

	Observation	Potential Root Cause(s)
1.	Ponding, bird-baths, ice accumulation	Inadequate surface drainage slope, insufficient or plugged floor drains
2.	Freeze-thaw scaling and deteriorated concrete	Poor air-void system in the concrete, low-strength concrete
3.	Cracked concrete	Inadequate jointing, poor support, thin cross section, high loads
4.	Disintegrating brick	Poor quality brick – highly absorbent, not properly fired
5.	Cracked or defoliating stone	Stone not up to par for freeze-thaw climates
6.	Loose brick or stone	Poor subbase support, insufficient subsurface drainage capability, high loads
7.	Settlement	Poor subbase support: poorly compacted soils, loose sand
8.	Joint mortar deterioration	Plaza should not have included grouted joints, poor quality joint mortar
9.	Failure of brick and stone bonded system	Poor subbase bond, inadequate jointing of subbase
10.	Interior leakage – global	Failure or lack of buried waterproofing membrane
11.	Interior leakage – local	Flashing failure at floor and planter drains, expansion joints, sheet membrane edges, and terminations
12.	Brick surface with efflorescence deposits	Poor subsurface drainage
13.	Failure of supplemental top waterproofing membrane/coating	Waterproofing membranes should never be installed on top of plaza systems, whether on ground or on structural deck.
14.	Aesthetics	Outdated
15.	Functional	Poor or inefficient layout, difficult pedestrian flow