



An Overview

# SOIL STABILIZATION

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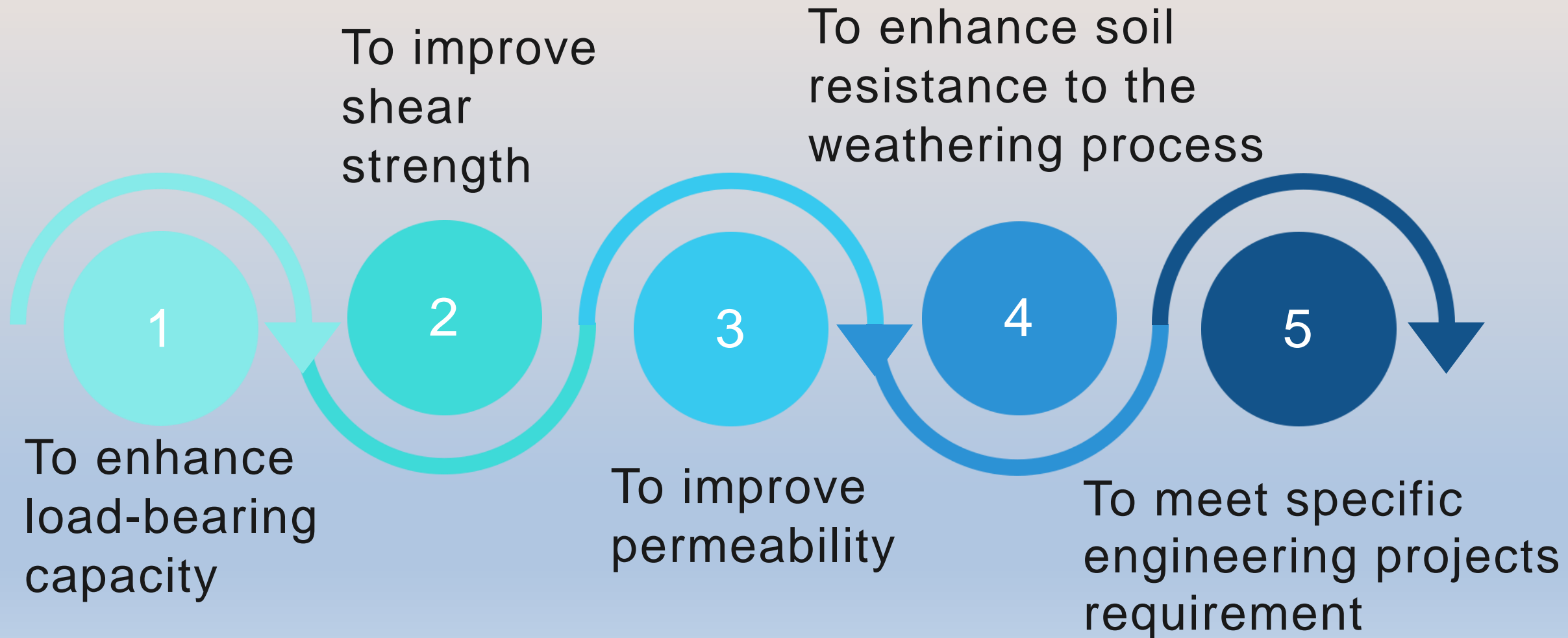
MAKMAL PENYELIDIKAN  
GEOTEKNIK (MPG)

# Soil Stabilization

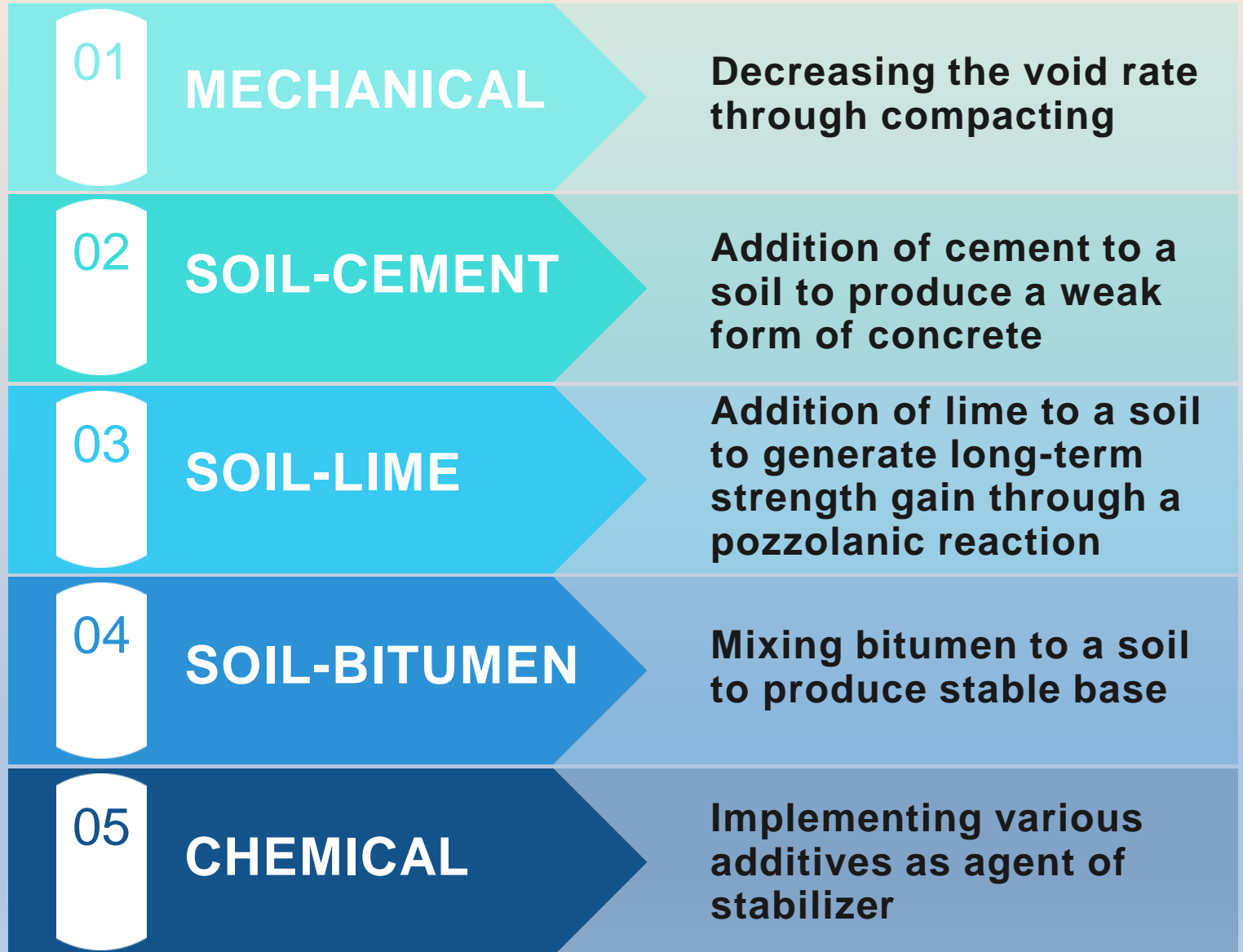
A process of mixing other substances/materials with original soft ground/ expansive soil in attempt to improve the geotechnical properties for particular construction.



# Soil Stabilization Purposes

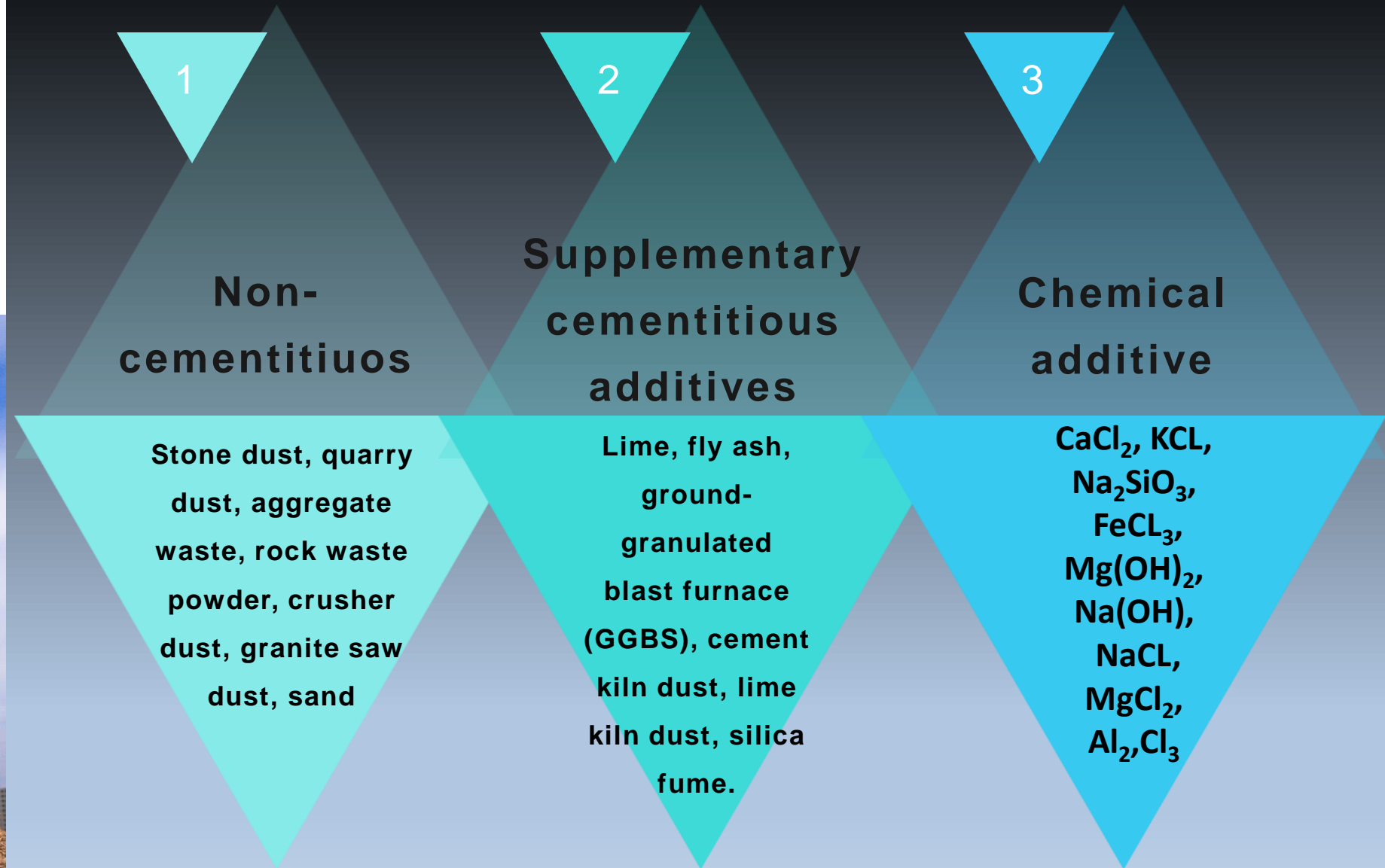


# Soil Stabilization Methods





# Categories of Soil Stabilizer



Source: Reddy & Tahasildar, 2015



Silica fume

Industrial  
waste



Fly ash



Incinerator  
waste

# Soil Stabilizer from Solid Waste



Cement dust

Mineral  
waste



Quarry dust



Marble dust

Agricultural  
waste



Rice Husk Ash



# Significance of using solid wastes



**26 juta tan** sisa pepejal terkawal yang dijana setiap tahun

Sumber: Pelan Tindakan Komprehensif Pengurusan Sisa Pepejal 2015 – 2020 (Cetakan tahun 2014)

## Operationalising the Twelfth Malaysia Plan, 2021-2025

12MP

### Environmental Sustainability

#### Conservation and preservation

- Climate change mitigation and adaptation
- Disaster risk management
- Disaster risk insurance scheme



- Green technology
- Management of green and blue economy
- Biodiversity conservation
- Sustainable forest management
- Sustainable Consumption & Production
- Energy efficiency
- Renewable energy
- Integrated water resource management
- Marine litter
- Waste as commodity
- Circular economy – reducing waste and creating value from waste
- Valuing ecosystem services
- Carbon Tax

# Conclusion

1. Soil Stabilization can improve the performance of existing soil.
2. Soil stabilization provides a solution to soft ground/expansive soil.
3. The most commonly soil-cement, soil-lime and soil-bitumen stabilization have been used in JKR's Project. By soil stabilization, the cost of the project also can be reduced.



# Conclusion

4. Currently, CREaTE is doing research on the effectiveness of Nano Polymer as soil stabilizer

5. Solid waste as soil stabilizer :



Alternative method.



Reduce the quantity of solid waste in Malaysia



Eco-friendly and Sustainable