

CREBS IV

# Long term behavior of retaining walls in Dublin boulder clay

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# Heuston / Westgate



14 m high  
secant wall  
with  
single anchor



# Ballycullen Road



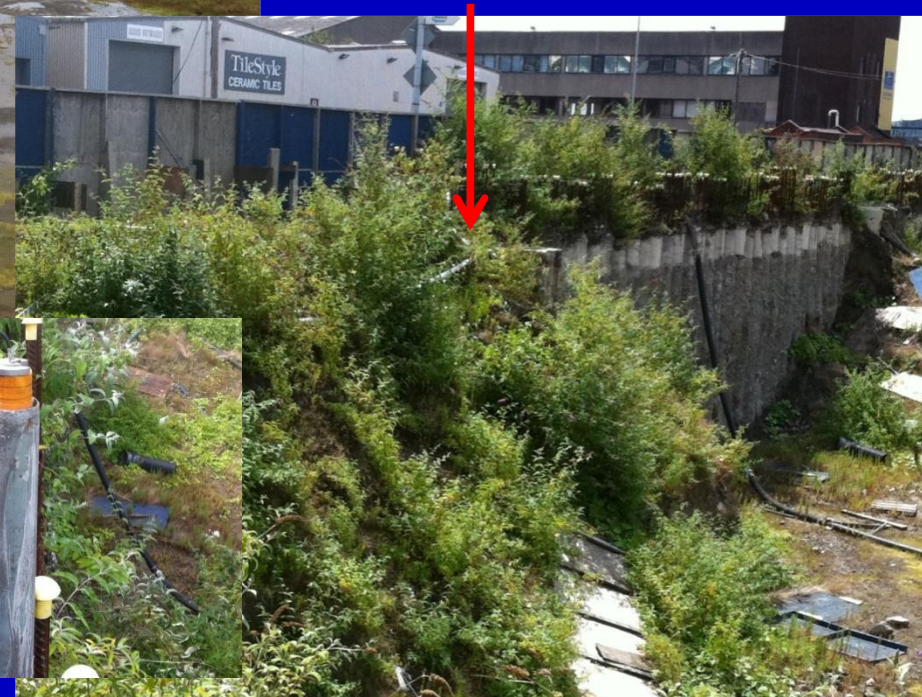
7.5 m permanent cantilever  
600 mm diameter contiguous piled wall

# Anglo Irish Bank site – North Wall Quay



7.5 m cantilever  
secant piled wall

Inclinometer



# Hammond Lane



LUAS

4 m high cantilever wall immediately adjacent to LUAS railway line



RCSI

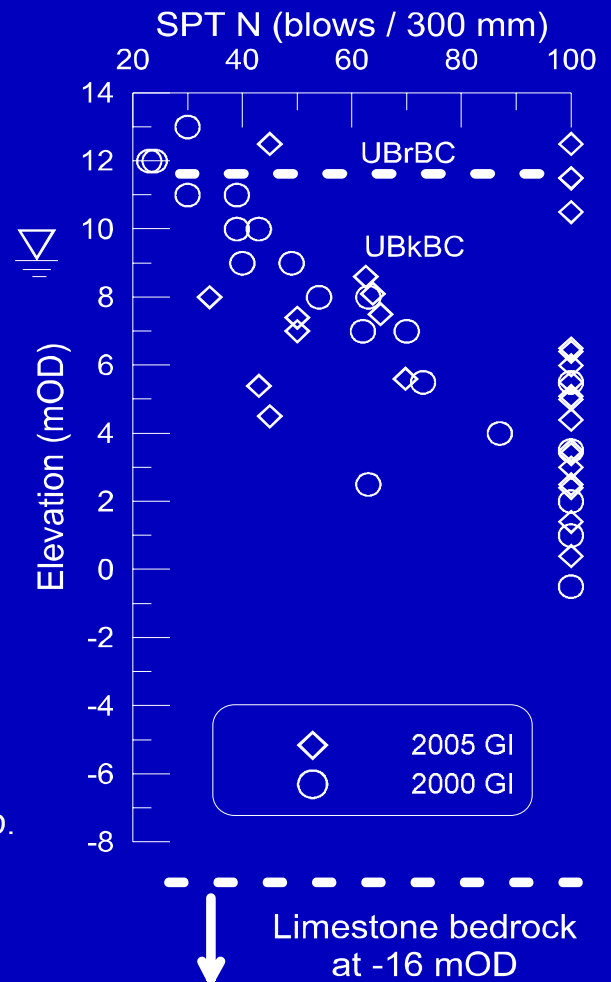
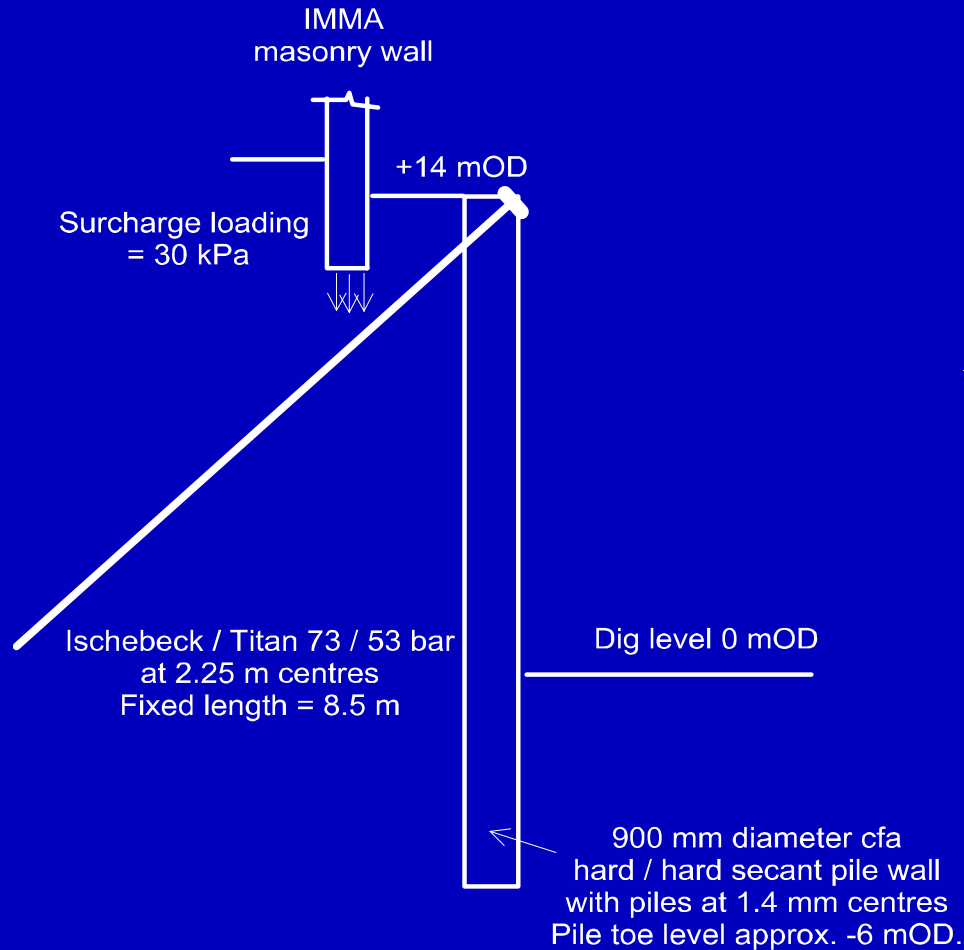
York St.



Church  
St.



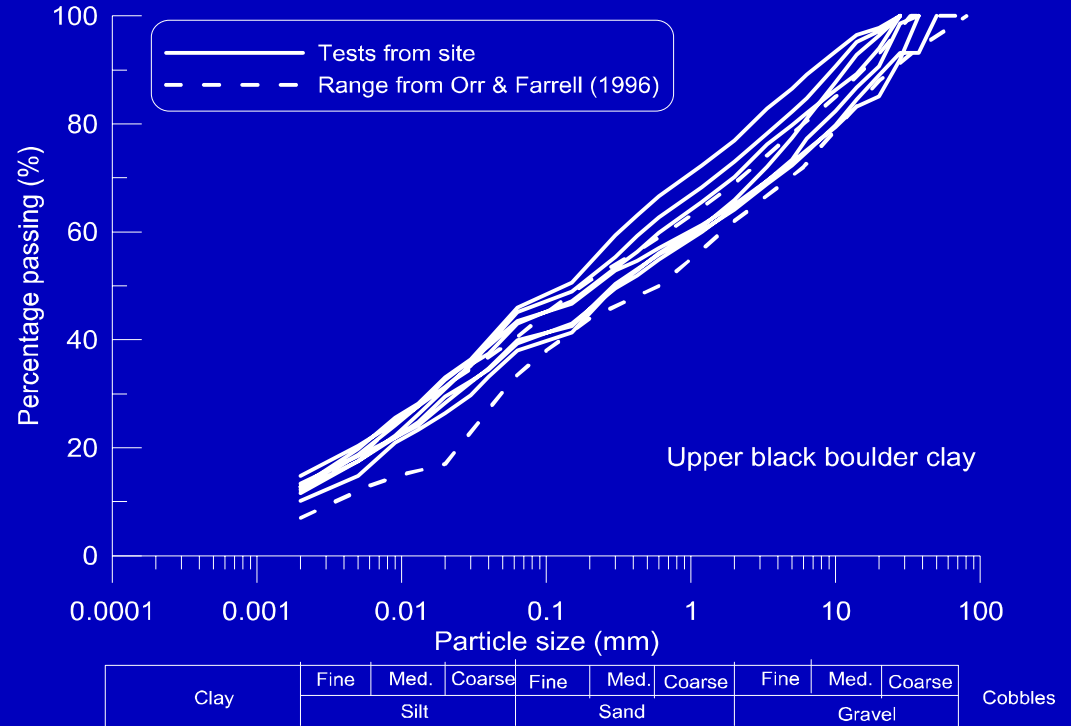
# Examples for Dublin Boulder Clay Heuston / Westgate



# Dublin boulder clay



Material is very strong and stiff

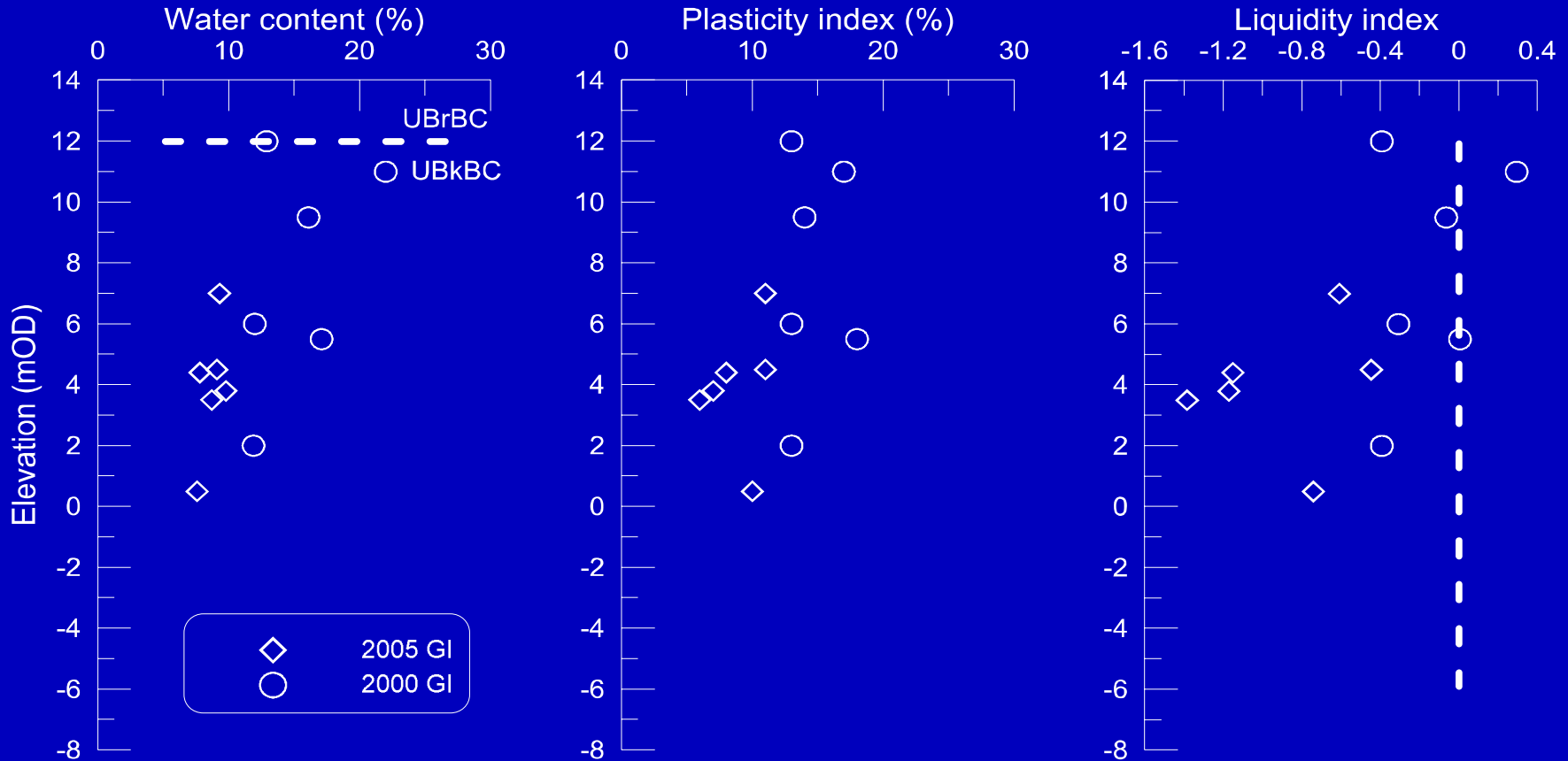


Well graded (diamicton)  
Very low permeability

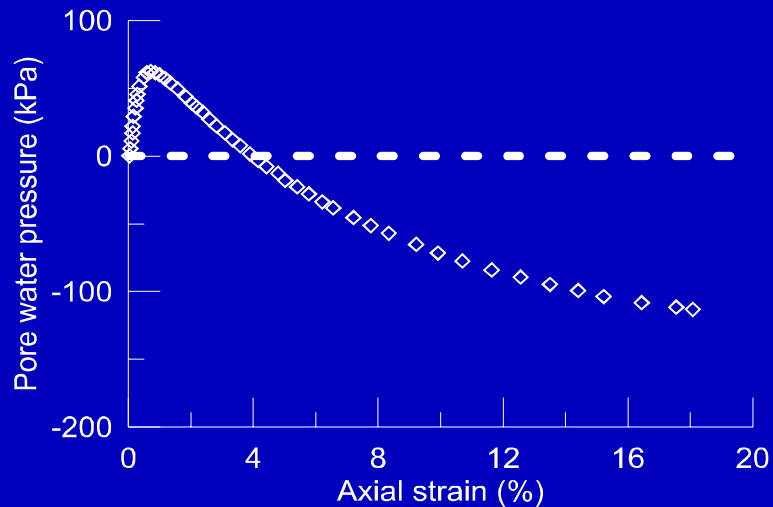
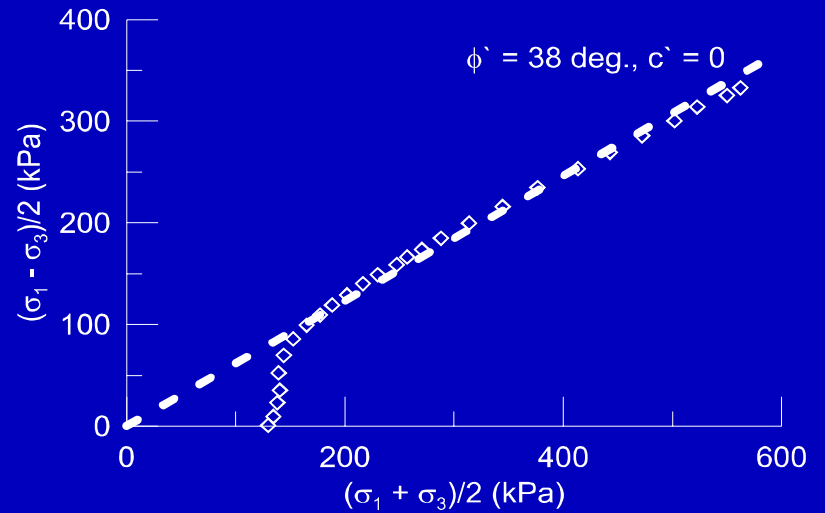
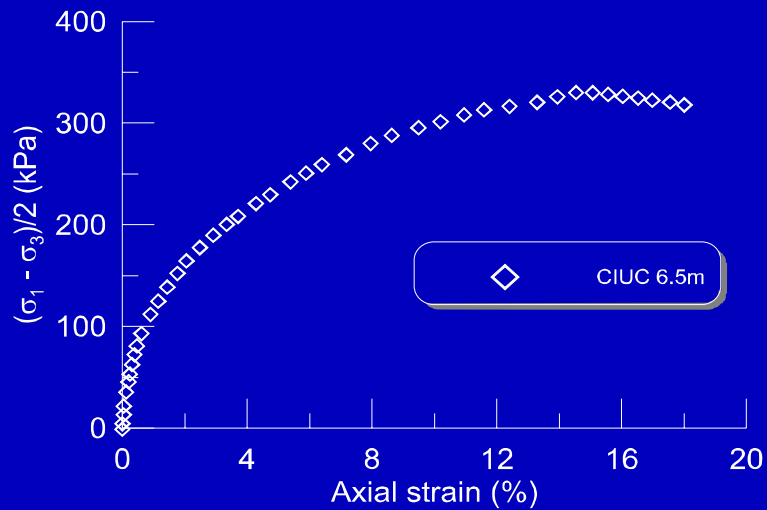




# Westgate – index testing

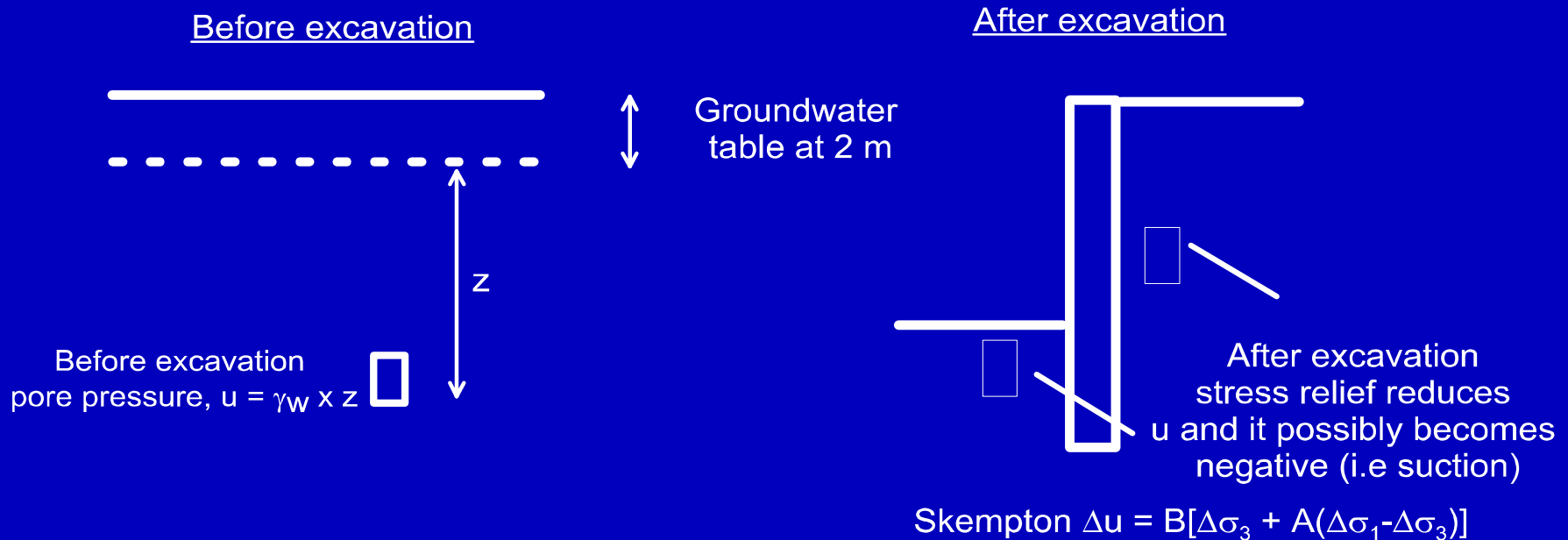


# Typical triaxial behavior - Heuston

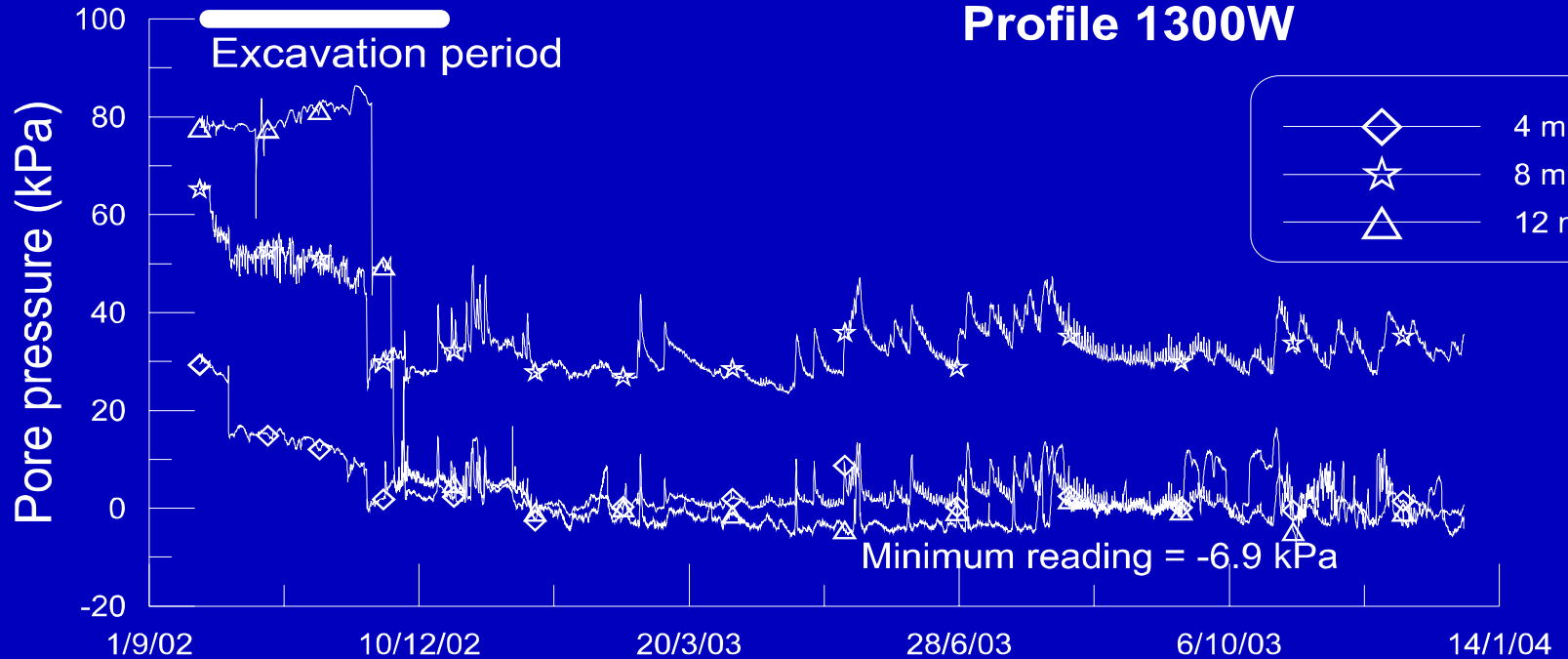


High strength and stiffness  
Strongly dilational

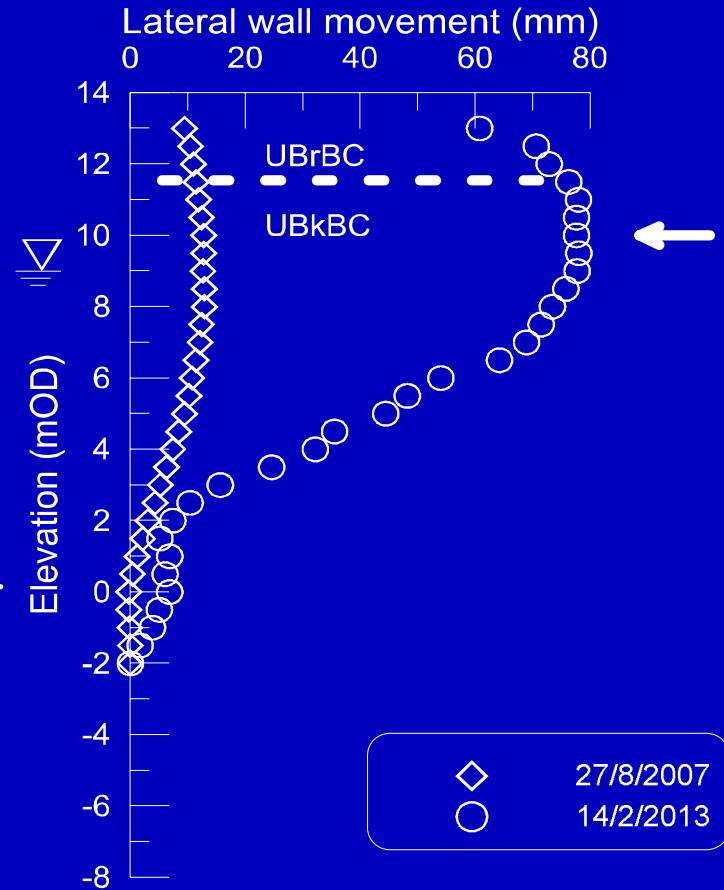
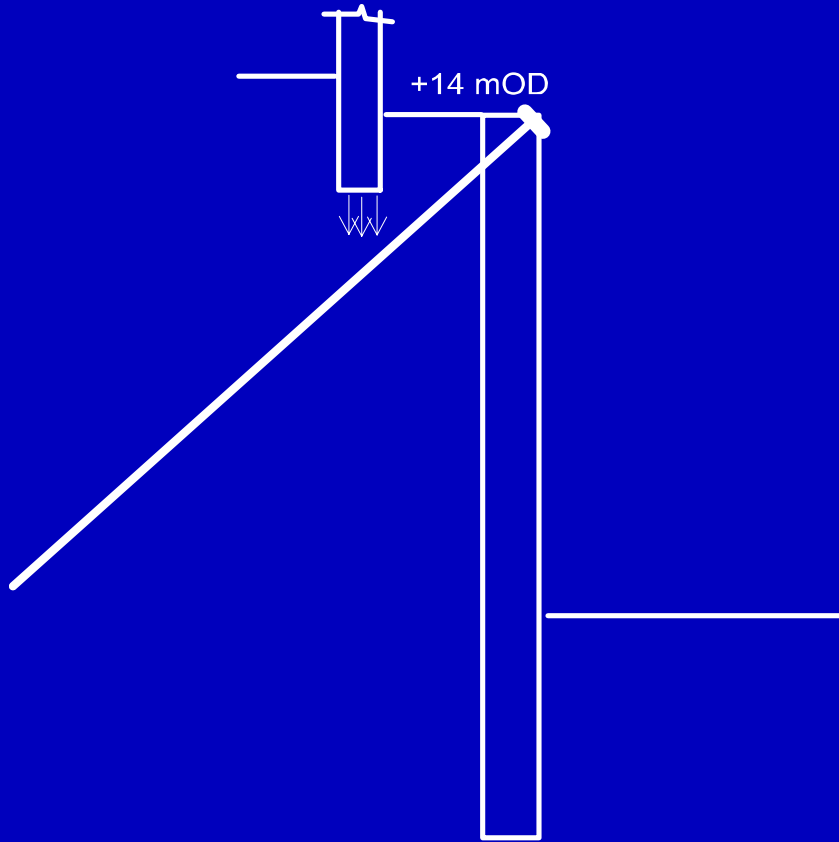
# Effect of stress relief on pore pressure



# DPT – 12 m high soil nailed slope

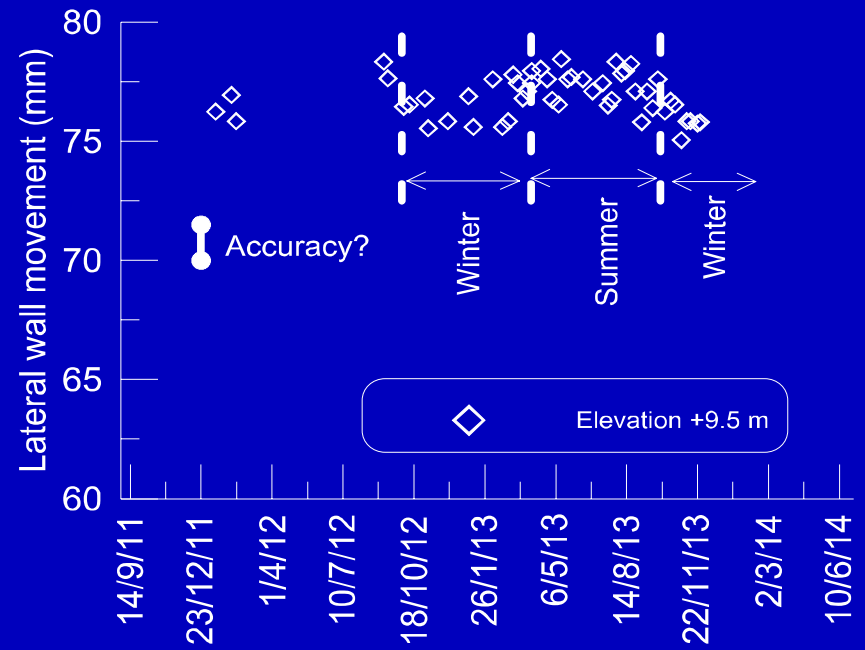
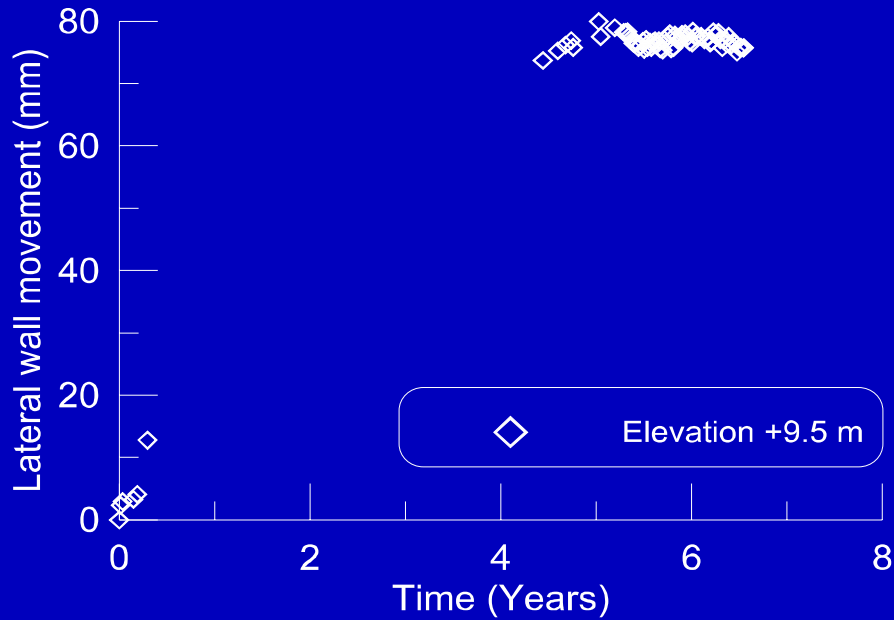


# Westgate – wall movement v depth

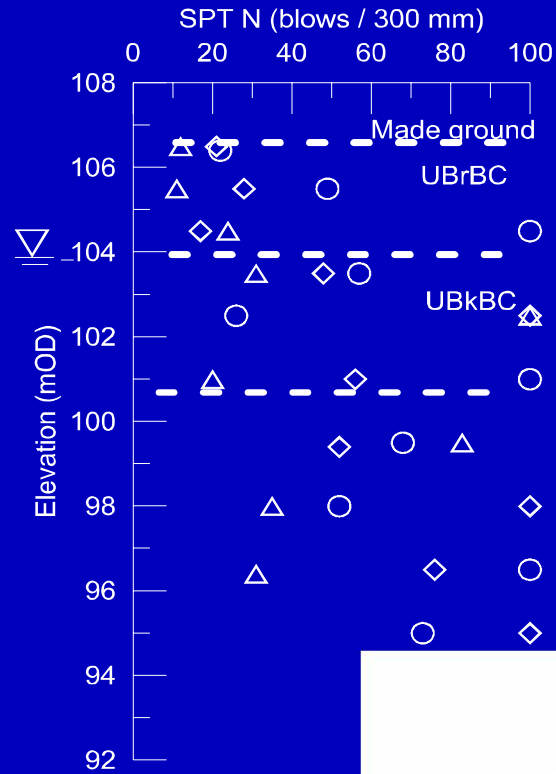
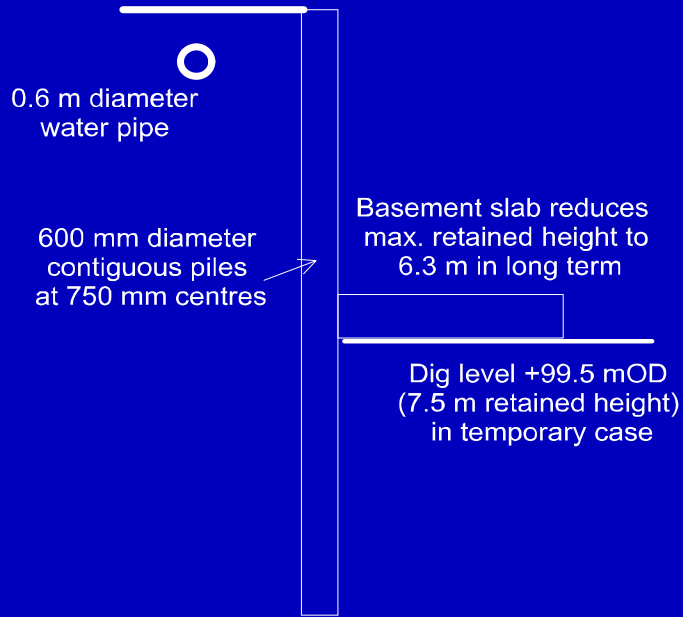


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↓  
Limestone bedrock at -16 mOD

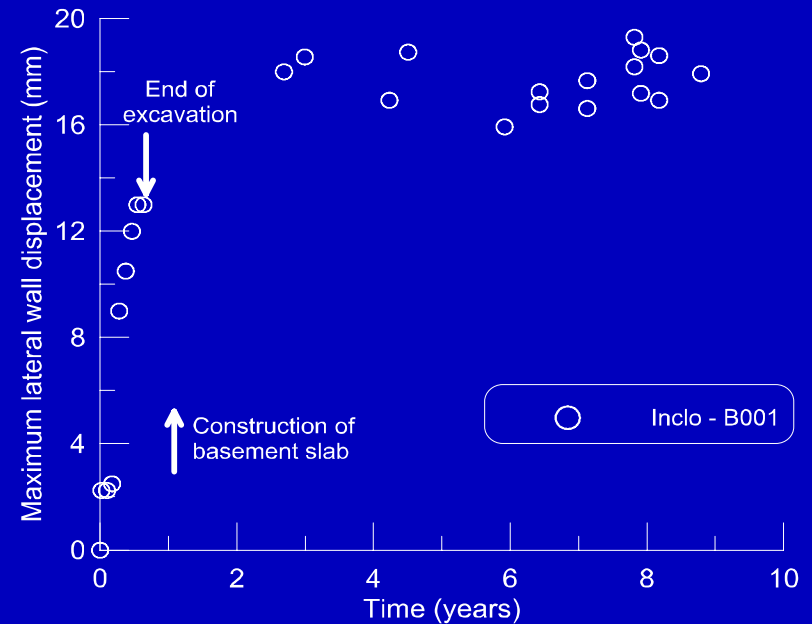
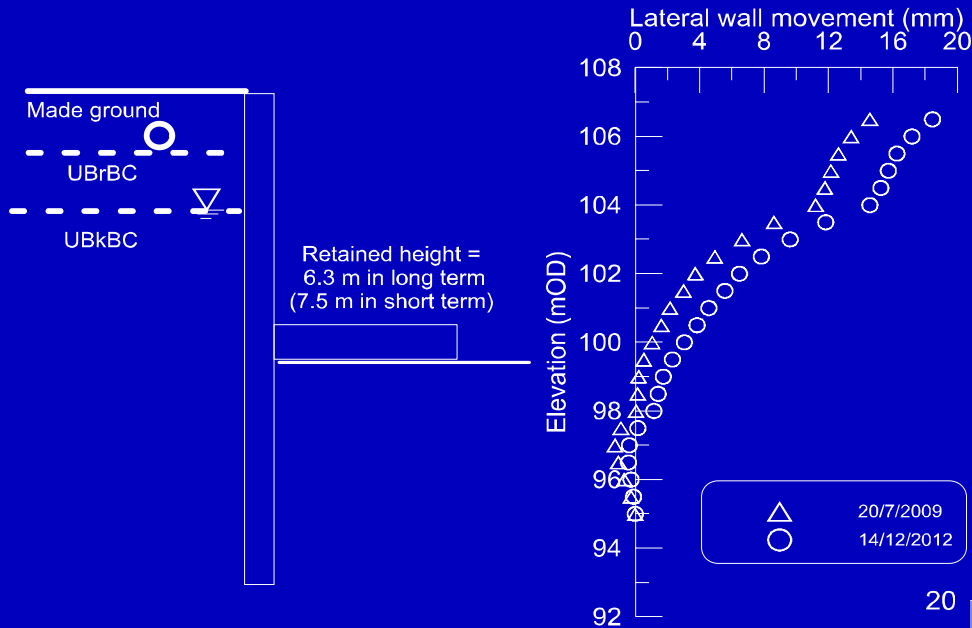
# Wall movement v time



# Ballycullen Rd.



# Ballycullen Rd. - wall movements





# Challenge

Can we model this situation adequately with a "simple model"

(PLAXIS HSM does not work - it cannot capture the rate of dilation)

