

4.5.2 Alarm System

- The alarm system in WTC 7 was only capable of determining and displaying (a) areas that had at some time reached alarm point conditions and (b) areas that had not. The WTC 7 alarm system recorded information at one location in the building: the FCS in the 3rd floor lobby.
- On September 11, 2001, the fire alarm system installed in WTC 7 sent to the monitoring company only one signal indicating the time and date of a fire condition in the building. This signal, sent shortly after the collapse of WTC 2, did not contain any specific information about the location of the fire within the building. No subsequent signals were recorded or sent, despite the prevalence of fires in the building until the building collapsed.
- No fire alarm system equipment or documentation from WTC 7 was located during the site clean-up on site, nor were there indications that anyone looked for it during the clean-up.
- Transmission of critical data outside the building to a monitoring station would have provided one means to preserve event data. Although modern systems are capable of this communication, it is not done in practice.
- Survivability of alarm systems data on computer hard drives, memory modules, or printouts in building fires and collapse environments is not addressed in present installation standards.

4.5.3 Smoke Management

- WTC 7 was sprinklered throughout and was, therefore, exempted from the requirement for stair pressurization systems. The building was equipped throughout with fire dampers at duct penetrations into vertical shafts, consistent with the NYCBC.
- The base building system serving the lower floors of WTC 7 provided a smoke exhaust capacity of 36,000 ft³/min (61,000 m³/h), which was less than the minimum value required by Local Law #16 (48,000 ft³/min), as of 1984.
- Consistent with the NYCBC, the WTC 7 HVAC systems were designed to incorporate a smoke purge mode, by which each floor of the building could be exhausted/purged of smoke manually on a floor-by-floor basis from the Fire Command Center, which was located on the 3rd floor of the building at the main lobby security desk.

4.5.4 Fire Suppression

- In general, the water supplies, automatic sprinklers, and standpipe/pre-connected hose systems in WTC 7 exceeded the minimum applicable code requirements, as well as associated engineering best practices.
- Sprinkler protection was installed throughout WTC 7 on September 11, 2001, with the exception of specific rooms and spaces where sprinkler protection was permitted to be omitted by the NYCBC.