

the southwest corner. Cladding damage extended over much of the south face, and ranged from broken windows to removal of granite panels and windows.

4.3.2 Reconstruction of the Fires

- There were fewer photographs and videos of the WTC 7 fires than there were of the fires in the WTC towers. This resulted in intermittent coverage of the building exterior from about 11:00 a.m. until just after the collapse at 5:20:52 p.m. Nonetheless, the visual evidence was sufficient to guide the reconstruction of the growth patterns of the fires.
- Fires were observed on multiple floors of WTC 7 following the collapse of WTC 1. The fires were likely to have started at locations facing WTC 1, caused by flaming debris, induced electrical failures, etc.
 - Early fires were seen on the southwest corner of Floors 19, 22, 29, and 30 shortly after noon. These were short-lived. Firefighters reported seeing fires on the south and west faces of WTC 7 as soon as visibility allowed (estimated to be 11:00 a.m. to 12:00 p.m.).
 - Sustained fires occurred on Floors 7, 8, 9, 11, 12, and 13. The fires on these six floors were fed by combustibles (e.g., desks, chairs, papers, carpet) that were ordinary for commercial occupancies.
 - Unlike the situation in the WTC towers, there was no widespread spraying of jet fuel to ignite numerous workstations simultaneously. Rather, in the earlier hours of the fires, the flames spread from one workstation to another, which is a much slower process.
- On each floor, the local fire origin likely occurred at a single workstation component or office furnishing item.
 - On Floors 7 through 9 (open landscaping), the initial fire was likely spread by flame contact with an adjacent workstation and then radiative ignition of a workstation cluster across an aisle. By the time this second cluster was fully involved, the prior cluster burned out. Eventually the upper gas layer over enough of the huge open space was likely hot enough for radiatively enhanced ignition of multiple workstations, i.e., non-linear growth.
 - On Floors 11 through 13 (enclosed offices), the fire likely grew within an office, reaching flashover in several minutes. After about 5 to 15 minutes, the ceiling tile system likely failed and the hot gases created a local hot upper layer. Thermal radiation from this layer ignited adjacent offices. Offices across a corridor likely ignited more slowly.
- The collapse of WTC 7 was not caused by diesel fuel fires or by fire-induced failure of the transfer trusses on Floors 5 and 6.
 - Simulation of hypothetical, worst-case fire scenarios on these floors showed that pool fires, associated with ruptured diesel fuel lines, (a) would have raised the temperatures near the generators to the point where they all would have failed, cutting off the electrical