



**Project** Test project  
**Project No.** 1004  
**Subject** Outline Rigid Inclusion Settlement Assessment  
**Client** J Coffey

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## 1 Introduction

This piled raft settlement analysis is undertaken using an AI deep learning algorithm implemented by A2-Tech, trained using a vast dataset of case studies based on the A-squared group's project experience over the past decade. A square raft is considered and the ground model is idealised as a single layer with stiffness ( $E'$ ) linearly increasing with depth.

## 2 Input

The key input parameters are shown in Figure 1.

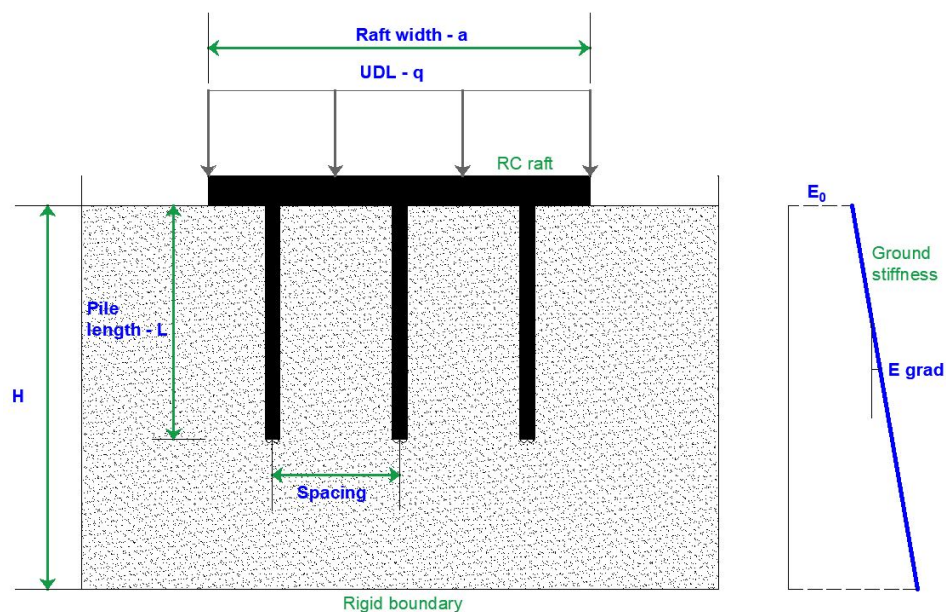


Figure 1: Piled raft scheme indicative sketch - assessment input parameters shown in blue

The selected input values are as follows:

- UDL  $q$ : **50 kPa**
- Rigid boundary depth -  $H$ : **30 m**
- $E'_0$  : **40000 kPa**
- $E'_{\text{grad}}$  : **3000 kPa/m**
- Pile length -  $L$ : **15 m**
- Pile spacing -  $s$ : **3 m**
- Raft width -  $a$ : **40 m**

### 3 Output

The predicted maximum piled raft settlement is **5.7 mm**. Figure 2 presents a settlement profile across the piled raft.

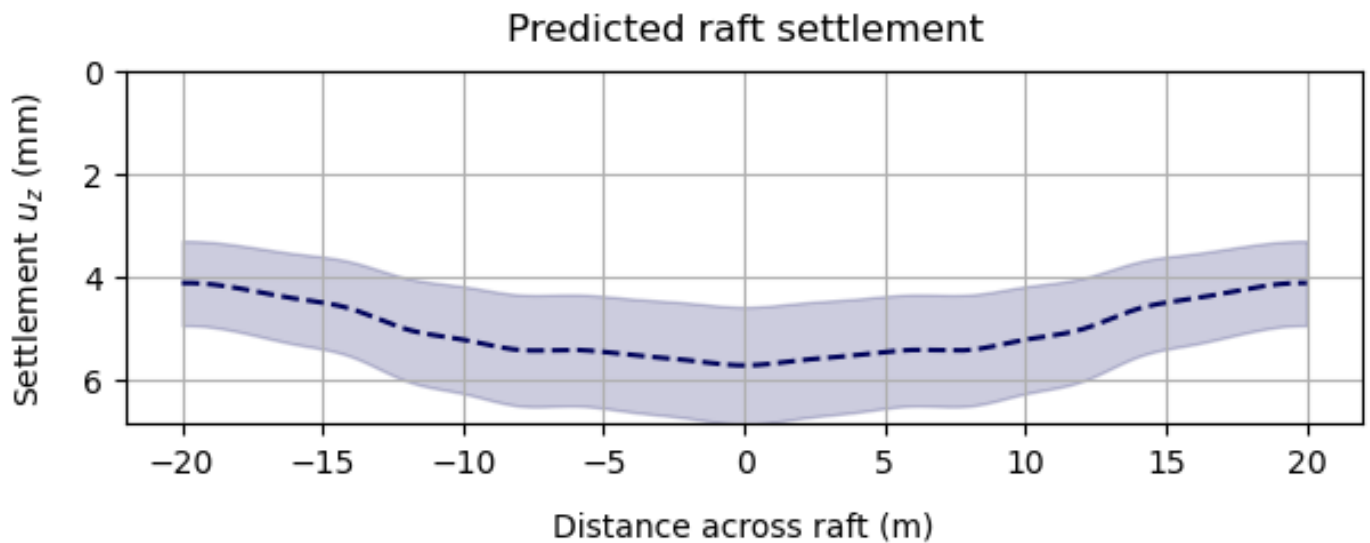


Figure 2: Piled raft settlement profile - the shaded zone indicates the likely range of settlements



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