

CHAPTER 6

CONCLUSION AND SUGGESTION

6.1 Conclusion

Based on the result of this final project, it is found that the economic model of the PVD installation based on the data obtained from previous literature could be formed. The economic model of the PVD, which have lowest cost possible but fulfil consolidation target, have the dimension of length as big as 33 m and spacing as big as 2 m. PVD with the economic model is found to produce degree of consolidation that fulfil the design target of degree of consolidation $\geq 95\%$, which it reached 95.2% of degree of consolidation within time period of half year. As for the cost estimation, it could be determined using the cost appropriation method used by Sun from previous research. The result of the optimization also match what previous literature as displayed, in which the relation between PVD properties with PVD cost and DoC respectively is proven to be following the pattern of previous studies.

Furthermore, based on the sensitivity study that analyse which soil properties affect the PVD installation cost the most, it could be concluded that the coefficient of variation (M_v) and vertical coefficient of permeability (k_v) are two properties that affect PVD cost installation. In this study, it is also found that M_v is the one that will affect PVD installation cost the most, as compared to k_v where the effect is not big after the value is changed. Thus, in PVD installation project, the soil investigation step and soil treatment should focus more on investigating and

treating the soil to improve M_v and k_v , compared to other properties. The other properties of soil that is not affecting the cost the most could be treated with lesser attention, in order to make the cost as low as possible.

6.2 Suggestion

The research should be continued to calculate the actual cost of the project, using available field data tested in laboratory, to make the accuracy of the program better. Furthermore, the additional test could also include the variation of soil properties used in real project, as in current study all soil properties used is considered as constant. While this condition is assumed for the simplicity of the project, in reality the soil properties will change based on the time spent, which make additional laboratory test for soil properties and more complex modelling are required to form the complete economic model.

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