

# HEAVES AND CRACKS: BUILDING ON EXPANSIVE CLAYS

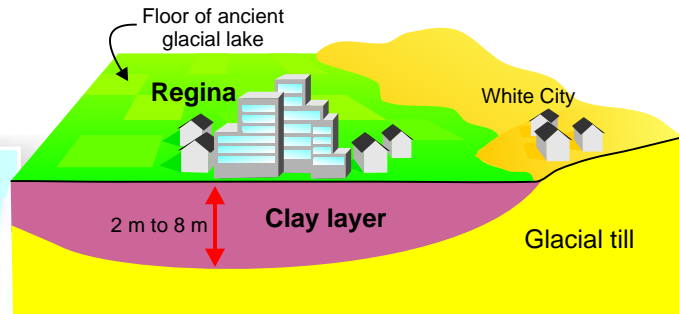
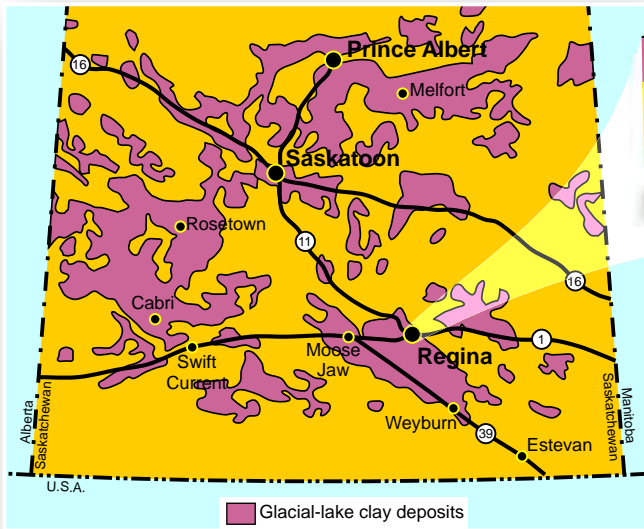


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## Regina's woes

Many Regina homeowners know these problems: cracks appear in walls, sidewalks, and driveways; the basement floor heaves and cracks, and doors and windows won't open or close. What's going on? These problems are caused by glacial-lake sediments below Regina that expand and shrink with changes in moisture content so that house foundations, sidewalks, and roads shift. These sediments contain clays that swell when they become wet, and shrink when they dry.

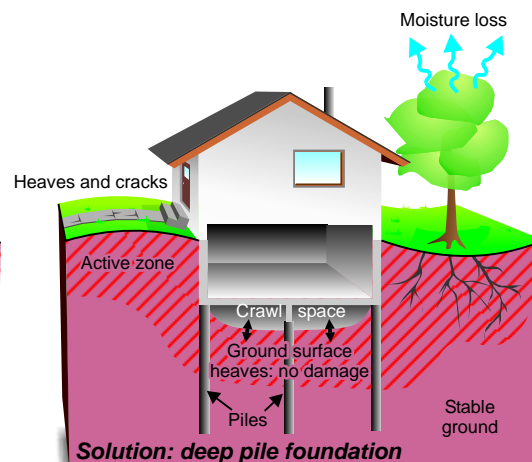
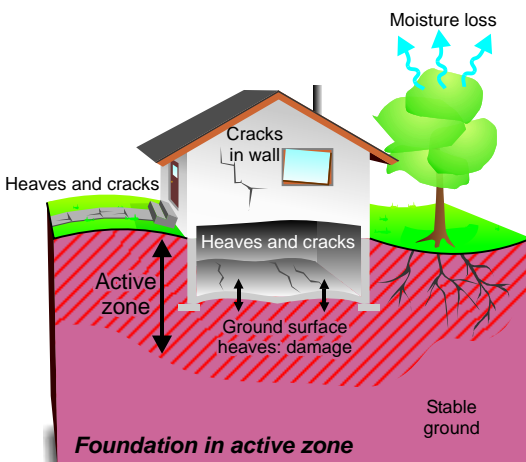


## Source of the problem: glacial-lake clays

Many communities in southern Saskatchewan experience foundation problems. All these communities share one thing in common — they are built on clay sediments deposited in ancient glacial lakes.

## Looking for solutions

Swelling and shrinking are limited to the uppermost part of the ground, which gains and loses moisture through the year due to changes in precipitation and vegetation growth. Below this 'active zone', the ground is stable. One engineering solution is to build foundations on piles that extend through the active zone to stable ground below.



Foundation in active zone

Solution: deep pile foundation