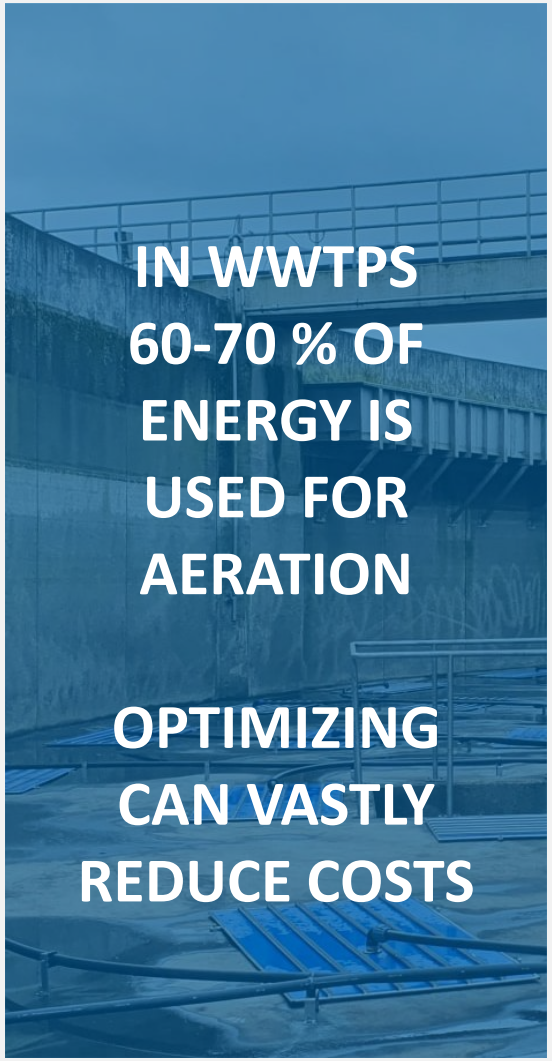
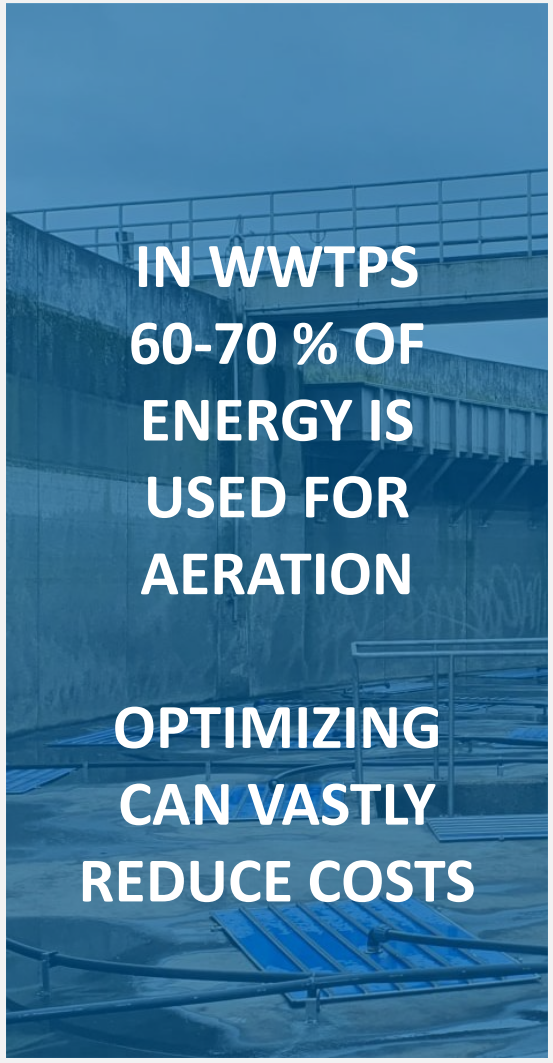
AERATION IN WWTP’S

bosman
WATERMANAGEMENT

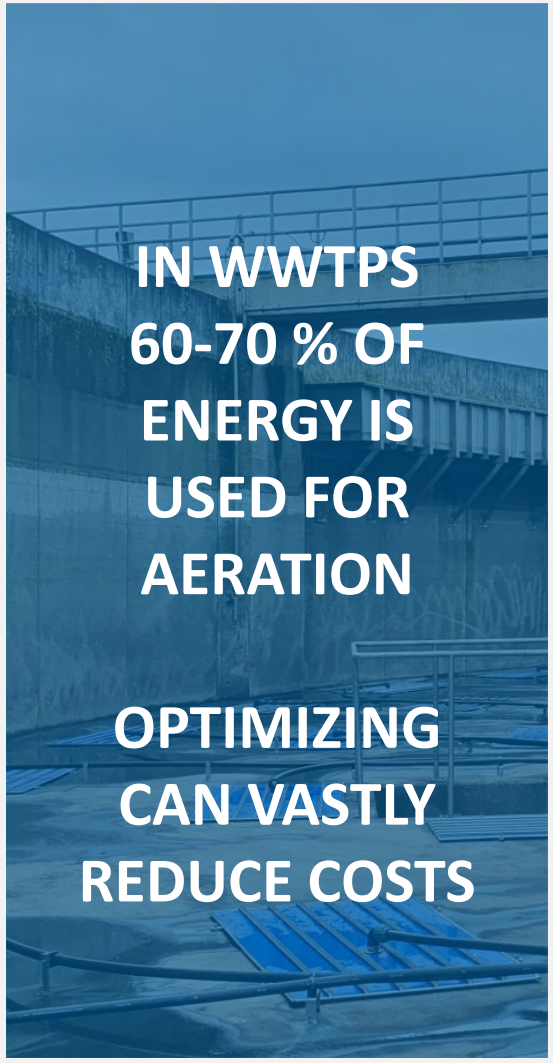
2020 | 2025 | 2030 | 2035 | 2037



2020 | 2025 | 2030 | 2035 | 2037



2020 | 2025 | 2030 | 2035 | 2037



2020 | 2025 | 2030 | 2035 | 2037

AGENDA

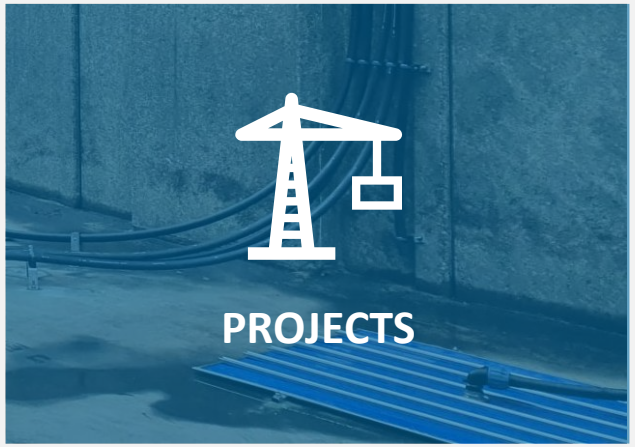
WASTE WATER
INDUSTRY

BOSMAN
WATERMANAGEMENT

AERATION PLATES

EFFICIENCY

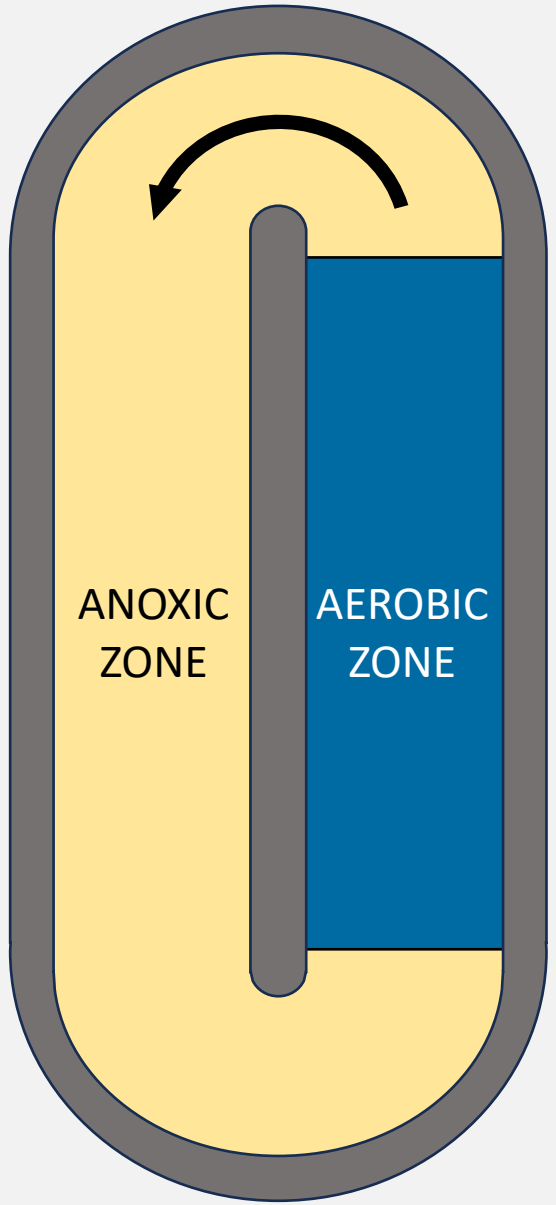
RETURN ON INVESTMENT


PROJECTS

WASTE WATER INDUSTRY

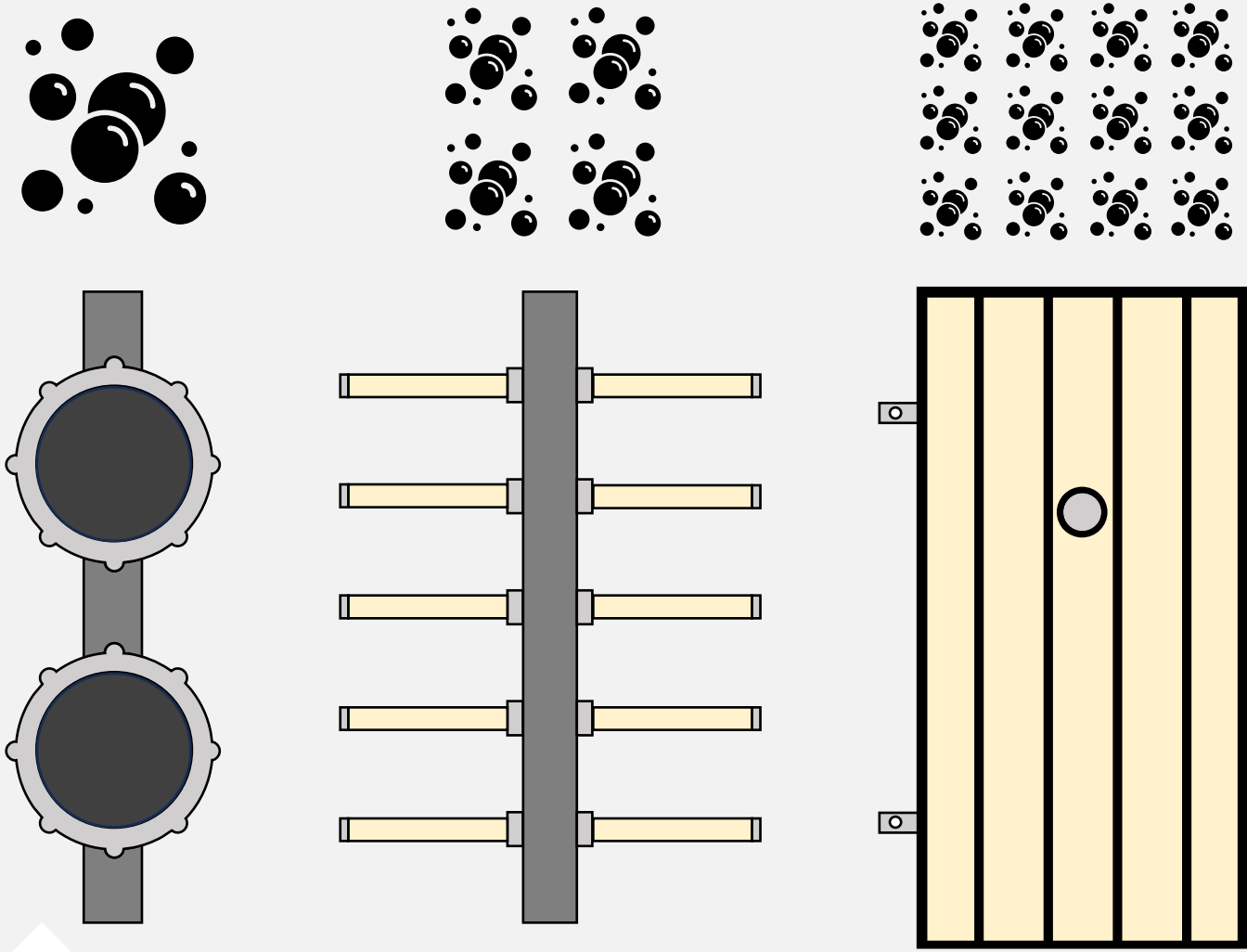
WHY AERATE?

- AEROBIC REMOVAL OF COD AND N BY BACTERIA
- TO KEEP ACTIVATED SLUDGE IN SUSPENSION
- TO PREVENT ANAEROBIC CONDITIONS



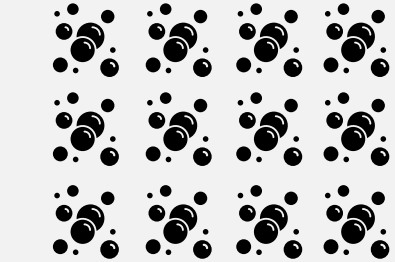
WASTE WATER INDUSTRY

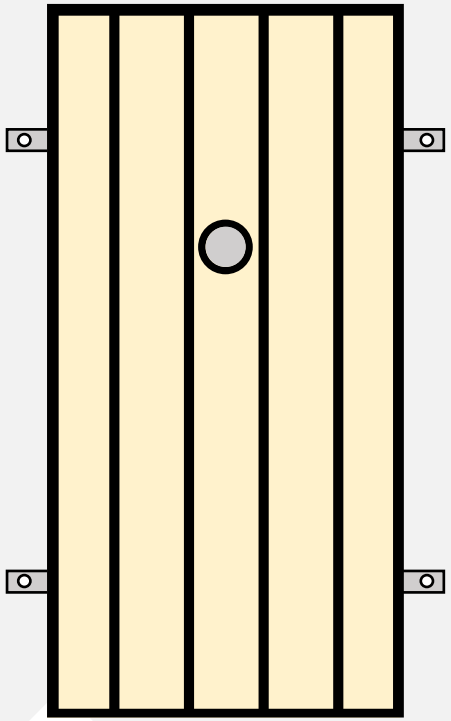
AERATION PRODUCTS



WASTE WATER INDUSTRY

AERATION PRODUCTS





- 25-30% MORE EFFICIENCY
- 20-30% MORE OXYGEN INPUT PER m^2
- LOW LOSSES DUE TO FLOOR ASSEMBLY
- LONG LIFESPAN UP TO 20 YEARS

THE HISTORY OF
BOSMAN WATERMANAGEMENT

1920

1929

1930

FAMILY OWNED
COMPANY SINCE

THE HISTORY OF
BOSMAN WATERMANAGEMENT

1960

1960

60+ YEARS OF EXPERIENCE IN
WASTE WATER MANAGEMENT

THE HISTORY OF
BOSMAN WATERMANAGEMENT

1960

1992

30+ YEARS OF EXPERIENCE
IN AERATION

THE HISTORY OF
BOSMAN WATERMANAGEMENT

2020

2024

2030

OVER 150 WWTP’S

OVER 30,000 PANELS INSTALLED

BOSMAN
WATERMANAGEMENT

COMPLETE PACKAGE FOR AERATION

ENGINEERING

- BLOWER DIMENSIONING AND CALCULATIONS
- PIPING DIMENSIONING AND CALCULATIONS
- MIXERS/FLOW BOOSTERS
- SOTR CALCULATIONS

PROJECT MANAGEMENT

INSTALLATION

- WITH ASSISTENCE OF LOCAL CONTRACTORS

ECOLOGICAL FEATURES OF OUR PANELS

- DURABLE MATERIALS
  (STAINLESS STEEL 316)
- MORE THAN 94% REUSABLE
  AFTER THE LIFESPAN
- LIFESPAN OF 10+ YEARS
  UP TO 20 YEARS
- MANUFACTURING PROCESS
  CERTIFIED AS CARBON NEUTRAL
- NO PLASTICIZERS AND
  NO MICROPLASTICS

TECHNICAL FEATURES OF OUR PANELS

HIGH OXYGEN INPUT
UP TO 6,7 kg O_2/kWh

QUICK RETURN ON INVESTMENT

STANDARD 5 YEARS WARRANTY

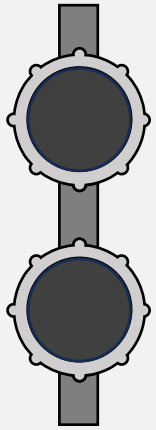
EFFICIENCY

WHAT DEFINES EFFICIENCY?

- PERFORATED SURFACE AREA
- WATER DEPTH
- BUBBLE SIZES
- FLOOR COVERAGE

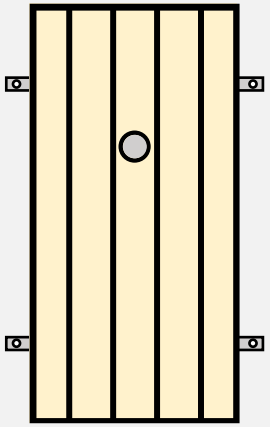
EFFICIENCY

COMPARISON DISCS AND PANELS



SURFACE OF 0,07m²

PERFORATED SURFACE 0,06m²



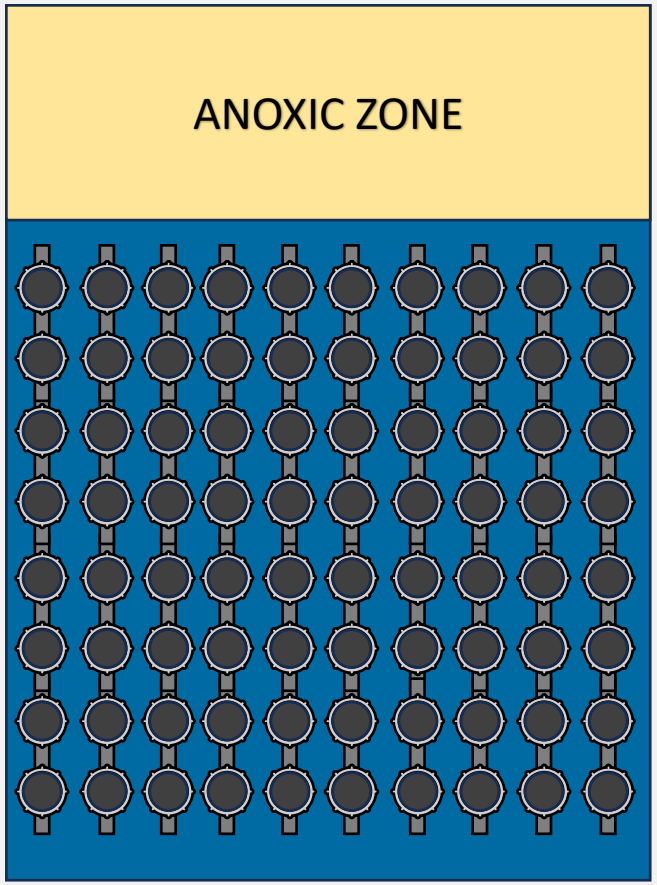
SURFACE OF 2m²

PERFORATED SURFACE 1,4m²

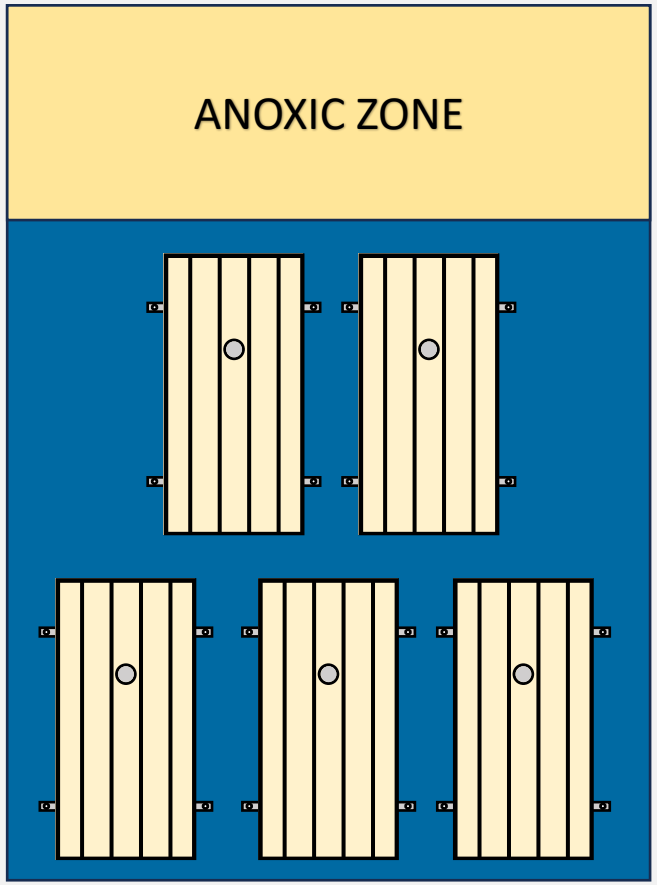
EFFICIENCY

SAME SURFACE AREA

90 DISCS



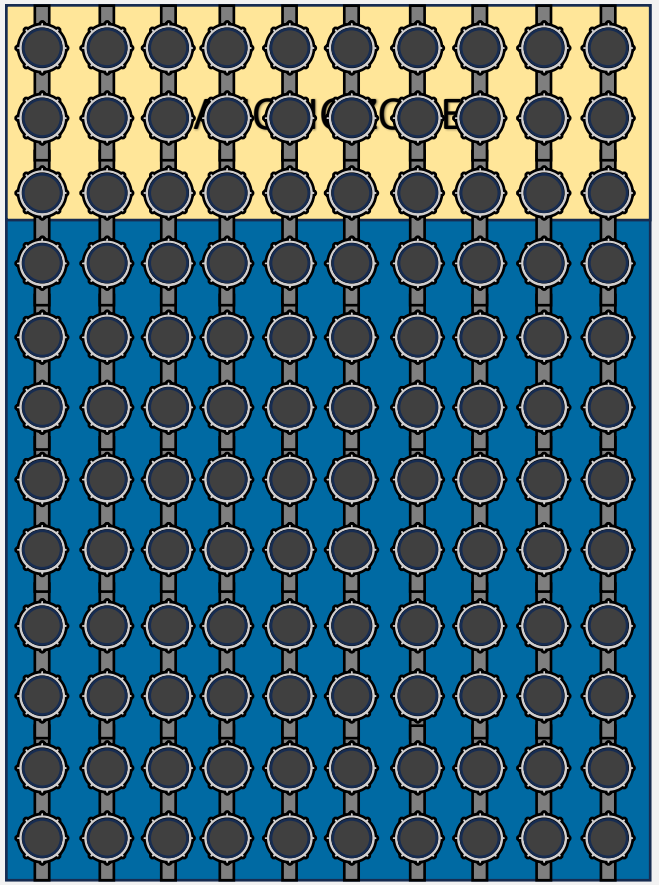
5 AERATION PLATES



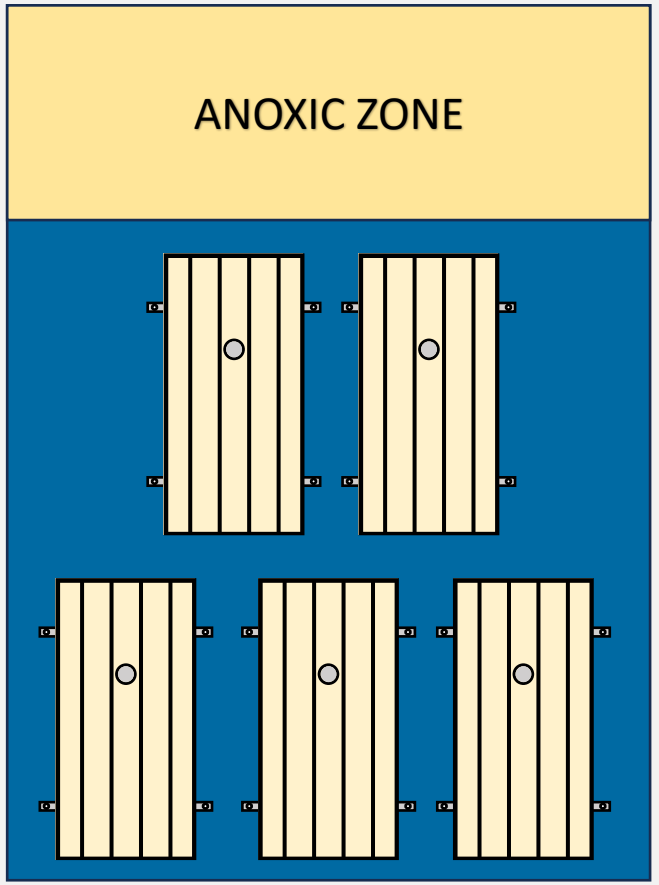
EFFICIENCY

SAME PERFORATED SURFACE AREA

120 DISCS



5 AERATION PLATES



RETURN ON INVESTMENT

DISCS

- INVESTMENT COST MATERIAL:
  THB 1.800.000,-
- INVESTMENT COST INSTALLATION:
  THB 800.000,-
- TOTAL INVESTMENT:
  THB 2.600.000,-

PRICE DIFFERENCE:
THB 1.200.000,-

PANELS

- INVESTMENT COST MATERIAL:
  THB 3.000.000,-
- INVESTMENT COST INSTALLATION:
  THB 800.000,-
- TOTAL INVESTMENT:
  THB 3.800.000,-

PRICE DIFFERENCE:
THB 1.200.000,-

RETURN ON INVESTMENT

STATED:
OXYGEN REQUIREMENT BASIN 300 kg O_2/h
PRICE PER kWh THB 4,18

PRICE DIFFERENCE:
THB 1.200.000,-

DISCS

- LIFE EXPECTANCY
  5 YEARS
- OXYGEN INPUT
  4 kg O_2/h
- kWh PER BASIN:
  75 kWh
- COST PER REQUIREMENT
  THB 313,50

PRICE DIFFERENCE PER HOUR:
THB 85,50

PANELS

- LIFE EXPECTANCY
  10-20 YEARS
- OXYGEN INPUT
  5,5 kg O_2/h
- kWh PER BASIN:
  54,55 kWh
- COST PER REQUIREMENT
  THB 228,-

PRICE DIFFERENCE PER HOUR:
THB 85,50

RETURN ON INVESTMENT

STATED:
OXYGEN REQUIREMENT 300 kg O_2/h
PRICE PER kWh THB 4,18

PRICE DIFFERENCE:
THB 1.200.000,-
PRICE DIFFERENCE PER HOUR:
THB 85,50

PANELS

- RETURN OF INVESTMENT ENERGY
  TBH 1.200.000,- / THB 85,50 = 14.000 HOURS
- RETURN OF INVESTMENTS YEARS:
  14.000h / 8765h = 1,6 YEARS
- MONEY EARNED EXTRA AFTER 5 YEARS
  THB 3.747.037,-
- MONEY EARNED EXTRA AFTER 10 YEARS
  THB 7.494.075,-

RETURN ON INVESTMENT

PANELS

- RETURN OF INVESTMENTS YEARS:
  14.000h / 8765h = 1,6 YEARS
- MONEY EARNED EXTRA AFTER 5 YEARS
  THB 3.747.037,-
- MONEY EARNED EXTRA AFTER 10 YEARS
  THB 7.494.075,-

INCLUDING LIFE EXPECTANCY

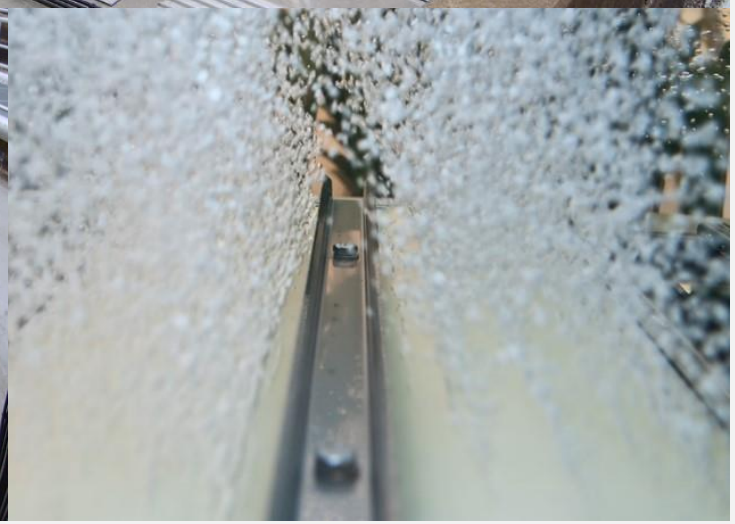
- MONEY EARNED EXTRA AFTER 5 YEARS
  THB 3.747.037,- + THB 2.600.000 = THB 6.347.037
- MONEY EARNED EXTRA AFTER 10 YEARS
  THB 7.494.075,- + THB 5.200.000,- = THB 12.694.075

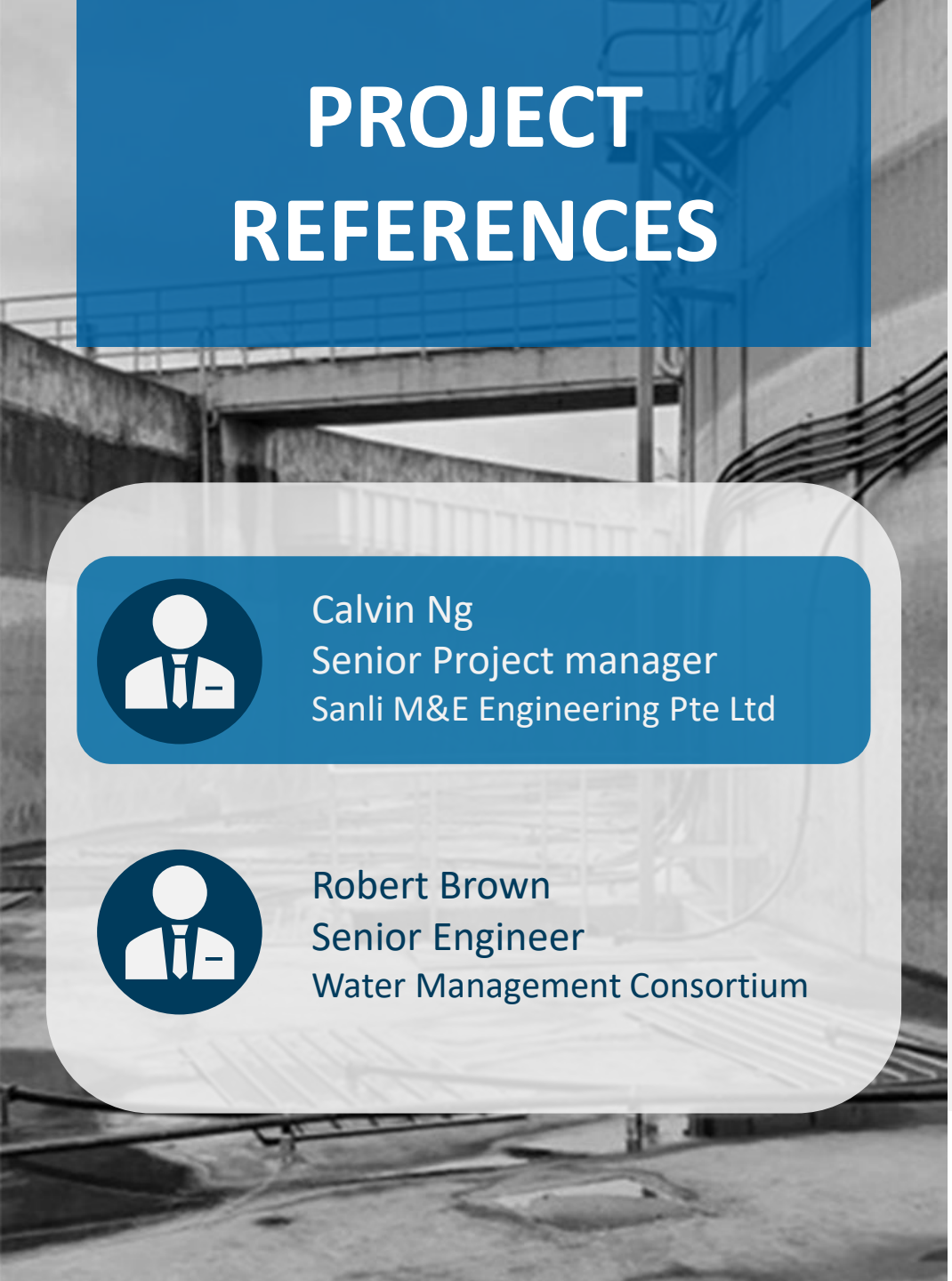
WWTP VIBY DENMARK

WWTP ZWIJNDRECHT NETHERLANDS

WWTP VIBY
DENMARK

WWTP ZWIJNDRECHT NETHERLANDS





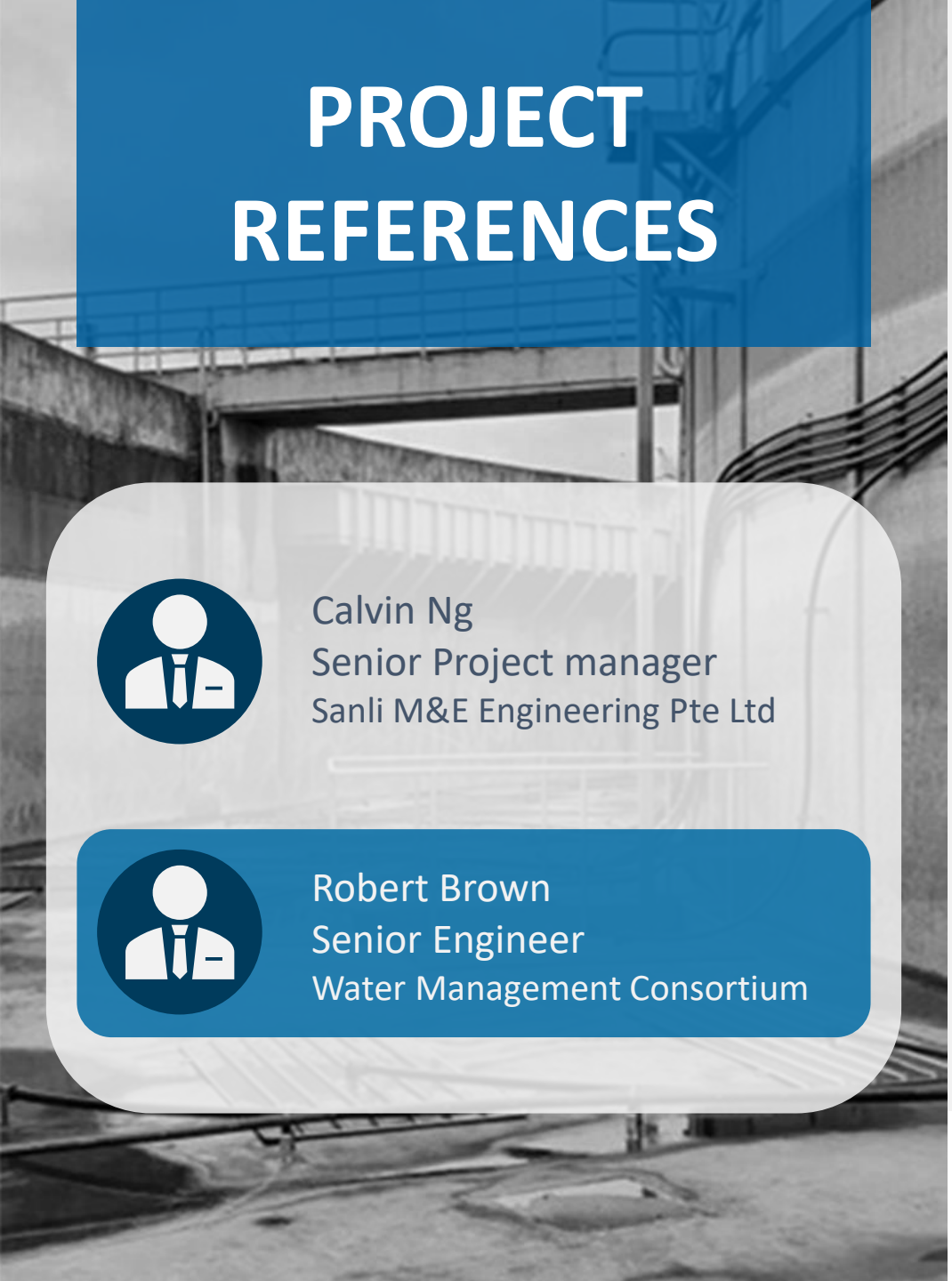
PROJECT REFERENCES

Calvin Ng
Senior Project manager
Sanli M&E Engineering Pte Ltd

Robert Brown
Senior Engineer
Water Management Consortium

HOW IS WORKING WITH BOSMAN?

"Our first collaboration with Bosman Watermanagement, through KSB Asia Pacific, has been a constructive and fruitful one to date. We are glad to be supported by an experienced and knowledgeable team from Bosman Watermanagement."



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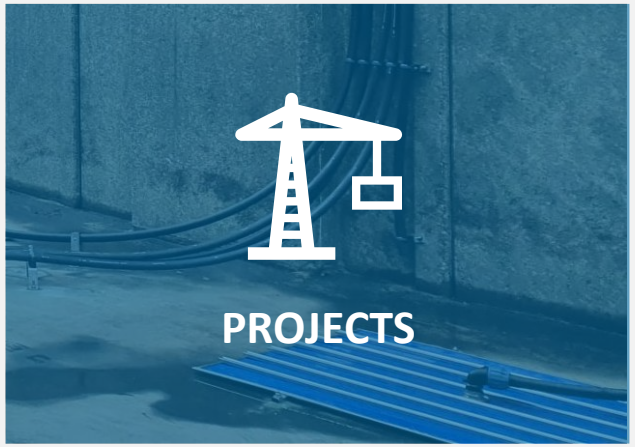
Water Management Consortium

HOW IS WORKING WITH BOSMAN?

"It is very rewarding to have a working relationship that we can trust for a project to be delivered without argument. I and the team very much appreciate the professionalism that Bosman Water Management bring to our schemes."

LOOKING BACK



THANKS FOR LISTENING!

bosman
WATERMANAGEMENT