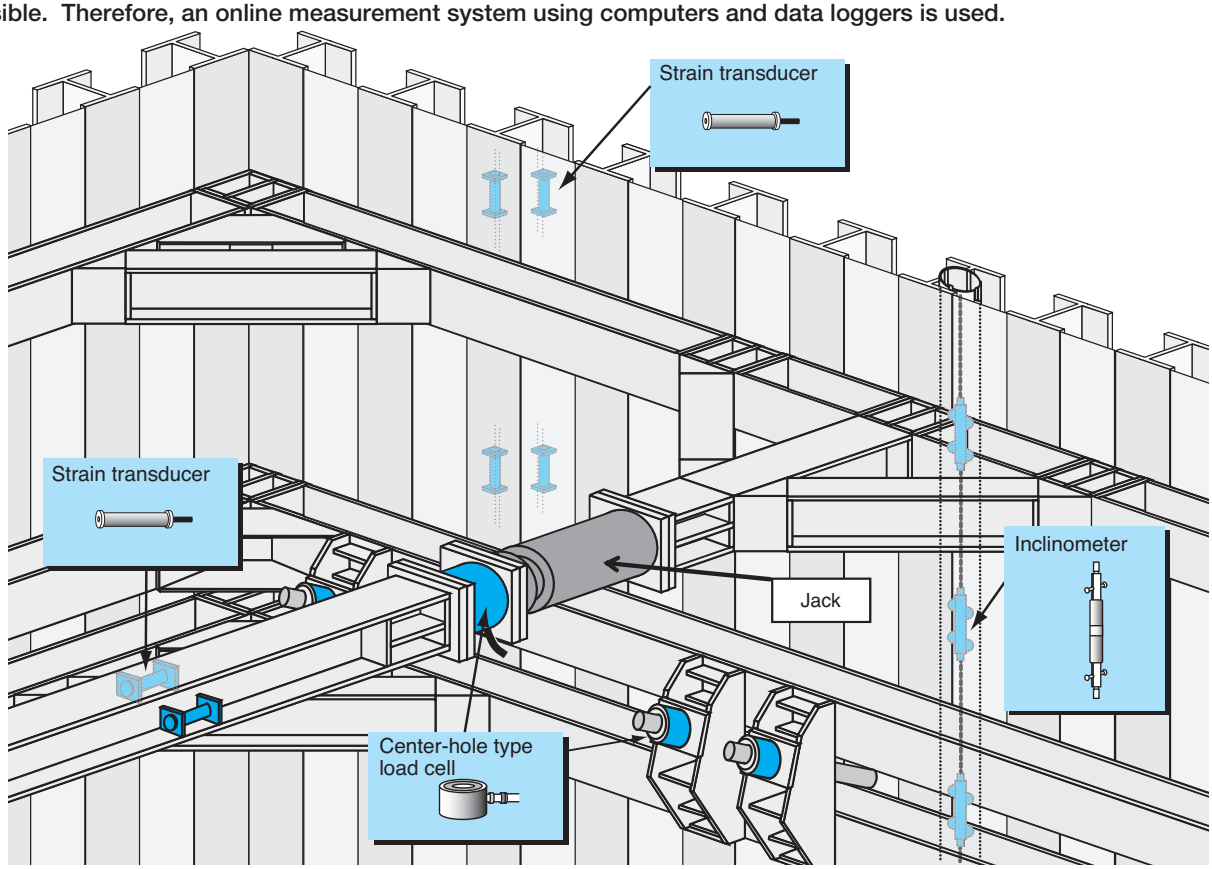
3 Retaining Wall measurement

Conditions to be monitored when constructing retaining walls include subsidence, movement and displacement of ground, groundwater conditions, lateral pressure on earth retaining walls, deformation and pressure conditions of earth retaining structures, and so forth. The collapse of retaining walls, effects of collapse on surrounding ground, heaving, boiling, and other dangerous phenomena must be detected and necessary actions must be taken as quickly as possible. Therefore, an online measurement system using computers and data loggers is used.



A list of Measuring Instruments

Object of measurement	Measurement items	Instruments	Type
Earth retaining wall	Lateral pressure	Soil pressure gauge	KDB-PA, KDD-PA, KDF-PA
		Pore water pressure gauge	KPA-PA, KPB-PA
	Deformation and stresses of wall	Strain transducer	KM-B
		Reinforcing bar meter	KSA-A, KSAT-A
		Inclinometer probe	KB-GC, KB-HC
		Surface Inclinometer	KB-DB, KB-EB, KB-AB, KB-AC
		In-place inclinometer	KB-JE, KB-KE, NKB-LD, NKB-MD
	Temperature of concrete	Thermocouple	T
	Axial force of anchor	Center-hole type loa cell	KCM-NA, KCE-NA
Strut	Axial force of strut	Pressure transucer	PWH-PA
		Center-hole type loa cell	KCM-NA, KCE-NA
	Strains of strut	Strain transducer	KM-B, KM-BT
	Temperature	Thermocouple, Temperature gauge	T, KT-A
Waling	Stress of waling	Strain transducer	KM-B
Cutting bottom	Heave of ground at bottom	Ground displacement transducer	KLA-A, NKLA-A
	Underground water level	Water level meter	KW-C
	Pore pressure	Pore water pressure gauge	KPA-PA, KPB-PA
Surrounding ground	Settlement	Ground displacement transducer	KLA-A
	Lateral displacement	Inclinometer probe	KB-GC, KB-HC
		In-place inclinometer	KB-JE, KB-KE, NKB-L, NKB-MD
	Underground water level	Water level meter	KW-C
	Settlement	Water tube displacement transducer	KWL-E
Surrounding structure	Inclination	Surface inclinometer	KB-AB, KB-AC, KB-DB, KB-EB
	Crack	Crack displacement transducer	KG-A

Measuring System Block Diagram