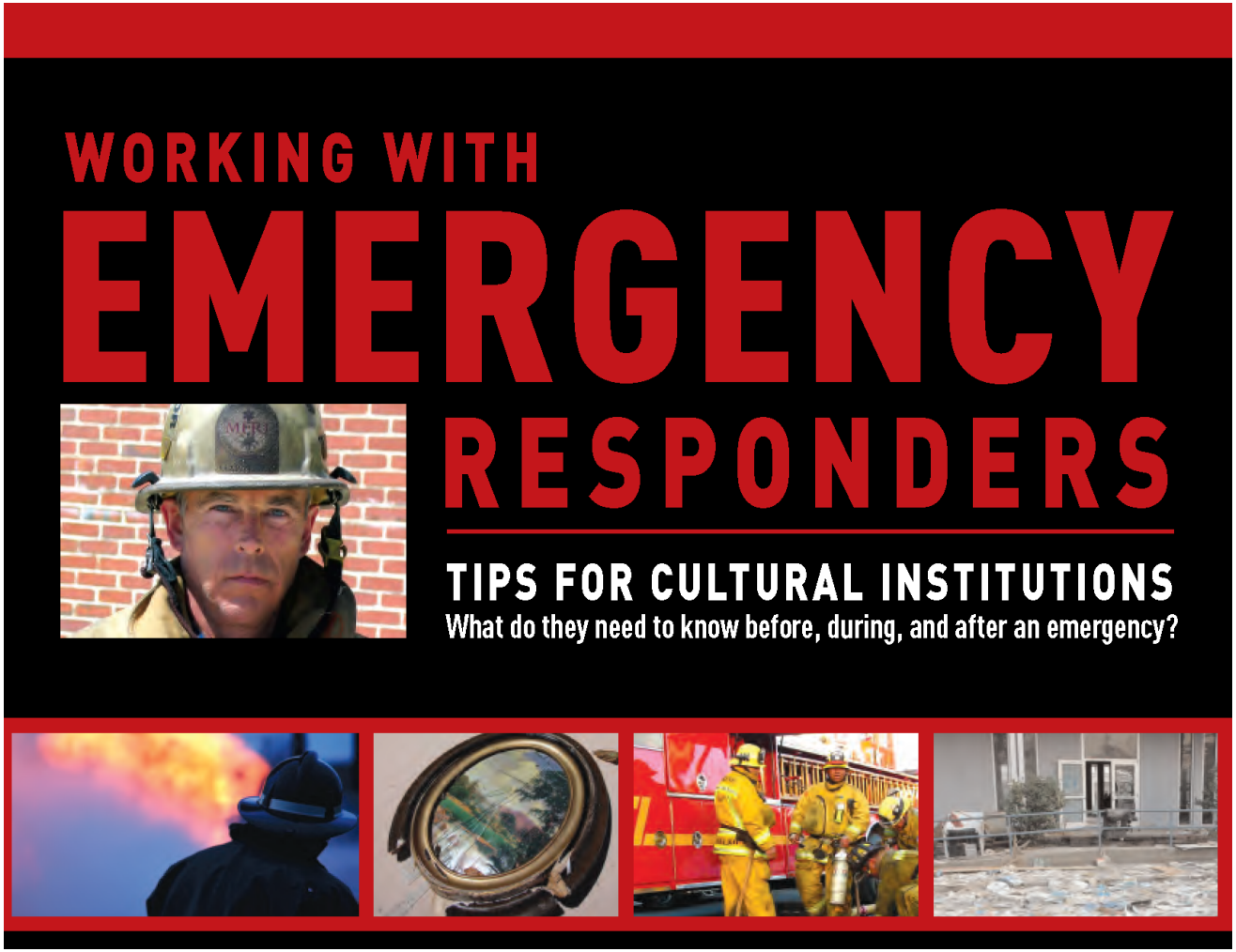
REUTERS/Philippe Wojazer

Fire Investigation

- Cause and origin will be examined in all fires
- Fires determined suspicious will be investigated further
- Fires with civilian or firefighter fatalities will undergo a higher level of scrutiny
- The owner's insurance carrier may limit access to the building until they investigate

WHAT CAN WE DO TO HELP PREVENT FIRES?

Building Relationships



NIKING

FIRE TYPE	IMAGE	EXTINGUISHING AGENT	EXTINGUISHING METHOD
Ordinary Solid Materials: paper, wood, fabrics, plastics		Water Foam Dry chemical	Removes heat Removes air and heat Breaks chain reaction
Flammable Liquids: gasoline, oil, paint, lacquer		Foam CO_2 Dry chemical	Removes air Breaks chain reaction
Electrical Equipment		CO_2 Dry chemical	Removes air Breaks chain reaction
Ordinary Solids, Flammable Liquids, and Electrical Equipment		Dry chemical	Breaks chain reaction

BOISE
ASPEN 30
RECYCLED
husky
xerocopy
UA2019-17
BOISE
ASPEN 30
MULTI-USE RECYCLED COPY PAPER
BOISE
ASPEN 30
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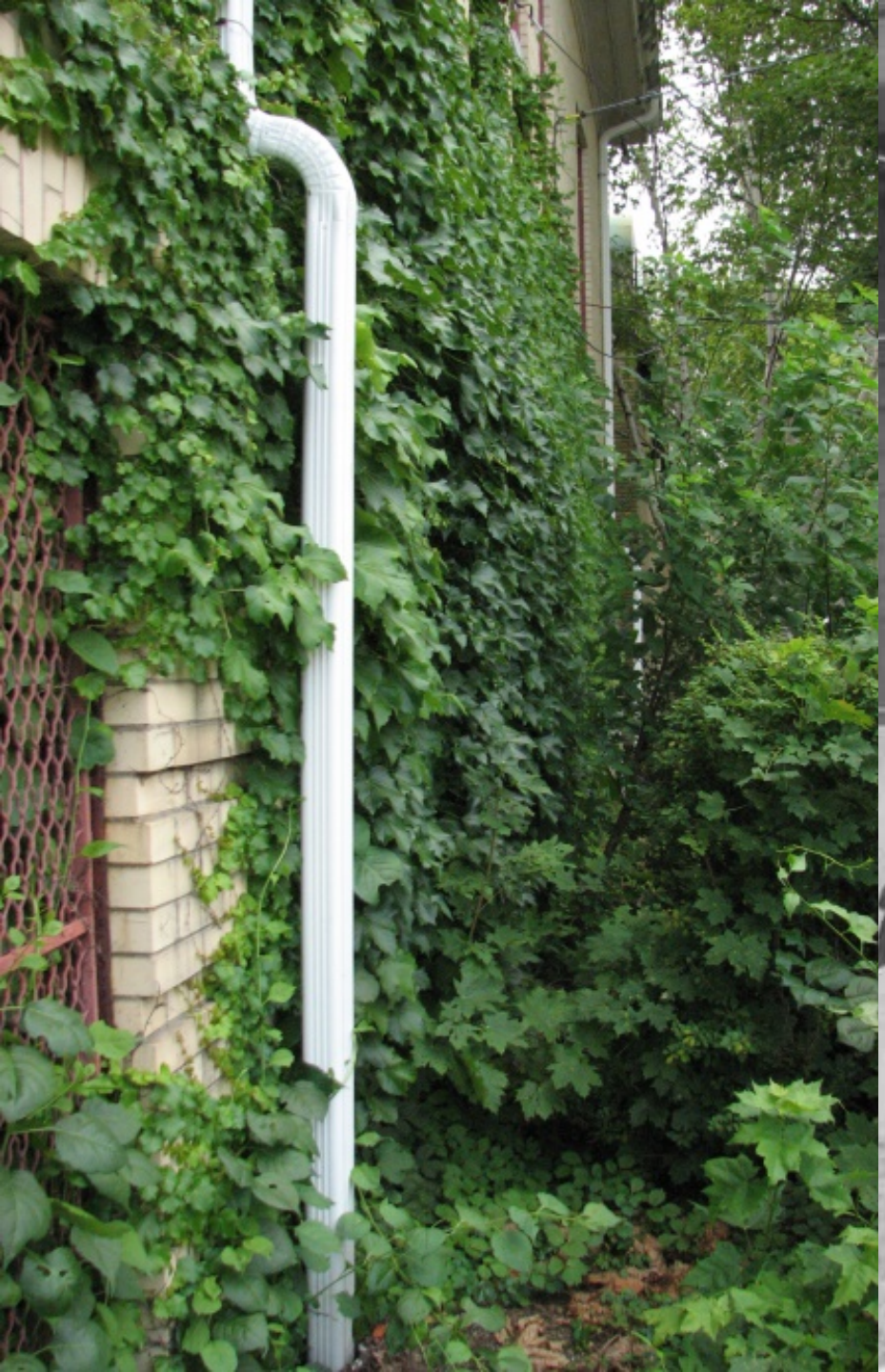
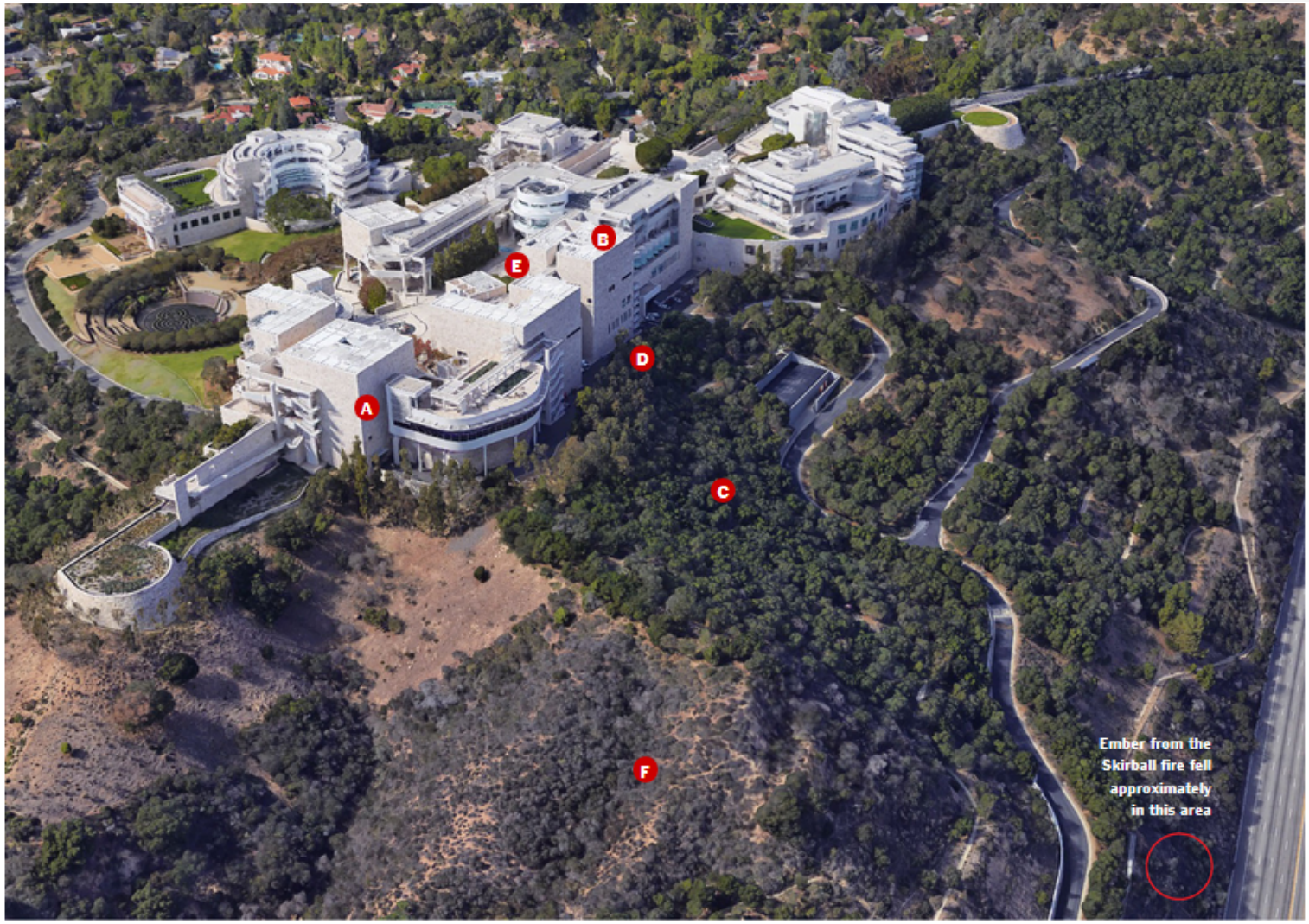
LABEL





The New York Times | Source: Google Earth

A TRAVERTINE STONE was chosen to face all major walls, specifically because of its fire-resistant qualities.

B CRUSHED STONE, a fire-resistant material, covers each flat roof.

C OAK TREES that cover much of the grounds are regularly pruned, so that their canopies stay high off the ground.

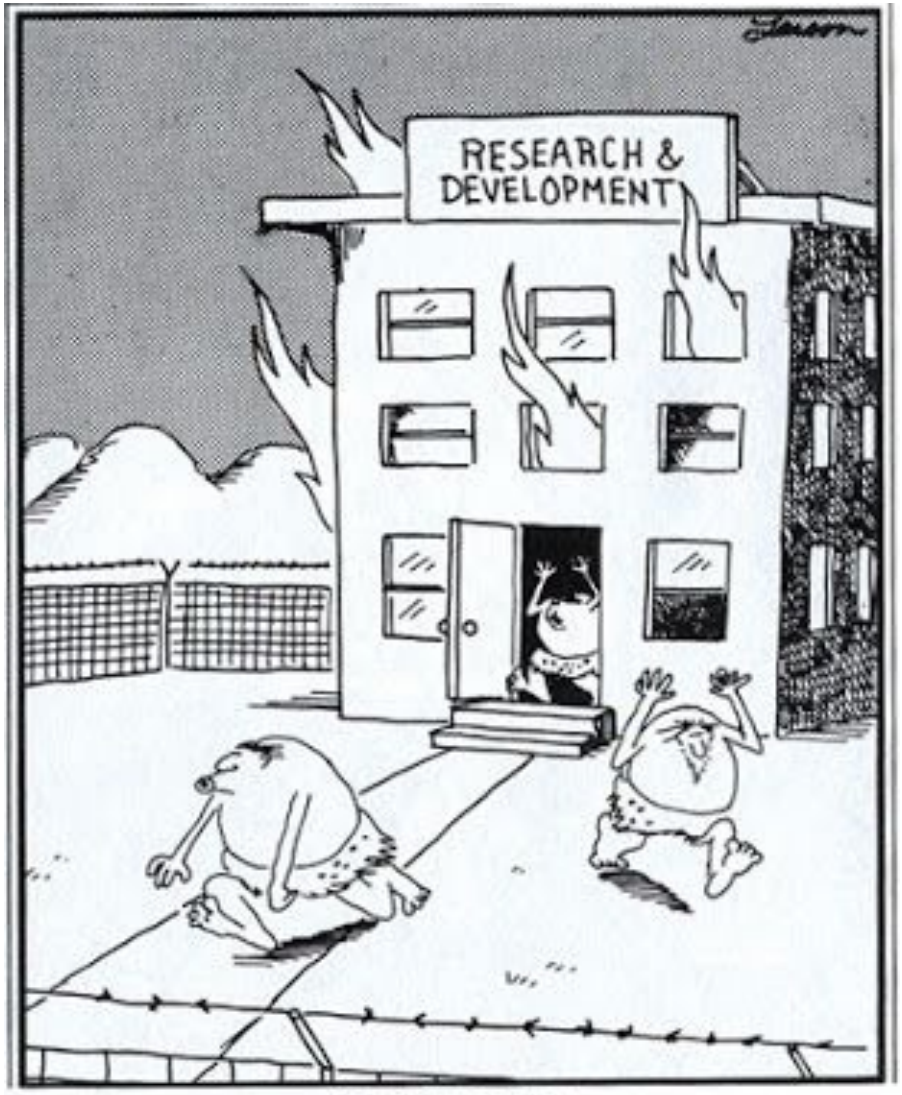
D ACACIA SHRUBS were chosen for plantings closest to the building and on slopes, because they are fire-resistant and can hold plenty of water.

E A one-million gallon **WATER TANK** sits beneath the Getty's underground parking structure, to supply water for the irrigation system

F A network of **IRRIGATION PIPES** runs throughout the grounds. In case of fire, sprinklers can be used to soak the earth.

The Cretaceous Disaster Preparedness Committee

Questions?



Fire is invented.