Mobile
Soil Washing Plant



Remediate contaminated soils – on-site, no haulage required, ready to deploy

02/11/2026

Certified to ISO 9001 & 14001

Key facts | MAG's Mobile Soil Washing Plant unlocks efficient and compliant soil remediation through flexible, site-adapted processing



Required space: approx. **12 x 18 m**
plus movement area

- **Input:** Contaminated soils
- **<63 µm fraction:** 30% of input; higher shares possible
- **Throughput:** 5 – 20 tons/h
- **Residual material:** Depending on input
- **Process Water:** Configured to suit material and site conditions
- **Emissions:** Compliant with EU standards
- **Energy consumption:** Approx 20kW/hour

Contaminants typically addressed | Soil washing targets high-risk contaminants that drive remediation cost, regulatory pressure, and limit land reuse



Total Petroleum Hydrocarbons

- **What:** Derived from fuels, oils, and solvents (e.g. diesel, petrol)
- **Risk**: soil and groundwater contamination with environmental and health impact
- **Source:** leaks, storage, industrial handling



"Forever chemicals" e.g., PFAS

- **What:** Highly persistent fluorinated compounds
- **Risk**: long-term environmental accumulation and regulatory pressure
- **Source**: firefighting foams and industrial applications



Polycyclic Aromatic Hydrocarbons

- **What:** Formed through incomplete combustion (e.g. coal, oil, wood)
- **Risk**: toxic compounds accumulating in contaminated soils
- **Source**: Legacy industrial sites and combustion-heavy processes (e.g. steel, energy, petrochemical)



Heavy Metals

- **What:** Inorganic contaminants (Pb, Zn, Cd, As, Cu) bound to fine soil particles
- **Risk**: Toxic accumulation in soil and groundwater; strict regulatory liability
- **Source**: Smelters, mining, metal processing, demolition material

MAG Mobile Soil Washing Plant key benefits | Enables fast, flexible, and high-performance remediation directly on site

Up to –60%

Overall cost vs. haulage & disposal

No landfill transport, no external storage costs, no complex logistics. Treatment directly on site

Parallel operations

Excavation & treatment running simultaneously

Excavation and washing run in parallel. No waiting time between project phases. Shorter overall timeline. Mobile setup adapts to different sites and project sizes, Deploy where needed, when needed

>90%

Material recovery

Cleaned gravel and sand are immediately reusable – as road construction, landscaping or drainage material

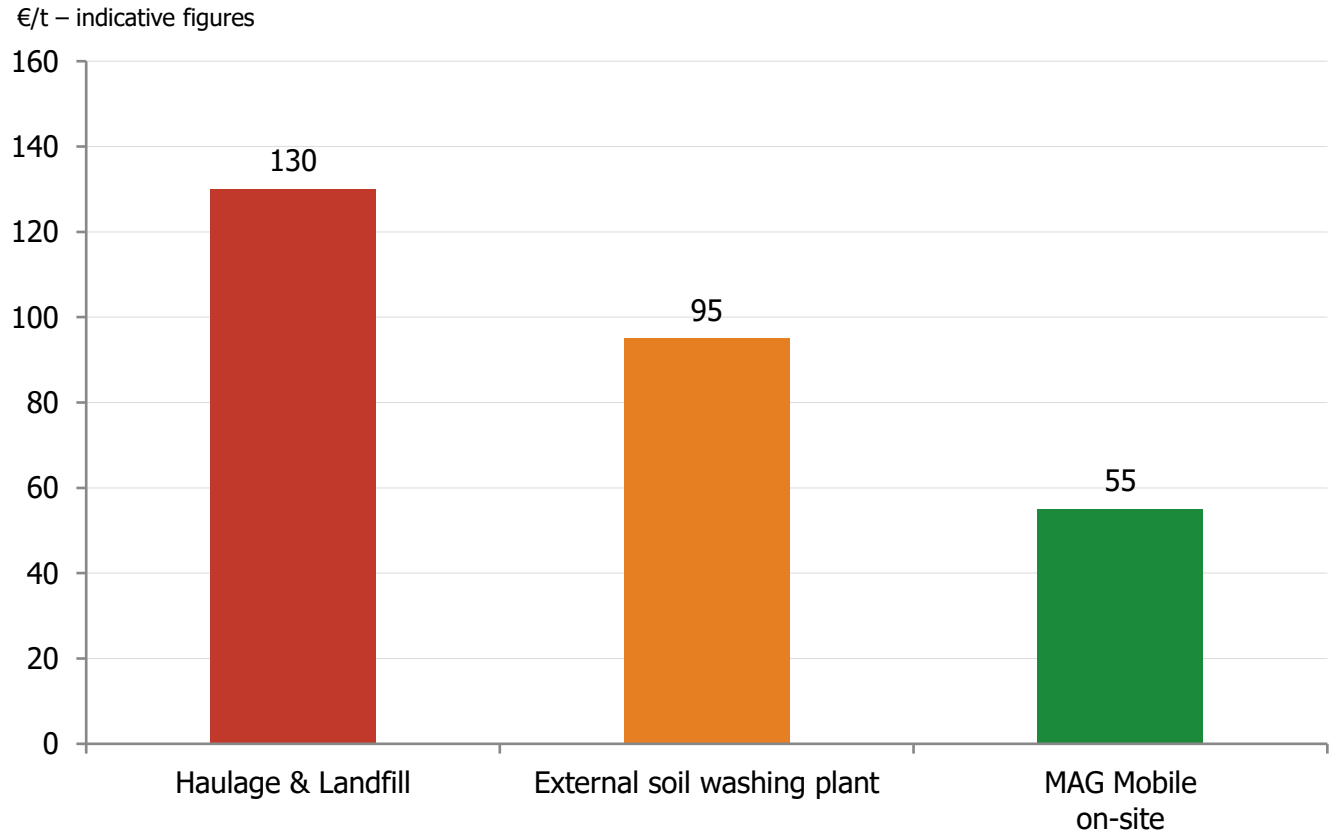
0 l

Unfiltered wastewater discharge

Fully closed water circuit. No unfiltered wastewater discharge. Compliant with EU environmental standards & ESG requirements

Cost Comparison (example) | On-site Washing vs. Conventional Disposal

Indicative calculation for a project with 10,000 t of contaminated soil*

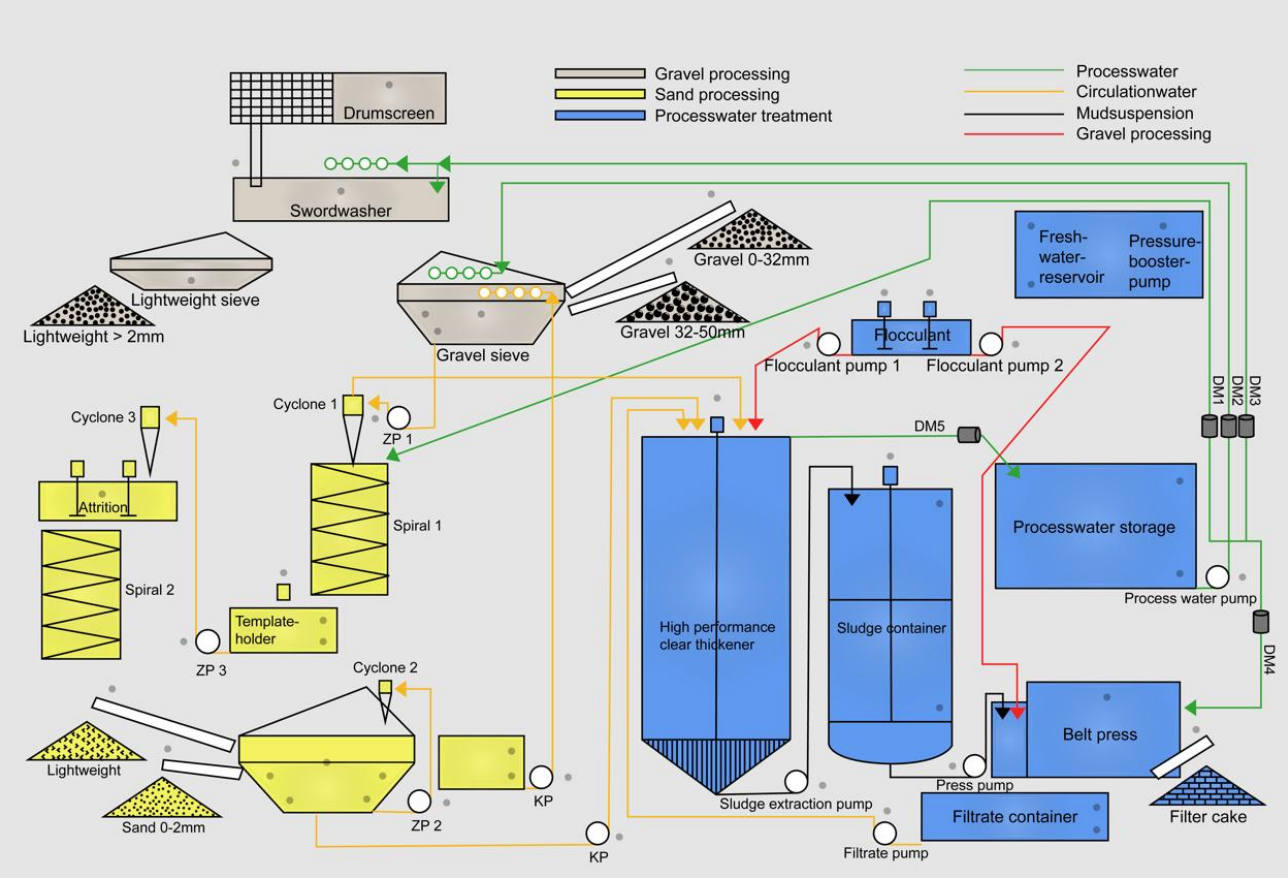


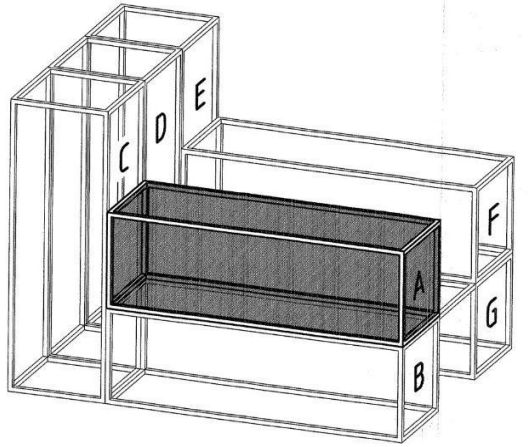
Savings potential at 10,000 t

Transport & Logistics	**~ 300.000 €**
Landfill costs	**~ 350.000 €**
Project duration	**~ 4–6 weeks**
Total savings	**~ 750.000 €**

* based on project example 2024. Project-specific calculation available on request.

Process illustration | Mobile soil washing plant benefits from modular design – ensuring short ramp-up times and on-site mobility if needed





Module	Description
A	Particle Breakdown
B	Process Water and Gravel Sieve
C	Particle Sizing
D	Water Treatment
E	Buffer Tank
F	Belt Filter
G	Flocculation Station, Control Room and Storage

Oil Pipeline Leakage, Italy | Compared to bioremediation, the approach enabled a time saving of approximately 15 months while allowing earlier site reuse



Initial Situation

- **land** near Adriatic
- **180,000 tonnes** oil-contaminated soil
  - TPH: 4,500–12,800 mg/kg
  - BTEX: elevated
  - PAHs: 180–520 mg/kg
- **Agricultural reuse**
- **~45 months** (continuous operation)

Results

- **Material recovery:** 165,600 tonnes (92%)
- **Residual contamination:** 14,400 tonnes highly contaminated fines
- **Achieved values:** unchanged (TPH 32–48 mg/kg, PAH <10 mg/kg)
- Closed-loop water system maintained at scale

Cost comparison and Savings (volume treated)

- **Transport + landfill:** 207 €/t → **37,300 kEUR**
- **Bioventing:** 98 €/t → **17,665 kEUR**
- **MAG Mobile:** 62 €/t → **11,160 kEUR**

26,140 kEUR (70%)
+ ~15 months faster than bioremediation

SSRP Pond Remediation, Bahamas | Remediation of the crude oil basin "Freeport Bahamas" with the supplementary application of an adapted MAG water glass process





Initial Situation

- **Land** near oil terminal, southern coast of Grand Bahama Island
- **30,000 tonnes** oil-contaminated soil
  - TPH: up to 50.000 mg/kg
  - BTEX: up to 400 mg/kg
  - PAHs: up to 1200 mg/kg
- **Complete restoration**
- **~30 months** (continuous operation)

Results

- **Material recovery:** 28,200 tonnes (94%)
- **Residual contamination:** 1,800 tonnes highly contaminated fines
- **Achieved values:**
  - TPH <5.000 mg/kg,
  - BTEX <50 mg/kg
  - PAH <120 mg/kg
- On-site treatment eliminated regulatory pathway of transboundary shipments under the Basel Convention entirely

Cost comparison and Savings (volume treated)

- **Transport + landfill:** 210-225[1] USD/t → **>6,300 kUSD**
- **Bioventing:** 105 USD/t → **3,150 kUSD**
- **MAG Mobile:** 75 USD/t → **2,250 kUSD**

4,050 kUSD (64%) savings

1) Landfill Mexico (high risk authorization – SEMARNAT), US landfill with required TCLP-documentation, batches classified as RCRA-hazardous, required stabilization through mixing

Copper-Nickel Mine, Norway| Under Arctic conditions, contaminated soil was successfully treated while recovering valuable raw materials such as copper and nickel



Initial Situation

- **Mining area** near Russian border
- **120,000 tonnes** tailings material
  - Nickel: 1,850 mg/kg
  - Copper: 920 mg/kg
  - Fine fraction: 18%
- Extract **valuable resources**
- Arctic conditions, tight time-frame
- **~3 summer seasons** (approx. 36 months total)

Results

- **Material recovery:** 98,500 tonnes (82%)
- **Residual contamination:** ~21,000 tonnes heavy metal concentrate
- **Achieved values:** extraction of valuable raw materials for reuse
- **No fjord transport required** (major logistical advantage)

Cost comparison and Savings (volume treated)

- **Ship + landfill:** 211 €/t → **19,005 kEUR**
- **Container export:** 142 €/t → **12,277 kEUR**
- **MAG Mobile:** 68 €/t → **6,120 kEUR**

12,885 kEUR (68%)

How to get the Plant – Rental Model & Project Process

01

Enquiry & Initial Consultation

Project outline, contaminant profile, timeline. MAG will respond within 48 hours

02

Soil Analysis & Feasibility

On-site sampling or laboratory data. MAG assesses suitability and defines process parameters

03

Quotation & Rental Agreement

Individual costing. Rental model includes assembly, commissioning and technical support

04

Installation & Commissioning

Transport, U-shaped setup and connection by MAG technicians. Typically 3–5 working days

05

Operations & Ongoing Support

Continuous technical assistance. Documentation for authorities. Final project reports

Impressions







Dr. Gregor Kubatta

E-Mail: gregor.kubatta@mag-umwelt.de

Phone: +49 2631 9789461

Marcus Bönisch

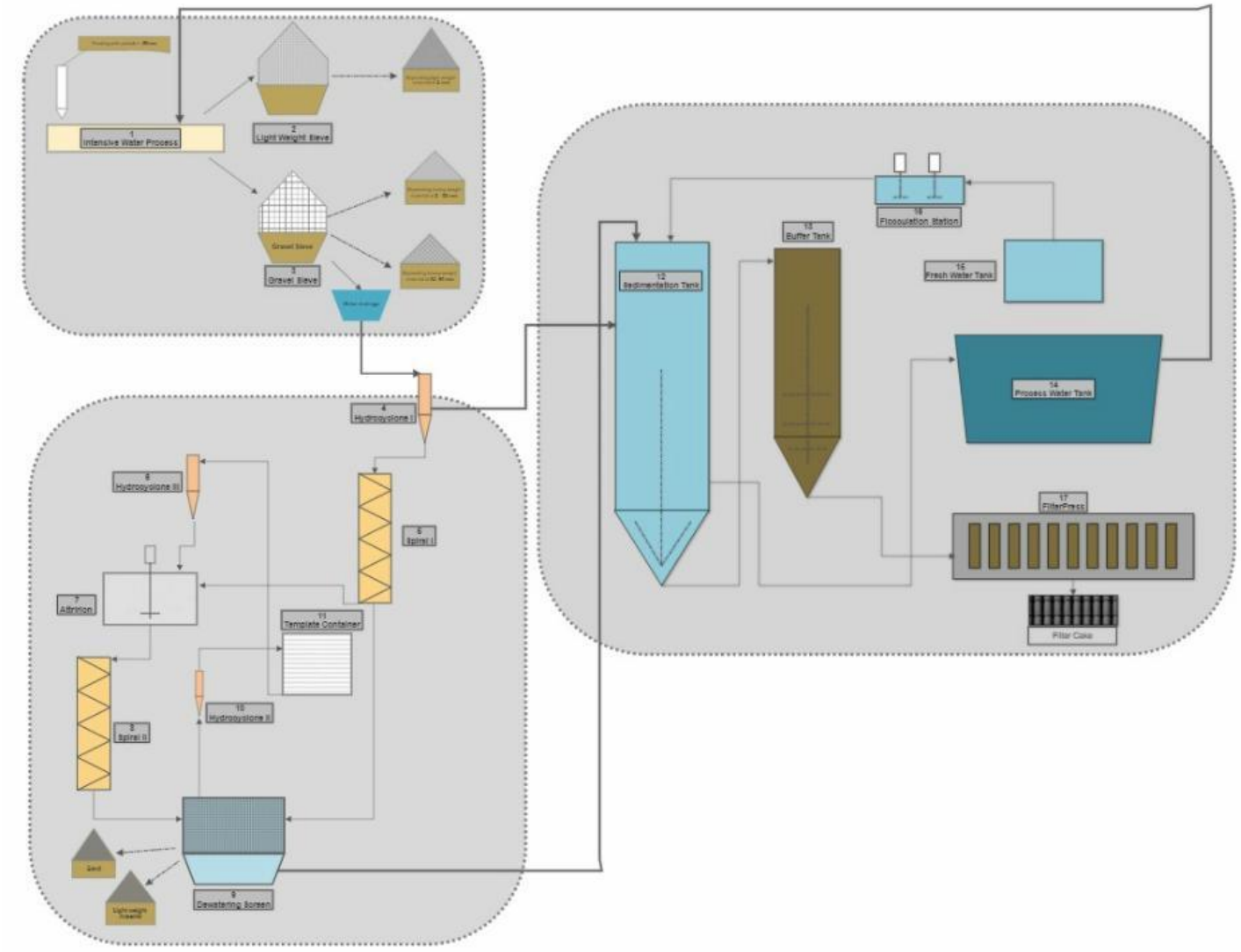
E-Mail: Marcus.boenisch@mag-umwelt.de

Phone: +49 1573 6706415

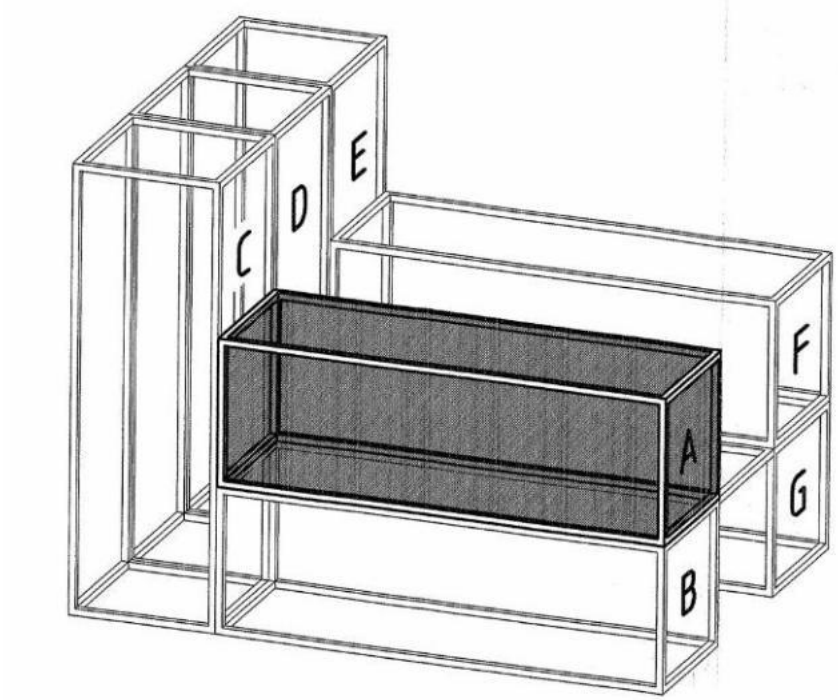
MAG GmbH
August-Bungert-Allee 6
D – 56599 Leutesdorf
Germany

Specs & details

Soil Washing Plant - Flow

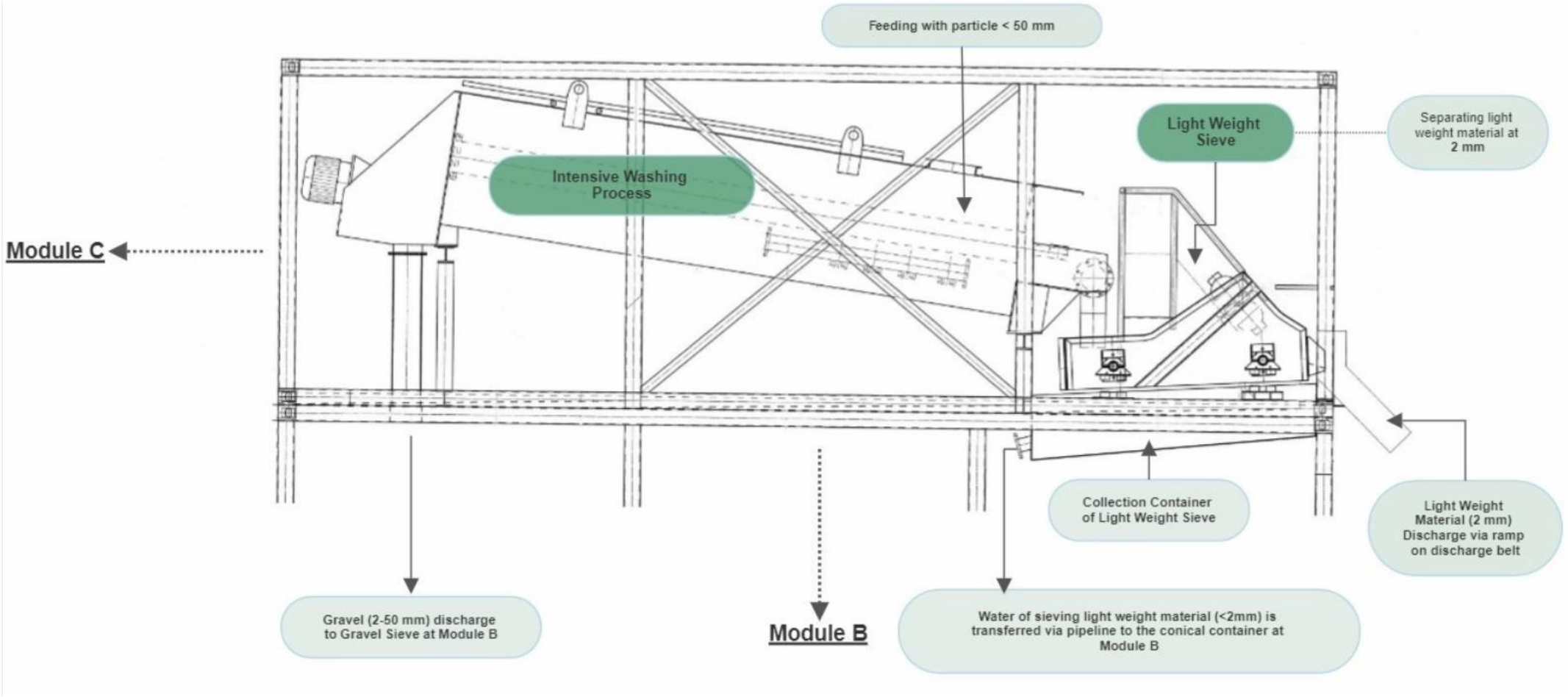


Module A – Particle Breakdown





Module A – Particle Breakdown



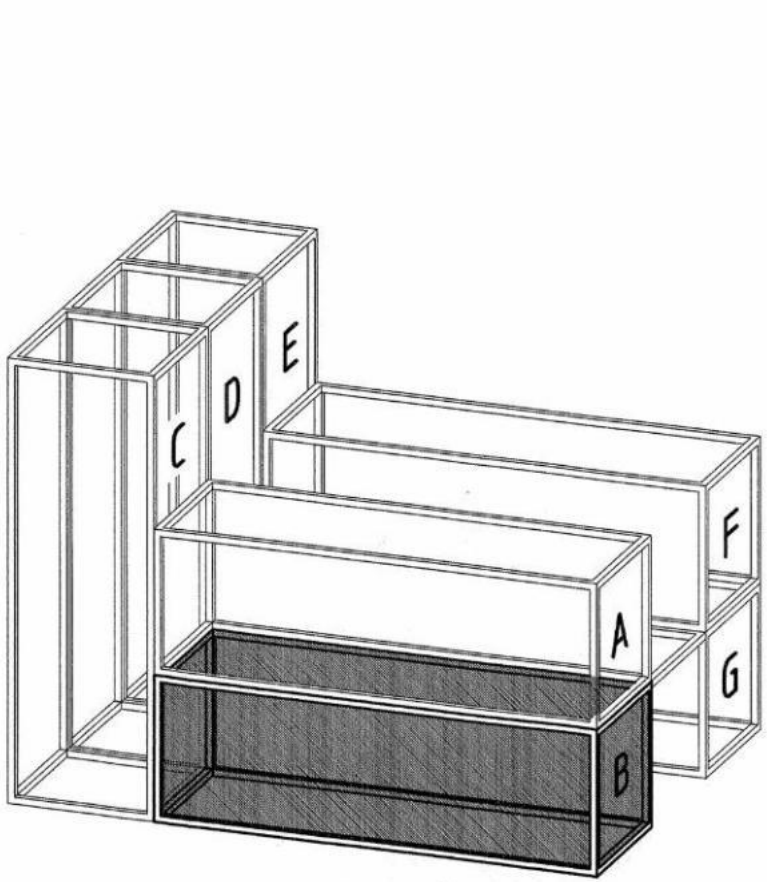
Module A – Particle Breakdown





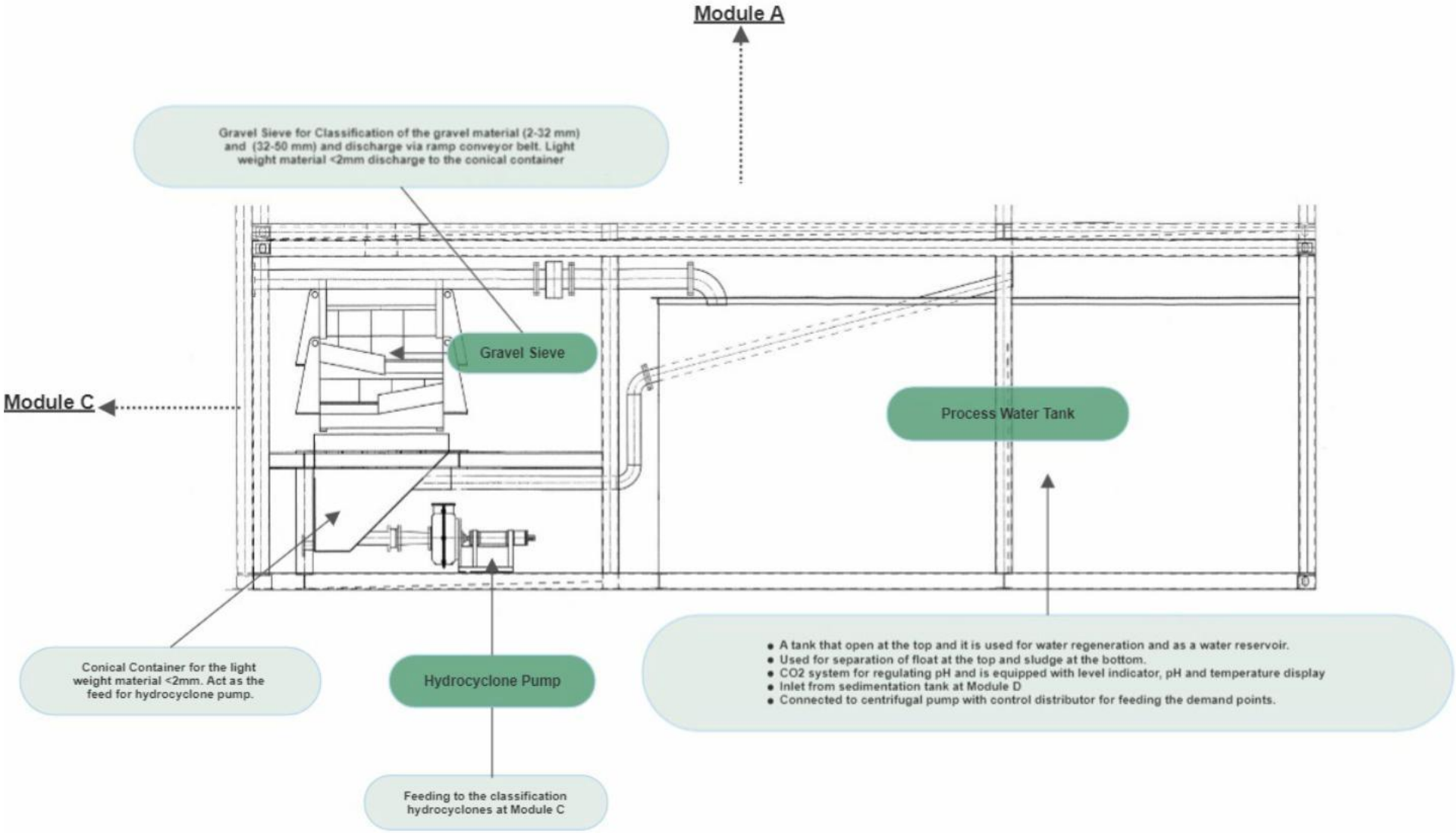


Module B – Process Water and Gravel Sieve





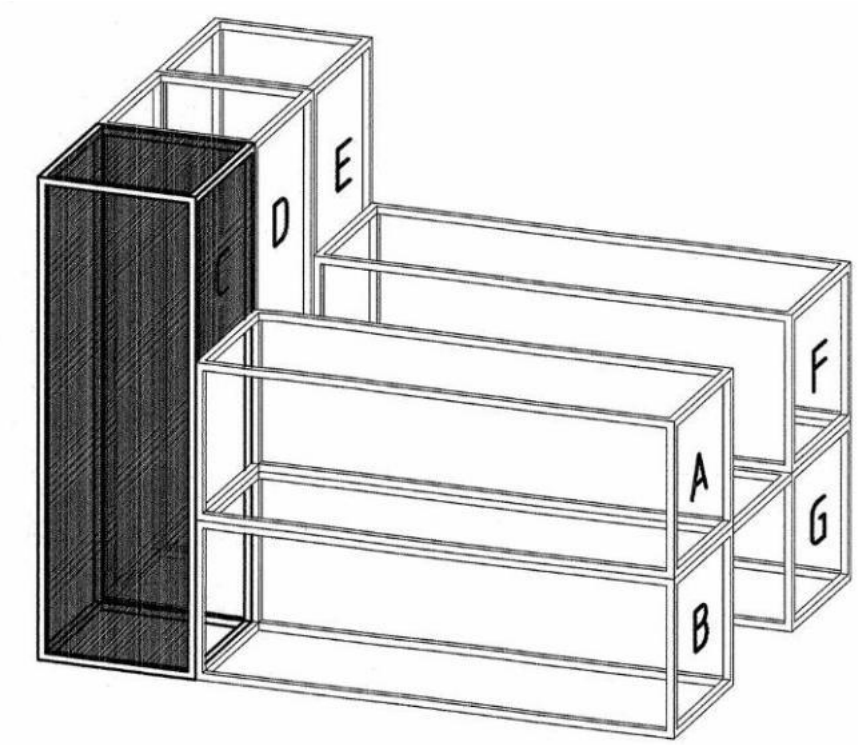
Module B – Process Water and Gravel Sieve



Module B – Process Water and Gravel Sieve

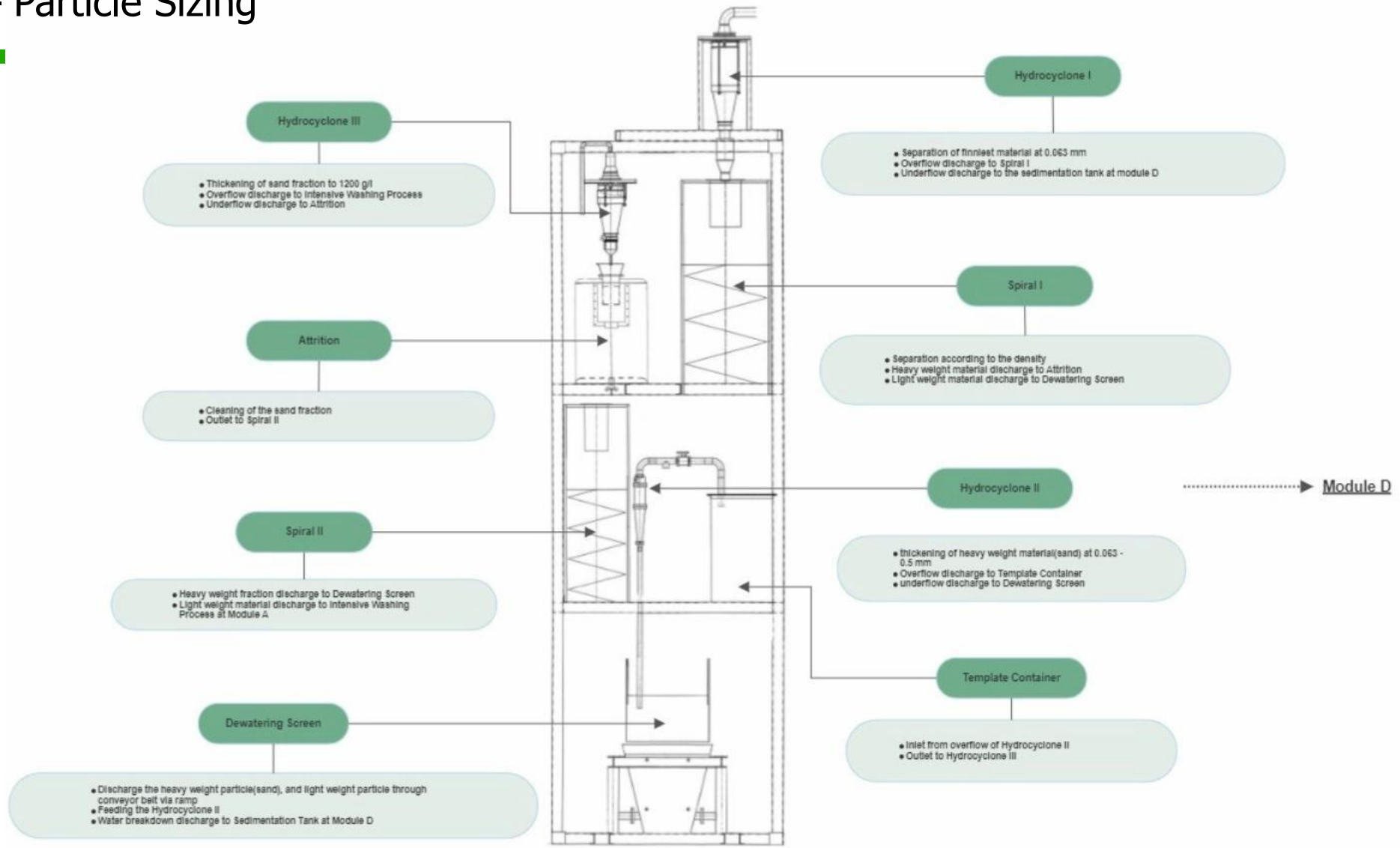


Module C – Particle Sizing





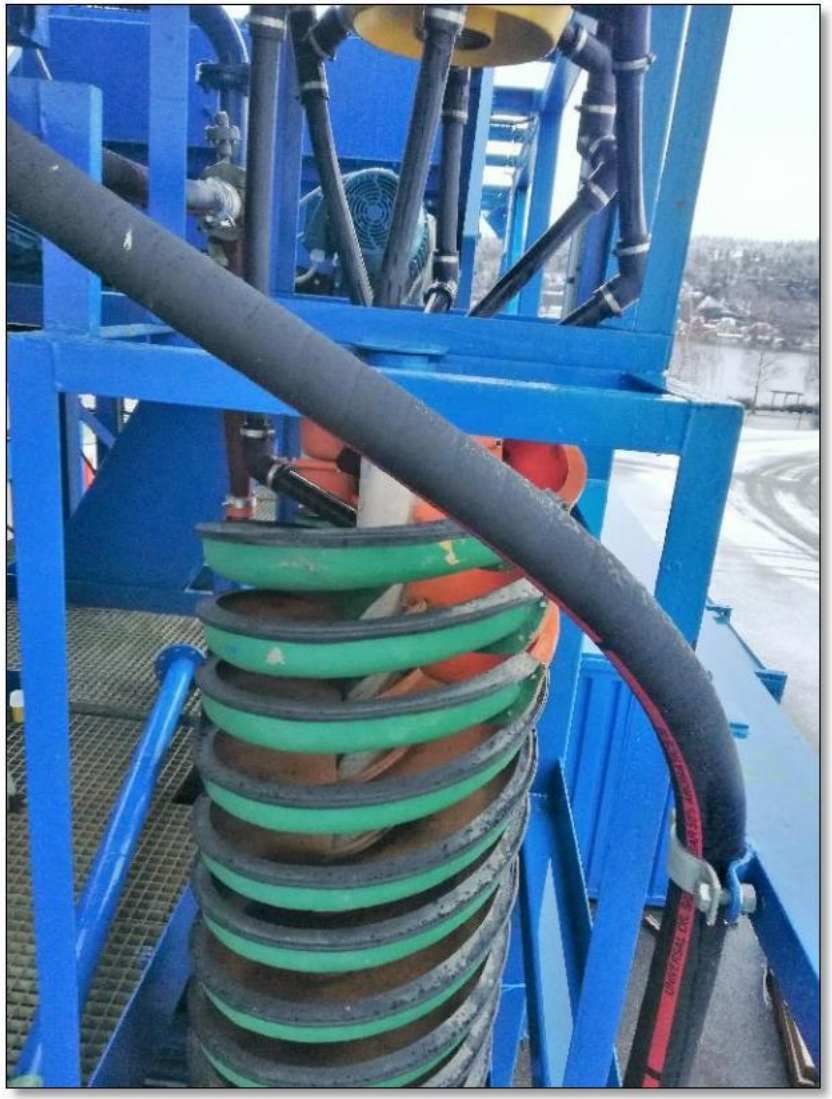
Module C – Particle Sizing



Module C – Particle Sizing

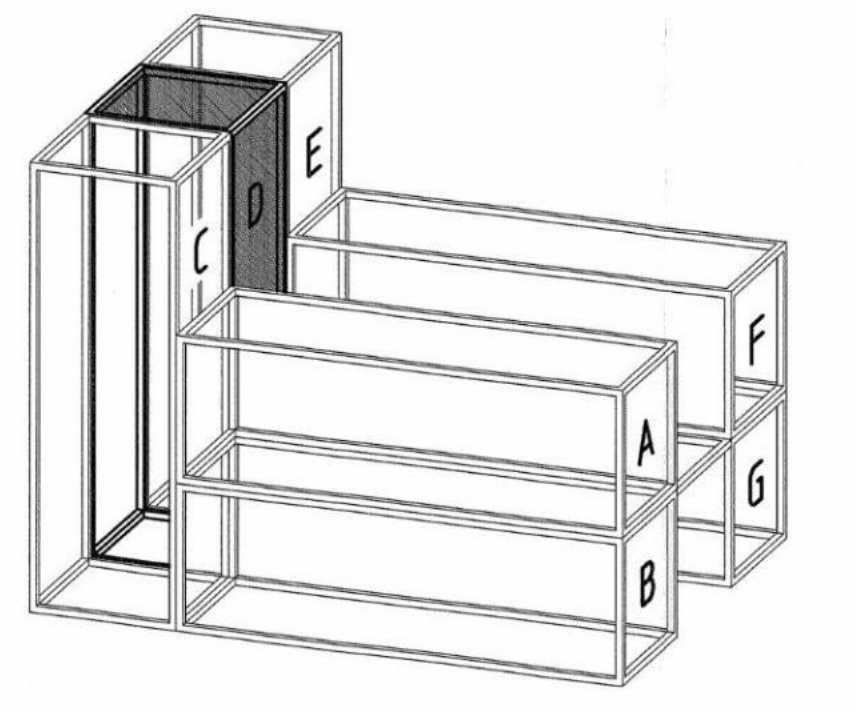






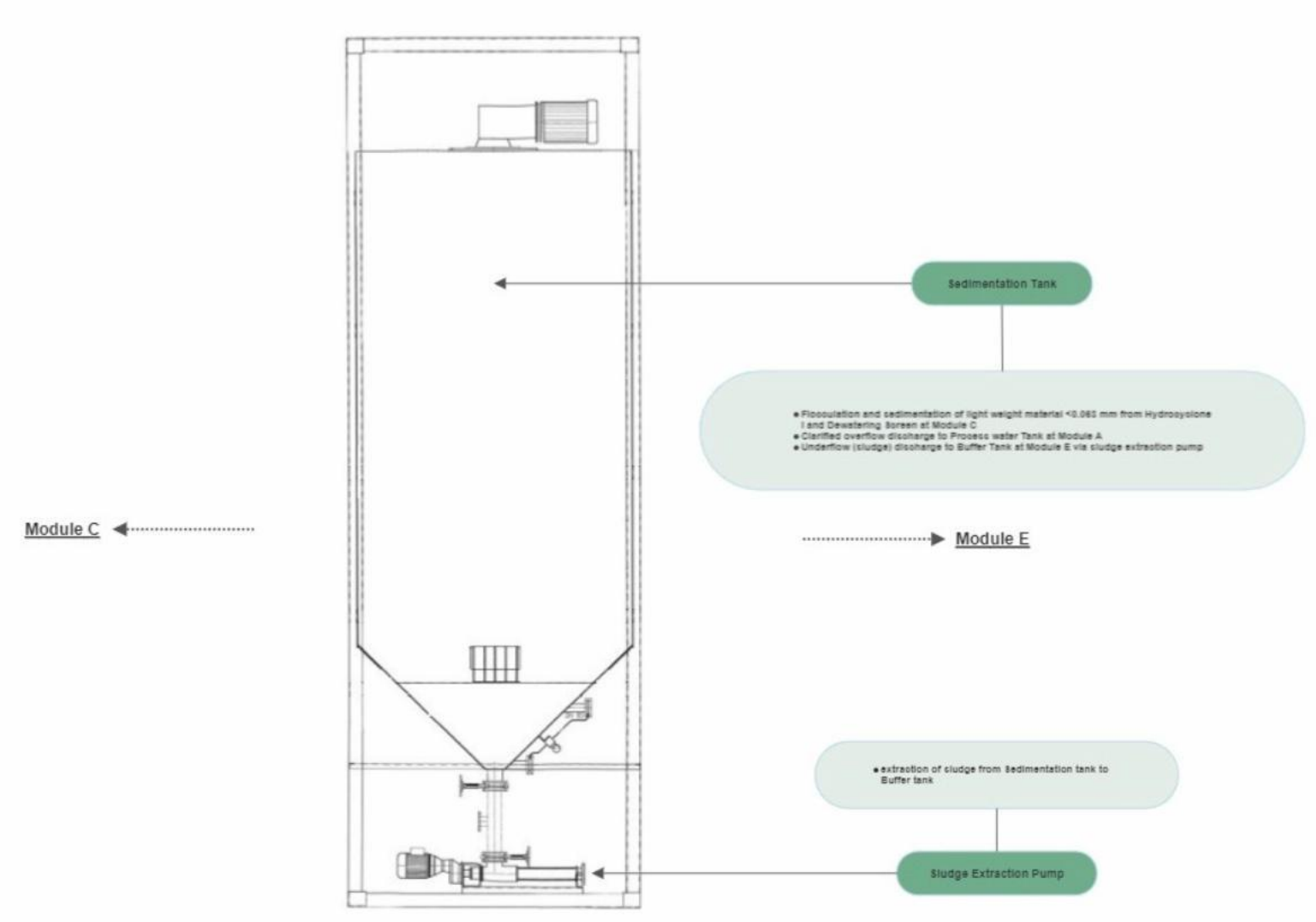


Module D – Water Treatment

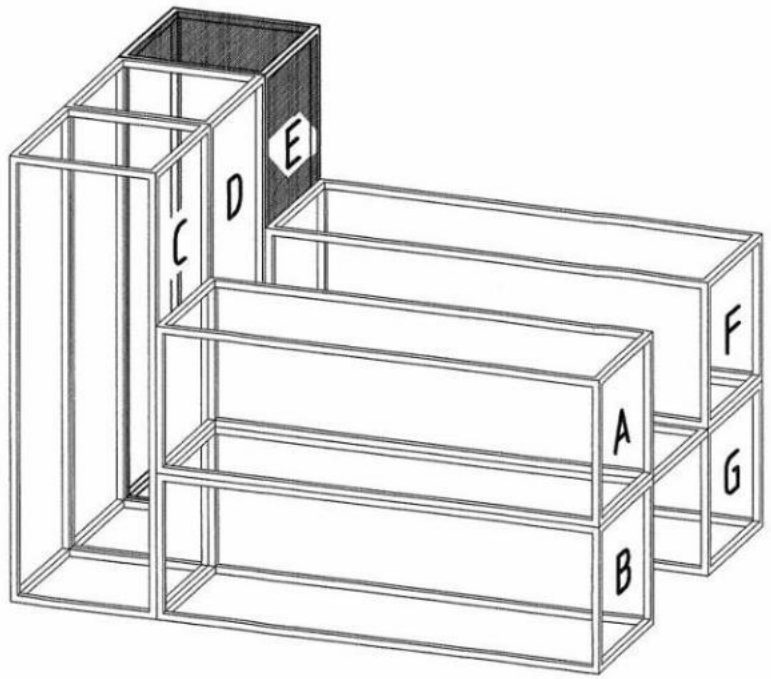




Module D – Water Treatment



Module E – Buffer Tank

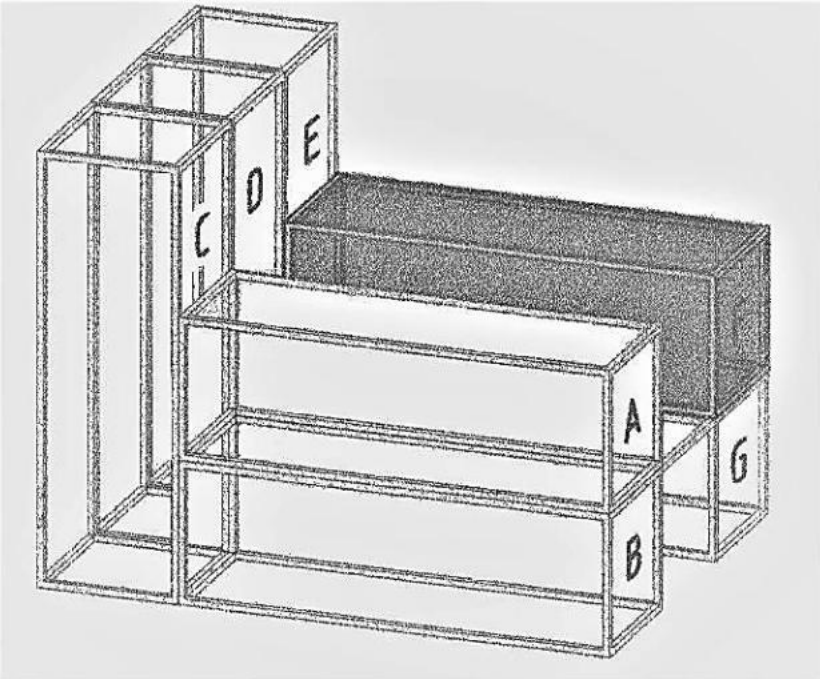




Module E – Buffer Tank

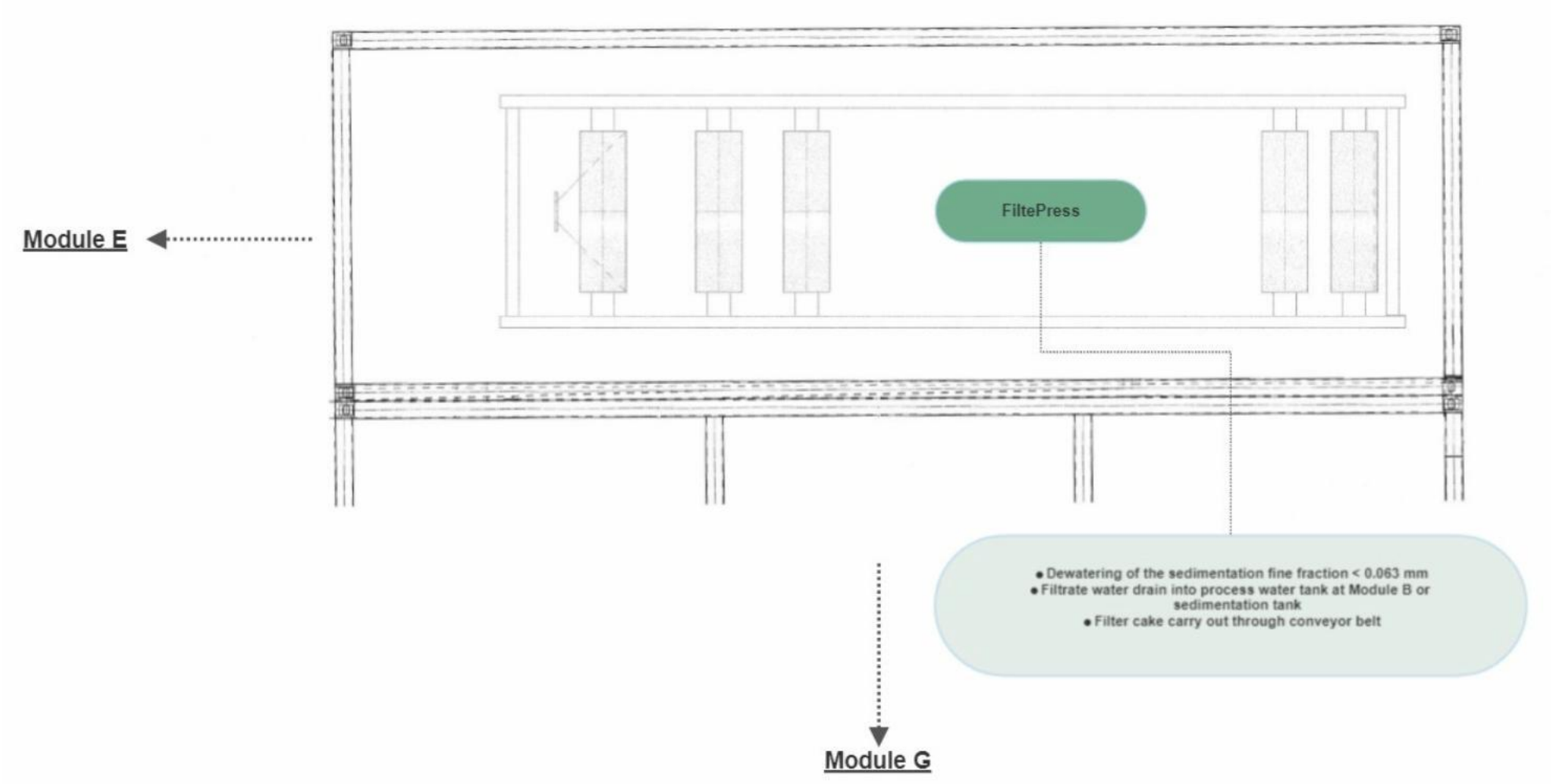


Module F – Belt Filter





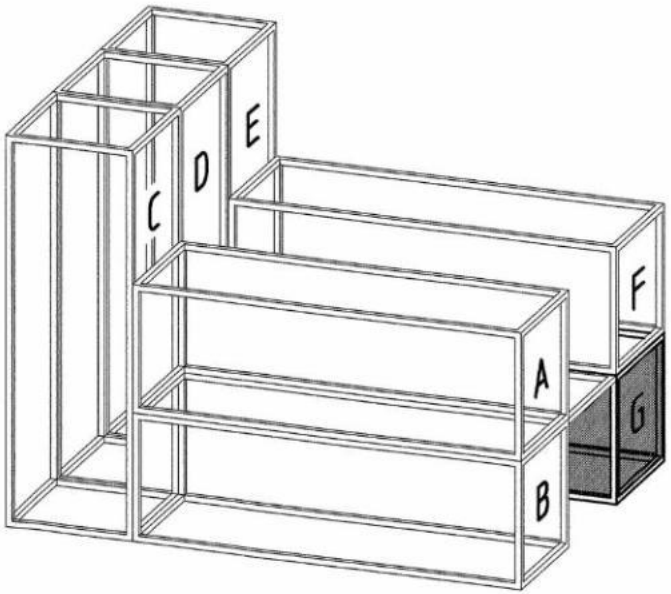
Module F – Belt Filter



Module F – Belt Filter

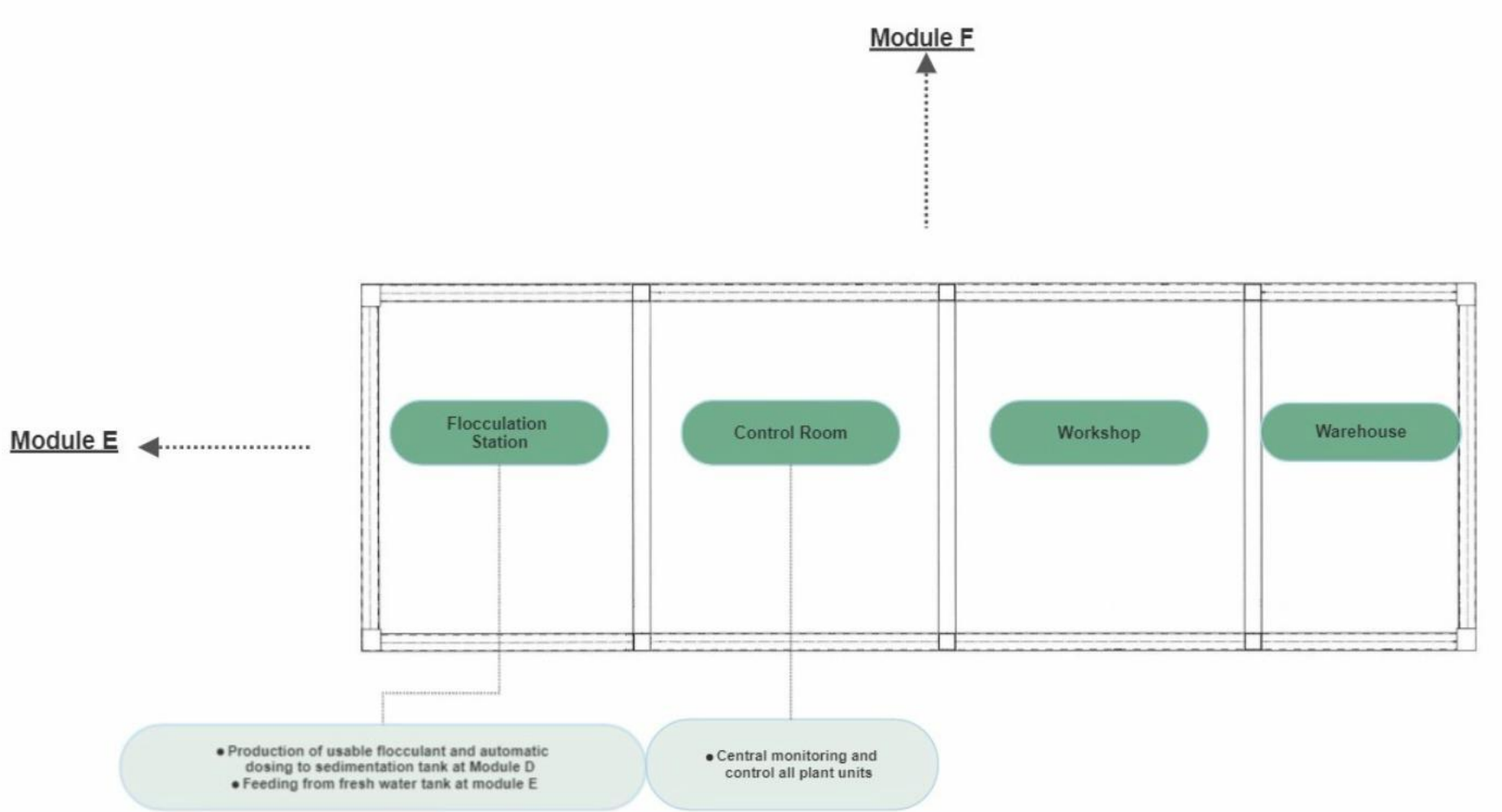


Module G – Flocculation Station, Control Room and Storage





Module G – Flocculation Station, Control Room and Storage



Module G – Flocculation Station, Control Room and Storage

