Table 1 Key events in the evolution of seismic design codes in Turkey

Year	Event	Impact
1939	Erzincan earthquake (M 7.9)	
1940	Committee formed to develop a seismic zonation map for Turkey	First seismic code published
1942		Earthquake zone map prepared; map promulgated in 1945
1943	Tosya earthquake (M 7.2)	
1944	Gerede earthquake (M 7.2)	Seismic code revised
1947		Seismic code revised
1949		Seismic code revised
1953		Seismic code revised
1958	Ministry of Reconstruction and Resettlement established	
1961		Seismic code revised
1963		Earthquake zone map revised
1966	Varto earthquake (M 7.1)	
1967	Adapazari earthquake (M 7.1)	
1968		Seismic code revised
1975		Seismic code revised; ductile detailing introduced
1992	Erzincan earthquake (M 6.9)	
1997		Seismic code revised; ductile detailing required
1999	Izmit earthquake (M 7.4) Duzce earthquake (M 7.2)	

Table 2 Structural type coefficient, K, from 1975 Turkish earthquake code

Structure Type	K
All building framing systems except as hereafter classified	1.00
Box systems with shear walls	1.33
Ductile moment-resisting frame with filler wall types a/b/c[1]	0.60/0.80/1.00
Non-ductile moment-resisting frame with filler wall types a/b/c	1.20/1.50/1.50
Dual shear wall-ductile frame system[2] with filler wall types a/b/c	0.80/1.00/1.20

1. Filler wall types: a = reinforced concrete or reinforced masonry walls; b = unreinforced masonry block partition walls; c = light partition walls or prefabricated concrete partition walls

2. Ductile frame designed to resist at least 25% of the total lateral force

Table 3 Response modification factors in current codes

Lateral force-resisting system	1997 Turkey[1]	1997 US
Reinforced concrete shear wall	6	5.5
Reinforced concrete moment-resisting frame	8	8.5
Steel eccentrically braced frame	7	7
Steel moment-resisting frame	8	8.5

1. Framing systems of high ductility; value given is for R_a

Table 4 Characteristics of the Adapazari City Hall [Aytun, 1972]

	1964 City Hall	Retrofitted City Hall
Strength of the building	Stronger in the y direction	Equal in both directions
Fundamental period (x-dir)	1.38 sec	1.10 sec
Fundamental period (y-dir)	1.08 sec	0.31 sec
Total weight	4370 tons	4732 tons
Stiffness eccentricity	$e_x = 17.7\%$, $e_y = 14.2\%$	$e_x = 0\%$, $e_y = 1.1\%$
Lateral force coefficient	$C = 0.04$	$C = 0.07$