Monitoring on Subsidence Claims

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Subsidence Claims Manager
Key Milestones

• Subsidence cover 1972


• Project Management 1992 onwards

• Mitigation

• Surge 1995/2003

• Delegated authority Schemes
What are the challenges for the industry in a changing market?

2006 challenges

Up to 50,000 notifications and £450 Million Spend

Subsidence Notification Frequency

[Diagram showing subsidence notification frequency from 1995 to 2006, with peaks in August and September for most years, except 2000 and 2002 which show lower notifications.]

4/28/2010
Actual Claim Figures 2009

2009 subsidence notifications

Year

Number of claims


40,000

30,000

20,000

10,000

0
Subsidence Process

Claim Notification
Initial Quality Visit By Loss Adjuster

Commence Recovery
Investigation
Mitigation
Monitoring
Initial Schedule

REPAIR DECISION
Under take Repairs
Network Contractor
Tender

Fast Track
Commence Recovery

Finalise Recovery
Finalise Claim
Monitoring - Objectives

1. Monitoring to confirm that the cause of damage is not subsidence.

2. Monitoring to establish the cause of subsidence (incl. gaining evidence for a recovery.)

3. Monitoring to establish ongoing movement

4. Monitoring to check the success of mitigation/remedial action

MONITORING IS NOT A MEANS OF DELAYING OR AVOIDING SOME OTHER DECISION
But it has a bad reputation

- Used to be a way of managing surge;
- When you think about the drivers then it causes delay;
- Excessive use and delay mean it is very much;
  ‘monitoring by exception’
When not to monitor

In some cases we should go straight to repairs;

- Leaking drain and damage less than 5mm.
- Policyholders tree and damage less than 3mm.

On other occasions we should repudiate;

- If the damage is not consistent with subsidence.
How?

Traditional Crack Monitoring

- Demec Studs
- Take an initial reading
- Set up the template and ask technician to monitor.
Crack Width Monitoring
Crack Monitoring

Monitoring Services - Results

- Crack Width Left Hand side mm
- Months across the bottom
- For clay shrinkage cracks close in the winter and open in the summer.
- If it’s moving more than 1mm we need to find out why?
Alternative Level Monitoring

- To record foundation movement and assist in the diagnosis (or to prove the absence) of subsidence or heave within the terms of the insurance policy.

- It is considered a superior method to the use of proxy measurements (i.e. recording crack widths) or predictive assumptions (soils analysis).

- Required on TPO Tree cases
Level Monitoring
In cases where we suspect seasonal root induced clay shrinkage, the first reading would typically be taken at the onset of cracking between August and the end of September. The second reading will be taken 3 months later – November through to mid-December.

Further readings will only be taken in contentious or difficult cases, when it is likely they will be supported by site investigations. We need to ensure second visits are not over-looked.
Caution

There is a potential for erroneous readings if we take the first and second readings prior to, and just after the ‘peak’ when they could (in theory at least) be similar, suggesting the building to be stable, when in fact very large movements are taking place.
Results

- Results require interpretation
- We are measuring deflection rather than crack damage
- Deflection Ratio - deflection/length = 0.2 to 0.4*10^{-3} before cracking develops (Burland and Wroth 1974)
- To more simple souls 10mm at foundations = 1mm crack.
Level Monitoring

Level monitoring has been costly

- But it is a very powerful forensic tool.

- It provides a very clear picture of movement.
Example

Huge Beech Tree
Lots of damage

We all agree it’s the Beech.

Whole house piling?

£160,000?
Example

The Level Survey

What does it reveal?
Example

Low Shrinkage Clay
P.I’s < 20%

R.W. entering ground - not connected to system?

Crack movement of 1.4mm only - maximum.
Another Example

No expensive deep datum just relative movement
“If it goes down and then comes up…”

No expensive deep datum just relative movement

4th October 1997
2nd September 1998
Another Example

No expensive deep datum just relative movement

“It is vegetation - clay shrinkage”

4th October 1997
2nd September 1998

Station 1
-6.7mm

Station 3
-12.3mm

Station 4
-15.0mm

Station 15
-25.7mm

Station 14
-11.6mm

Station 13
-1.00mm (extrapolated)

Station 7
+1.0mm

Station 8
+1.8mm

Station 10
+0.7mm

Station 1
-6.7mm

Station 5
+0.7mm

Station 11
1.0mm (extrapolated)

Station 1
-6.7mm

Station 5
+0.7mm
Another Example

No expensive deep datum just relative movement

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- Station 3: -12.3mm
- Station 4: -15.0mm
- Station 5: +0.7mm
- Station 7: +1.0mm
- Station 8: +1.8mm
- Station 10: +0.7mm
- Station 11: 1.0mm (extrapolated)
- Station 13: -1.00mm (extrapolated)
- Station 14: -11.6mm
- Station 15: -25.7mm

4th October 1997
2nd September 1998
Another Example

No expensive deep datum just relative movement

“If it keeps going down, it’s poor ground/water”
No expensive deep datum just relative movement

“If it keeps going down, it’s poor ground/water”

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-6.7mm

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Distortion Surveys
Example Cliff Cottage
Cliff Cottage

Notes:
1. Figures represent a departure from the vertical in millimetres.
2. Encircled figures denote verticality reference station number.
3. This survey was undertaken 12/12/05
Cliff Cottage

Notes:
1. Figures represent a departure from the horizontal in millimetres.
2. Crossed-out figures denote level station reference number.
3. Zero relative to TDM (10.000) = as indicated
4. This survey was undertaken 12/12/05

Levels taken on the u/s of the caves
How do we meet the challenges

- Innovation
- Education
- Collaborative working
Innovation - Remote monitoring

- Speed, don’t miss the peak readings
- But can it compete on cost?
The Power of Real Time Data
Clay Shrinkage Seasonal Movement

Opening (Summer)  Closure

Closure (Winter)

Kent
Site Plan-Landslip
Plan of monitoring Locations
Crack Damage - Landslip
Crack Damage - Landslip
Landslip Case – Remote monitoring

**Asset Data**
- **Name Reference**: Int No 11 Bedroom
- **Type**: Crack

**From** To
- Wed 19/11/2008 00:00
- Wed 26/11/2008 23:59

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Tilt Sensors

3.30pm, Wednesday, 20th April, the Ash tree made the house move.
Level and Time Domain Reflectometry (TDR) Dielectric Sensors

SP Monitoring Services have been working closely with the ‘clay research group’ to evaluate “Level” and TDR (which measures moisture content in the ground) sensor technology.
Remote - The Benefits!

- Sensor technology enables an early warning system of movement
- Reduced touch claim handling
- Accurate reporting and less opportunities for human error
- Web accessible by all interested parties in the claim process
- Fewer site visits - less disturbance to Policyholder
- Greater capability to handle increased volumes.
- Tool to validate and compliment desk top risk assessment models
- Pre-claim applications
Collaboration

- Needs to be an industry wide agreement
- Subsidence Forum
- BRE
- CILA
- RICS