

The following buildings suffered the most severe collateral damage from the collapse of the WTC towers:

Major Damage (shoring and large debris removal required):

WFC 3, American Express
Verizon
30 West Broadway
45 Park Place
Bankers Trust
90 West Street
130 Cedar Street

Partial Collapse

WTC 4
WTC 5
WTC 6
Winter Garden building (later revised to Major Damage)

Full Collapse

WTC 3
WTC 7
North Bridge from Winter Garden to WTC 1
St. Nicholas Greek Orthodox Church

Damage to the WTC and Bankers Trust buildings has been covered in previous chapters, and no inspection was made of St. Nicholas Greek Orthodox Church, because it was completely destroyed by falling debris. The damage to and performance of the remaining buildings is briefly presented. Immediately after the collapse of the towers, One Liberty Plaza was reported to be near collapse, but was later found to have no structural damage. The events leading up to this misunderstanding are briefly discussed.

7.2 World Financial Center

The World Financial Center (WFC) complex is located immediately west of the WTC Plaza, and includes four office towers, pedestrian walkways, and the Winter Garden (Figure 7-1). The buildings are of contemporary construction dating from 1985 to the present, have large floor plans, and are steel-framed structures with granite-clad curtain wall facades.

These buildings sustained varying degrees of façade and structural damage from the debris, with the eastern elevations experiencing the heaviest damages. The north and south elevations sustained lesser debris damage. WFC 1, 2, and 3 suffered glazing and façade damage, but WFC 4 was undamaged. Debris and dust penetrated nearly the full floor areas of WFC 2 and WFC 3 at several levels.

7.2.1 The Winter Garden

The Winter Garden lies between WFC 2 and WFC 3. It is a large greenhouse structure with a glass and steel telescopic barrel vault roof and is one of the largest public spaces in New York. The structure covers an area of approximately 200 feet by 270 feet and includes a public space of 120 feet by 270 feet. The largest vault has a clear height of about 130 feet and a span of 110 feet. The west elevation is made entirely of glass panels. The east end of the building has five composite steel floors that support a glass dome that