

The available imagery suggests that, while the dust cloud and light debris that reached WTC 7 from the collapse of WTC 2 was sufficient to break out windows that were directly impacted, and to enter into WTC 7, the material lacked sufficient momentum to cause any significant structural damage. The absence of visible smoke and fire makes it likely that no fires were ignited in the building as a result of the collapse of WTC 2.

5.5.2 Damage Resulting from the Collapse of WTC 1

The Collapse of WTC 1

WTC 1 began to collapse at 10:28:22 a.m. The collapse was captured in numerous videos and photographs. Videos indicate that it took roughly 10 s for the first debris to reach the ground. Figure 5–40 shows a series of six pairs of images taken during the collapse of WTC 1 from just west of north (cropped photographs) and from just north of west (frames from a video shot from a helicopter). The paired images are coincident in time to within 0.06 s. In the photographs from the north, WTC 7 is immediately in front of WTC 1 and is partially obscured by a water tank on top of a closer building. WTC 7 is indicated by an arrow in the video frames.

The video frame taken 6.50 s after the collapse started shows that the initial large debris created by the collapse fell close to the outer wall of WTC 1. As the collapse continued, the debris extended further outward from WTC 1, but the west view shows that the majority of the debris was still falling well away from WTC 7 10.63 s after the collapse began and 0.5 s after the first debris reached the ground. However, starting around this time, several substantial pieces of debris were expelled outward toward WTC 7 from the main cloud of the falling material. The first of these is visible in the images taken at 10.63 s (marked with arrows). Several of these pieces appeared to arc downward toward the south face of WTC 7.

In the images taken at 11.67 s, the arc (marked with arrows) formed by the initial ejected building section is distinct in both views. In the north photograph, this falling debris is visible above WTC 7 just to the right of the west penthouse. An additional piece of debris (also marked with arrows) is just beginning to emerge from the cloud. The western view at 12.33 s shows that the arc from the initial ejected debris is approaching WTC 7. The additional debris to the left and above has fully emerged and is moving outward from the main debris cloud. By 12.97 s, the later ejected material (marked with arrows) has formed a distinct arc as seen from the west, and appears just above the west penthouse in the corresponding photograph from the north.