



San Francisco 2022

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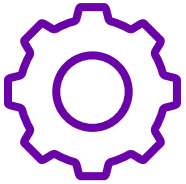
# The Power of Parametric Design

## Veolia Water Technologies

Hakim Bouhali  
Goh Thiam Seng

AVEVA

## Veolia Industrial SMART Tools & Parametric Design



### Challenges

- Design Water Treatment System in 48h @2 days
- Access to the engineer information's in real time anywhere in the World
- Give all engineering documents for tender in 24h
- Give all engineering documents for Project in 24D



### Solution

- Aveva Connect
- Aveva E3D Design
- Aveva Diagrams Intelligent P&ID
- Aveva Instrumentation
- Aveva Electrical



### Benefits

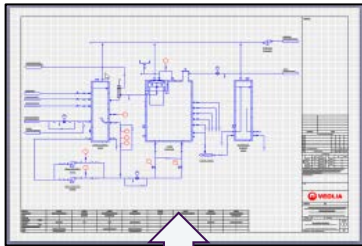
- Increase Quality
- Speed Up Processes
- Increase Design Accuracy
- Increased Production
- Operational Efficiency
- Reduced Costs

# Veolia Industrial SMART Tools & Parametric Design

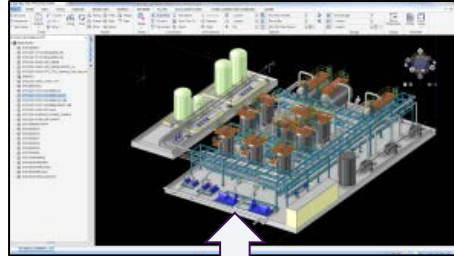
## Overview - Smart Tools One Database



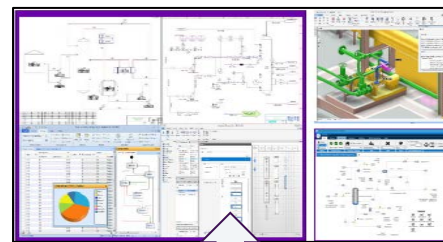
**DIAGRAM**  
Intelligent P&ID



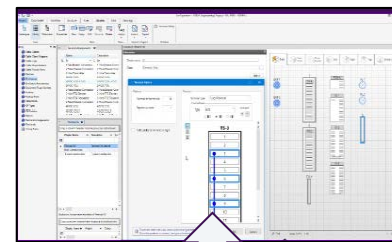
**E3D Design**



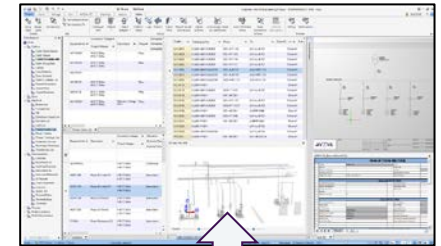
**Tag Engineering**



**Instrumentation**



**Electrical**



KL Singapore Jakarta  
Sydney Beijing Shanghai

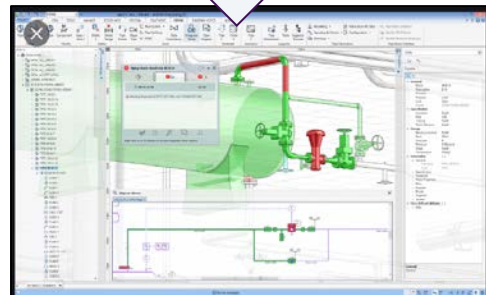


**AVEVA**



**Dabacon**

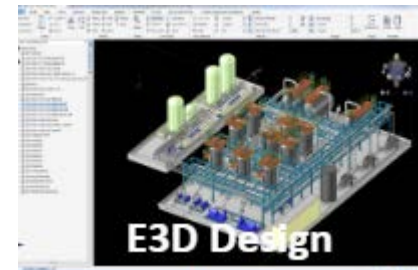
Access all information  
in real time everywhere  
in the World



**Integrator**

Parametric modeling is an approach to 3D CAD in which you capture design intent using **features and constraints**, and this allows users to automate repetitive changes, such as those found in families of product parts.

Item	Value
1	1000
2	2000
3	3000
4	4000
5	5000
6	6000
7	7000
8	8000
9	9000
10	10000

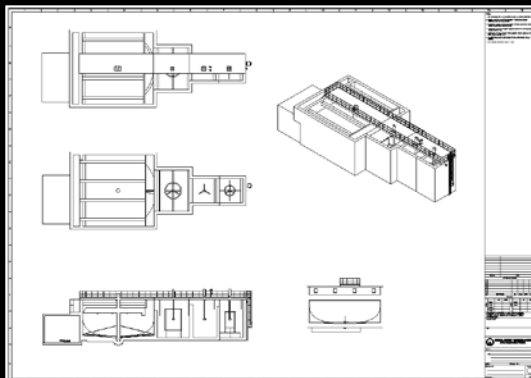


Used by VWT

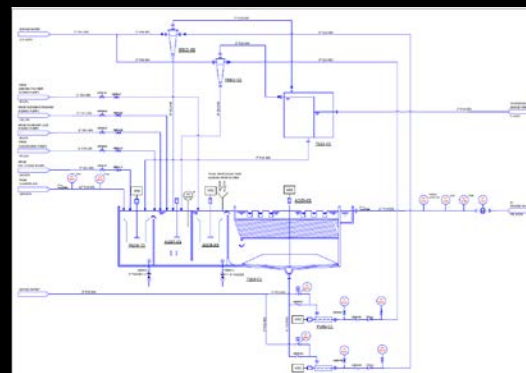
**AVEVA**

## Overview - Smart Tools One Database

### CIVIL GUIDE DRAWINGS



### SMART P&ID



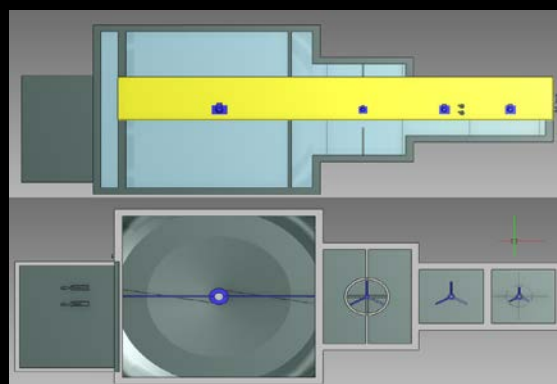
### EQUIPMENT LIST

P & ID	TAG	DESCRIPTION
/Q-SD-CAD-P3-006rA0.	TS08-01	ActifloCarb
/Q-SD-CAD-P3-006rA0.	AG06-01	Mixer for PAC Contact Tank
/Q-SD-CAD-P3-006rA0.	AG07-01	Mixer for Coagulation Tank
/Q-SD-CAD-P3-006rA0.	AG08-01	Mixer for Flocculation Tank
/Q-SD-CAD-P3-006rA0.	AG09-01	Scraper for Sedimentation Tank
/Q-SD-CAD-P3-006rA0.	PV06-01	Actiflocarb Recirculation Pump A
/Q-SD-CAD-P3-006rA0.	PV06-02	Actiflocarb Recirculation Pump B
/Q-SD-CAD-P3-006rA0.	TS12-01	Splitbox
/Q-SD-CAD-P3-006rA0.	RN01-01	Hydrocyclone A
/Q-SD-CAD-P3-006rA0.	RN01-02	Hydrocyclone B
/Q-SD-CAD-P3-006rA0.	JL01-01	Launders for Actiflocarb
/Q-SD-CAD-P3-006rA0.	MP01-01	Lamellas for Actiflocarb

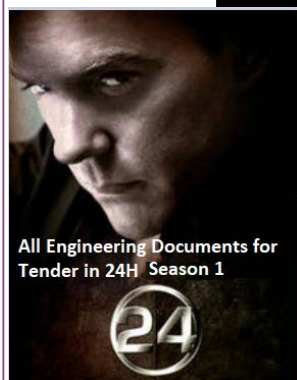
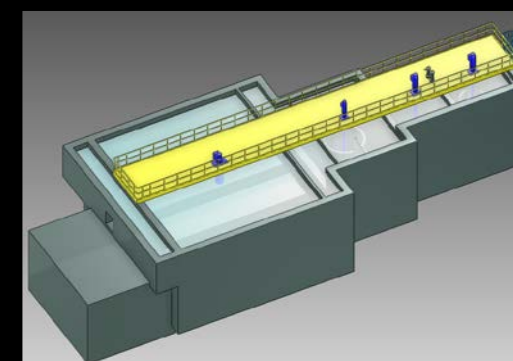
### CIVIL BOQ

	A	B
1	Name	Civil Vol(mm3)
2	Contact Tank	52850000000
3	Coagulant Tank	52850000000
4	Flocculation Tank	72000000000
5	Sedimentation Tank	222100000000
6	Pump Room	70895370000

### CONCEPT DESIGN



### 3D VIEW







Veolia Industrial Smart Project

Smart Design Parametric Design 24h  $\Rightarrow$  24 Days

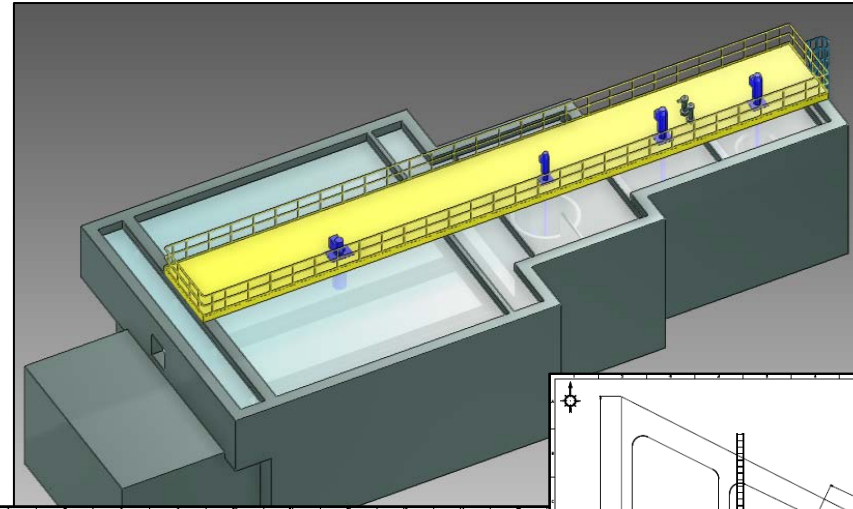


# Veolia Industrial SMART Tools & Parametric Design

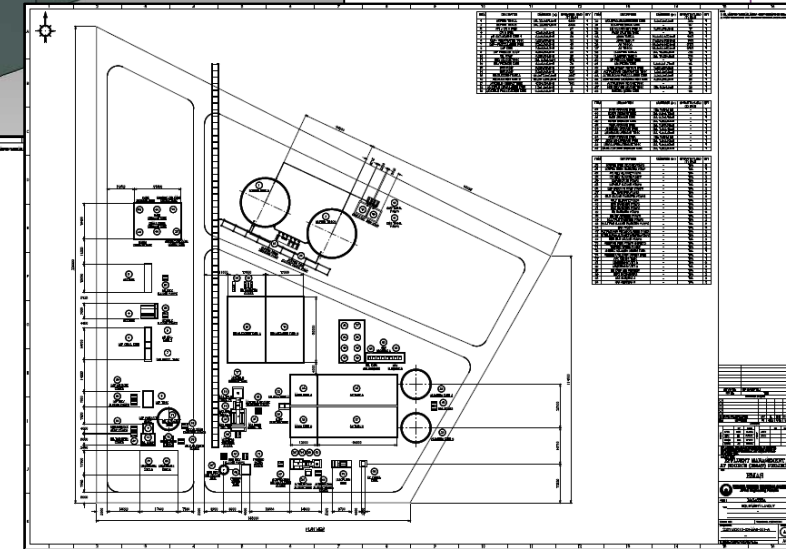
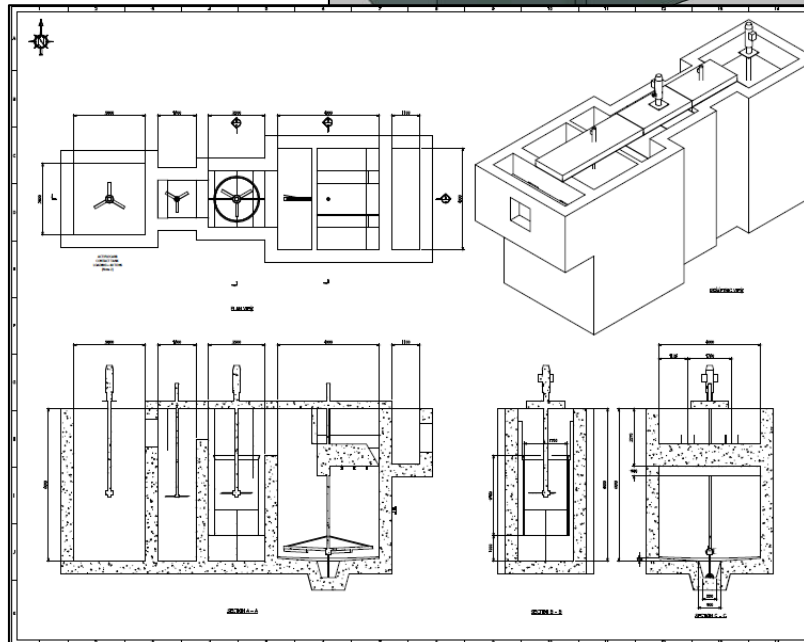
## E3D Design



- Creates and design Multi-discipline 3D Piping, Equipment, Structure, Civil, Electrical, HVAC, etc.
- Clash-free, consistent design
- No limit to project size or details
- Compare and update between Diagrams Intelligent P&ID, Engineering.



[Multiflo Parametric \(Link to Video\)](#)



AVEVA





## E3D Design Saving



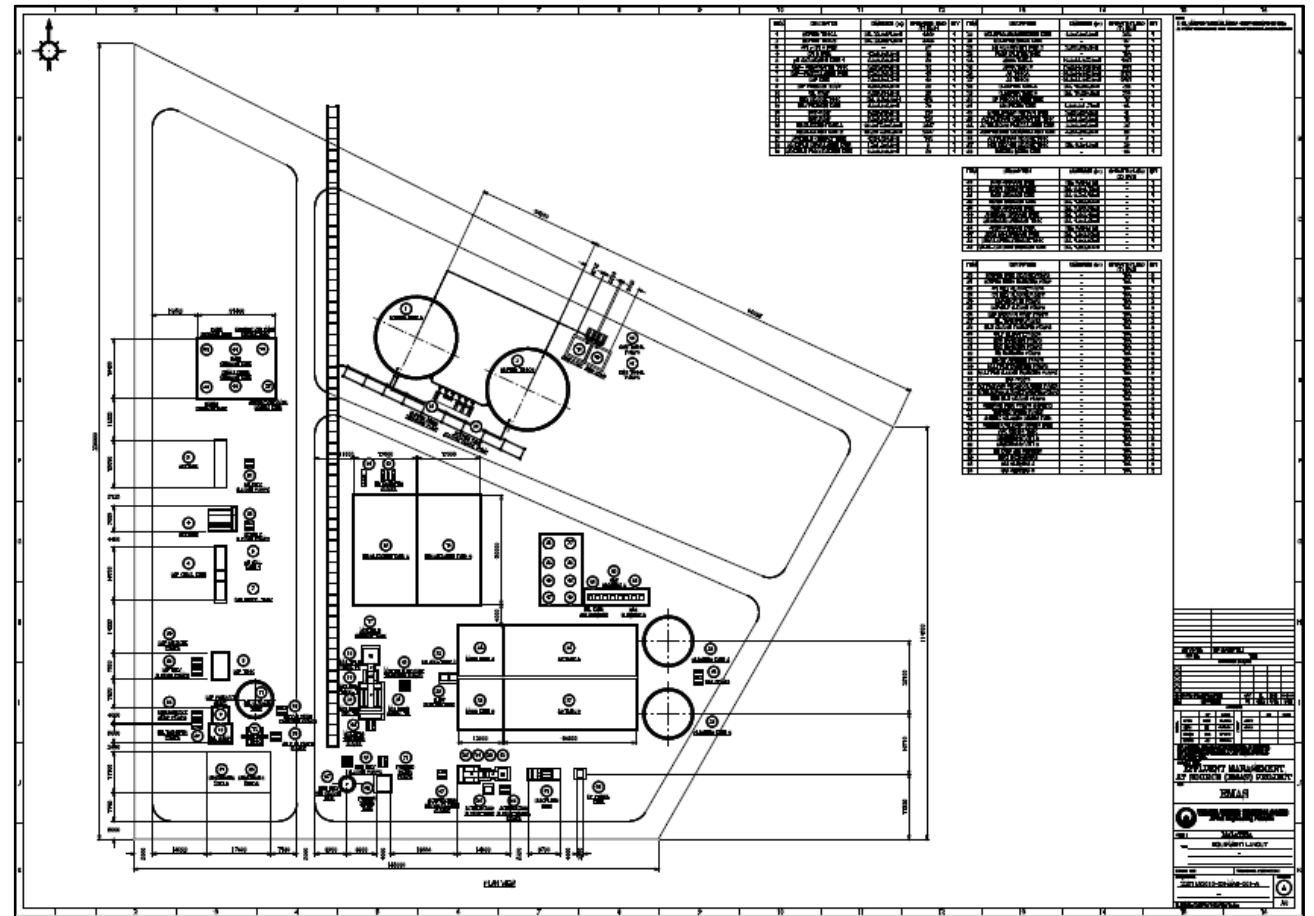
Automatically generates documents for Tenders and Projects

- 2D drawings
- Layouts
- GA
- Civil drawings
- Etc.



### Design Time

- **Conventional 3D Design : 80h**
- **3D Parametric Design : 2h**



## E3D Design UASB Parametric

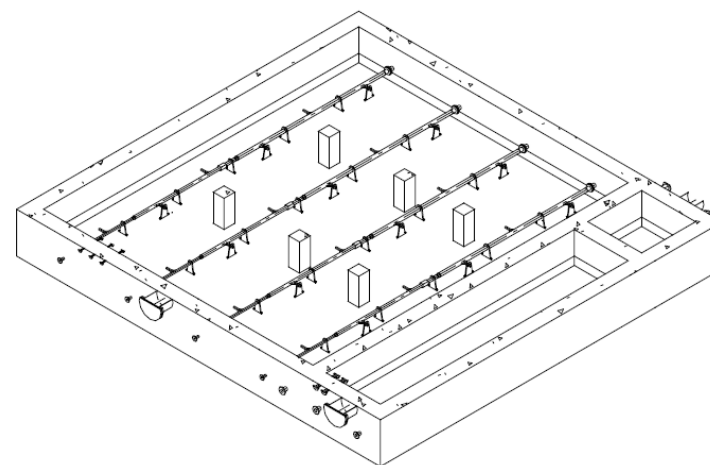
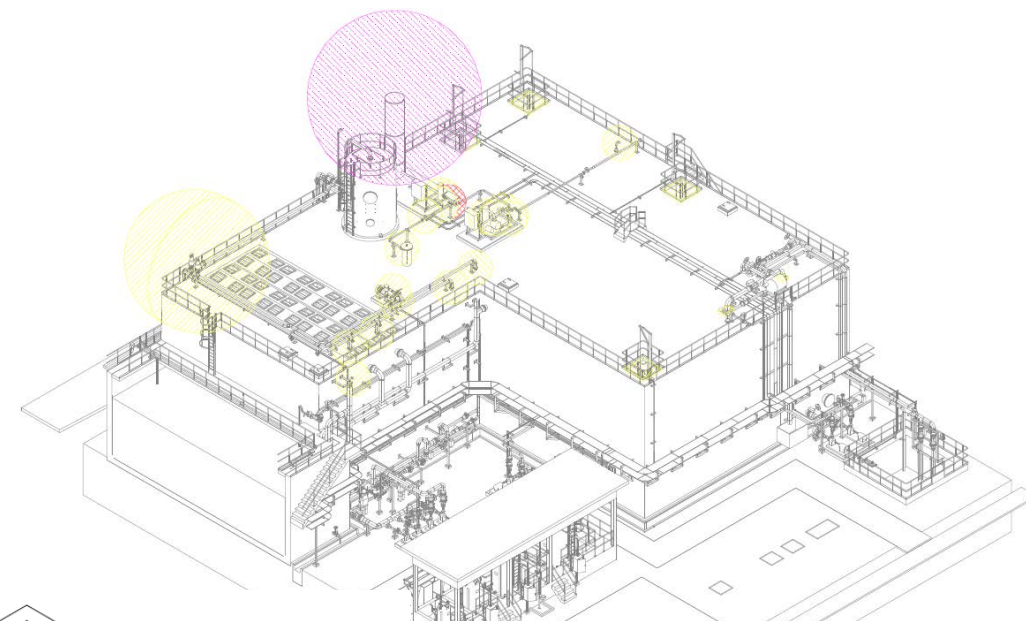
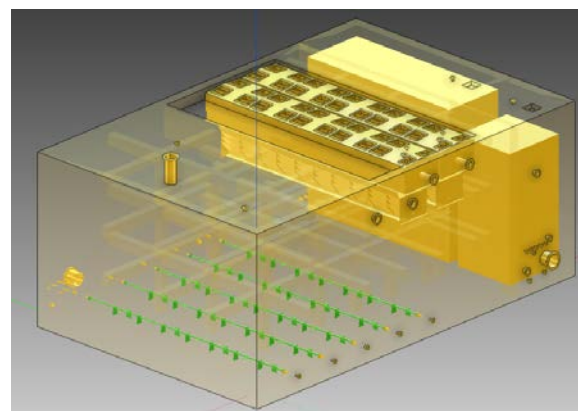


### Design Time



- **Conventional 3D Design : 120h**
- **3D Parametric Design : 4h**

[UASB Parametric \(Link to Video\)](#)



[illegible]



## E3D Design MBBR Parametric

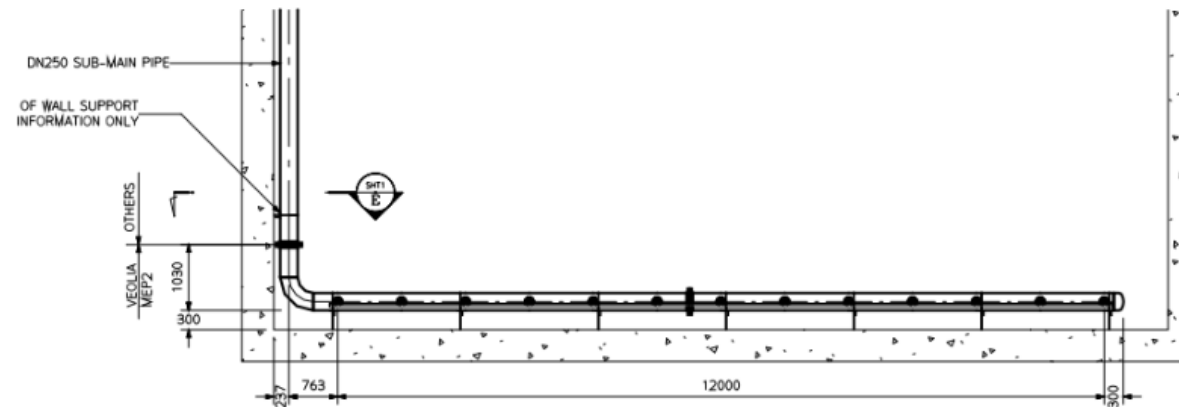
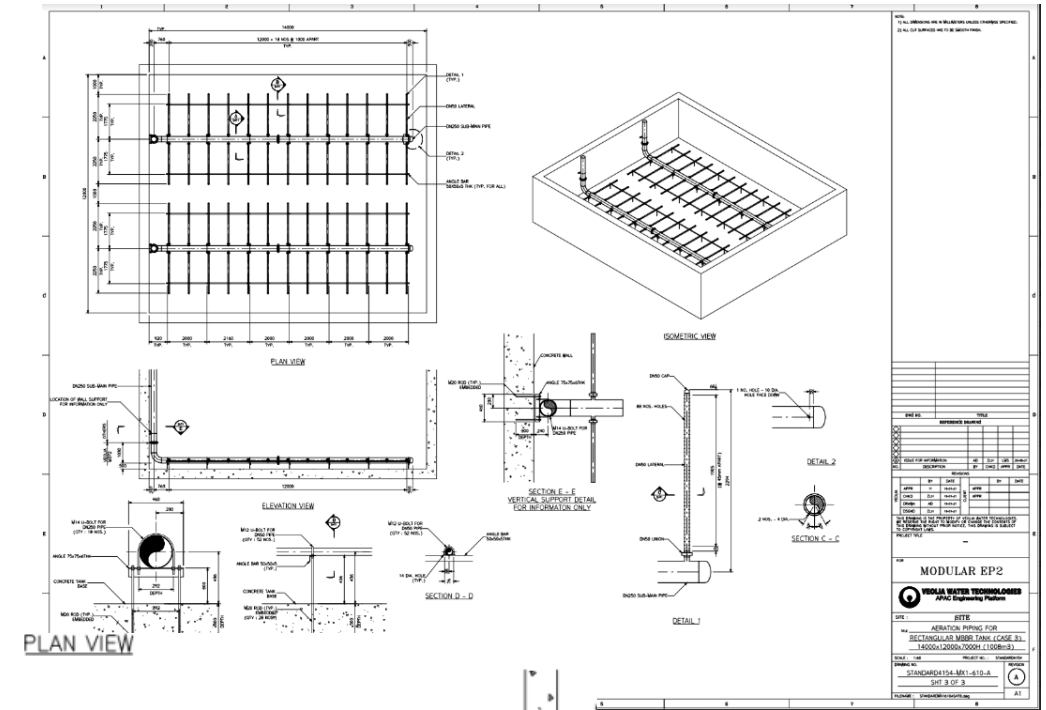
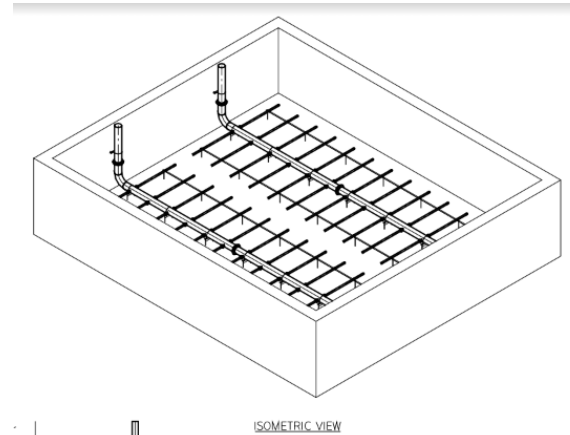


[MBBR \(Link to Video\)](#)



### Design Time

- Conventional 3D Design : 40h
- 3D Parametric Design : 1h







## E3D Design TGV Parametric

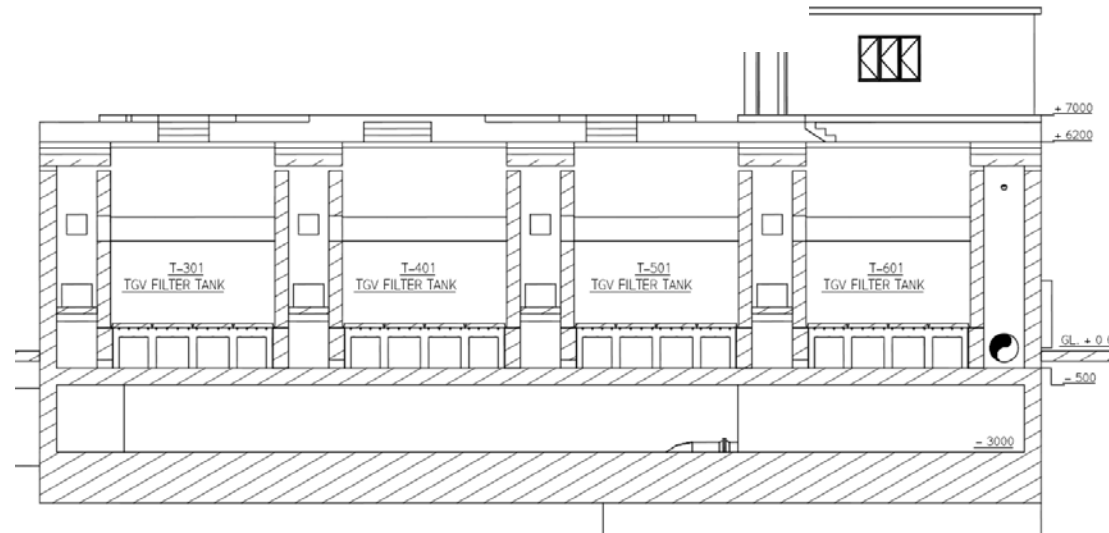
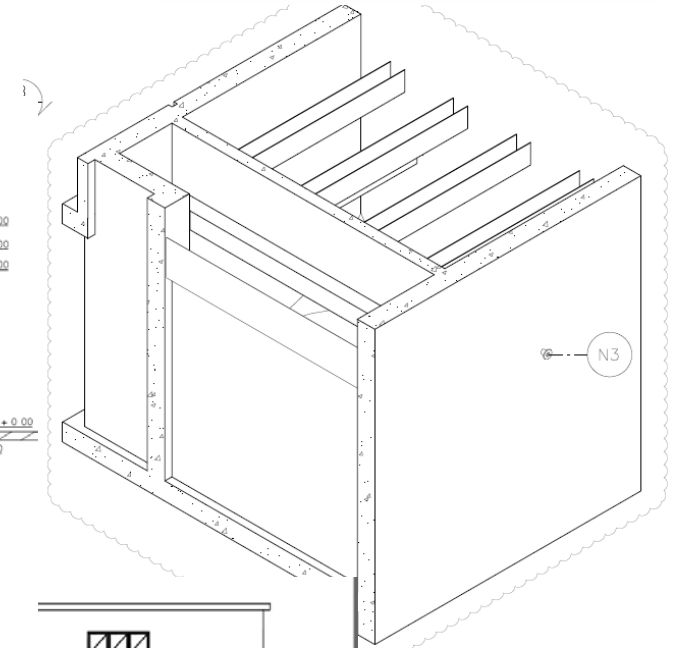
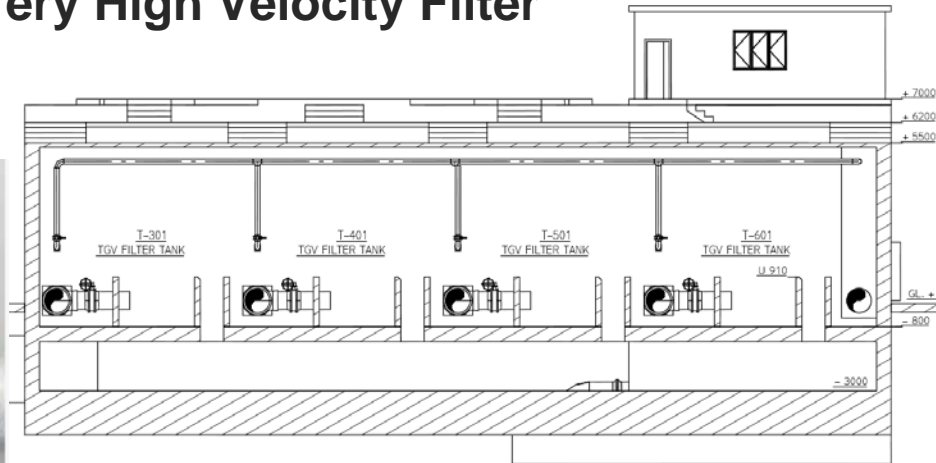
### TGV Parametric

### Very High Velocity Filter



#### Design Time

- **Conventional 3D Design : 80h**
- **3D Parametric Design : 2h**







May the Smart Tools  
and Parametric Design  
be with you



Old Conventional 3D

Parametric Design





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Just as any divided kingdom is soon undone, so any Design that divides  
into several

different studies becomes confused and weakened.

Léonard De Vinci Adapted

THANK YOU

謝謝

DZIĘKUJĘ CI

NGIYABONGA

TEŞEKKÜR EDERİM

DANKIE

TERIMA KASIH

GRACIES

WHAKAWHETAI KOE

DANKON

TANK

TAPADH LEAT

SALAMAT

SPASIBO

GRAZIE

MATUR NUWUN

ХВАЛА ВАМ

MULTUMESC

PAKMET CIZGE

고맙습니다

GRAZIE

شكرا

FAAFETAI

ESKERRIK ASKO

HVALA

GO RAIBH MAITH AGAT

БЛАГОДАРЯ

GRACIAS

MAHADSANID

ТИ БЛАГОДАРАМ

TEŞEKKÜR EDERİM

TAK

DANKE

DANKJE

ΕΥΧΑΡΙΣΤΩ

GRATIAS TIBI

OBRIGADO

AČIŲ

SALAMAT

MAHALO IĀ 'ŌE

TAKK SKALDU HA

MERCI

RAHMAT

MERCI

GRAZZI

PAKKA PÉR

HATUR NUHUN

PAXMAT CAĞA

DI OU MÈSI

ĎAKUJEM

CẢM ƠN BẠN

UA TSAUG RAU KOJ

TI БЛАГОДАРАМ

СИПОС


WAZVIITA

FALEMINDERIT

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AVEVA is a global leader in industrial software, sparking ingenuity to drive responsible use of the world's resources. The company's secure industrial cloud platform and applications enable businesses to harness the power of their information and improve collaboration with customers, suppliers and partners.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. With operations around the globe, we are headquartered in Cambridge, UK and listed on the London Stock Exchange's FTSE 100.

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