Deep Foundations are required when:

1. Depth to great to adequate bearing materials

2. Friction resistance is required

Deep Foundations:

- Buildings loads to deeper, more competent soils
- 2 types
  - End bearing
  - Bearing through Friction

- Piles materials used
  - wood
  - Steel
  - pre cast concrete

Dense piles support the Building

Grade beams not supported by soil

underpinning process

Dig narrow

Pour new concrete wall

Repeat for soil area

Floating Foundation

water table depth

Floating hazards

Silt boundaries

deep foundations can solve many challenges for large buildings

shallow are less risk are capable

underpining is a common occurs in urban environments