

WE CONVEY QUALITY



SCHADE

AUMUNDGROUP

Three generations

1922 Foundation



Prof. Heinrich Aumund

1951 Production Workshop



Günter Claus Aumund

1966 International Orientation



Franz-Walter Aumund

The Aumund Group / SCHADE Stockyard Technologies



AUMUND Fördertechnik
Rheinberg, Germany
Conveying, Storing, Reclaiming



SCHADE Lagertechnik
Gelsenkirchen, Germany
Stockyards and Blending Beds



SAMSON Materials Handling
Ely, UK
Mobile Materials Handling



SCHADE – Global Presence

MAP/DAP longitudinal storage , USA



Buffer storage with Portal Reclaimer
Rail span: 51 m
Reclaim capacity: 2.100 t/h

Combined Stacker/Reclaimer for Sulphur, Russia



Buffer storage with combined Stacker/Reclaimer
Stacking capacity: 2.500 t/h
Reclaim capacity: 1.700 t/h

Coal longitudinal storage, Korea



Buffer storage with Semi-Portal Reclaimer
Rail span: 58 m
Reclaim capacity: 1.980 t/h

Limestone circular storage, Germany



Circular blending bed
Stacking capacity: 600 t/h
Reclaim capacity: 200 t/h

Coal circular storage, China



Circular shape
Stacking capacity: 4.000 t/h
Reclaim capacity: 2.000 t/h

Limestone longitudinal storage, Brazil



Blending bed with Bridge reclaimer
Reclaim capacity: 1.200 t/h

Coal longitudinal storage, Australia



Buffer storage with Portal Reclaimer
Rail span: 52 m
Discharge capacity: 3.400 t/h

SCHADE Industries

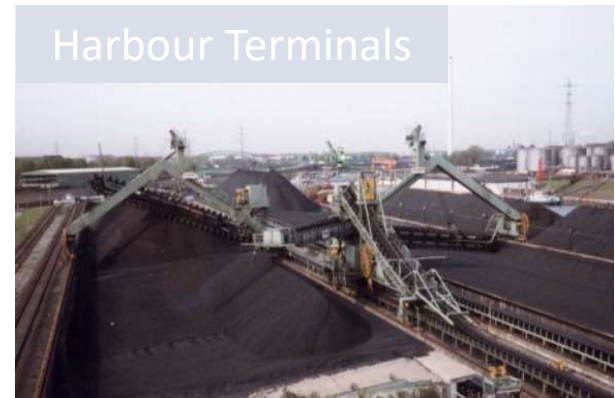
Mining



Power Industry



Harbour Terminals



Chemical Industry



Iron & Steel



Cement Industry



SCHADE expertise in storing and blending of dry bulk materials from customized project design to commissioning of complete plants

SCHADE Stockyard Technologies / Company

- Until today up to 1000 stacker / reclaimer machines built
- Global specialist for stacker and scraper reclaimer technology
- Experience with 60 different bulk materials
- Track record of machines with more than 50 years of operation
- Retrofit, modification, repair of competitor's machines
- Supplier of heavy duty and special requirement machines



Reclaimer with double boom, Australia

Rail Span 52 m
Reclaiming: 3.400 t/h



Combined Stacker / Reclaimer, Russalt, Russia, Span 75 m

Stacking: 800 t/h
Reclaiming: 350 t/h



Semi-Portal Reclaimer Samcheok, Korea

Reclaiming: 2.000 t/h



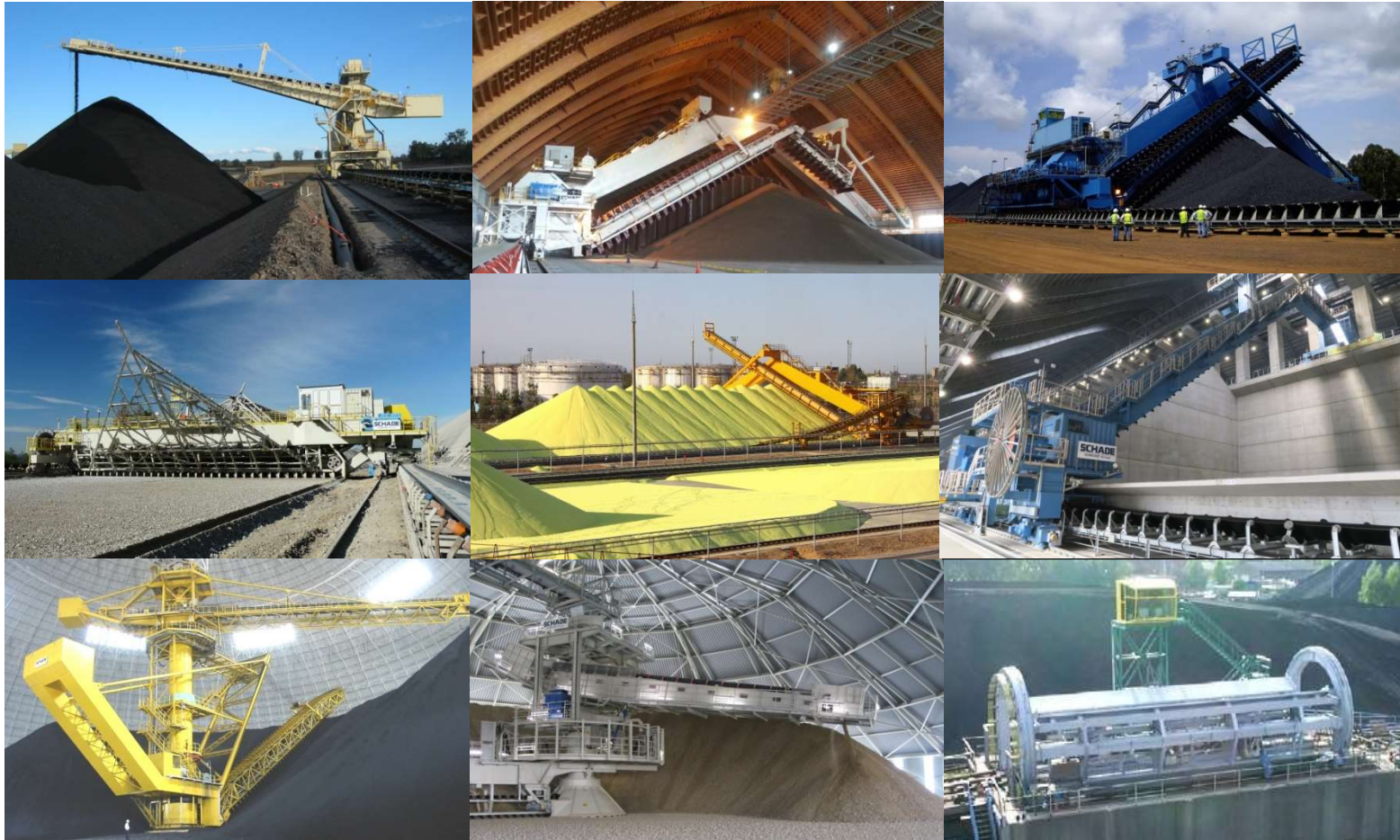
Bridge type Reclaimer

Biomass, Ghent, Belgium

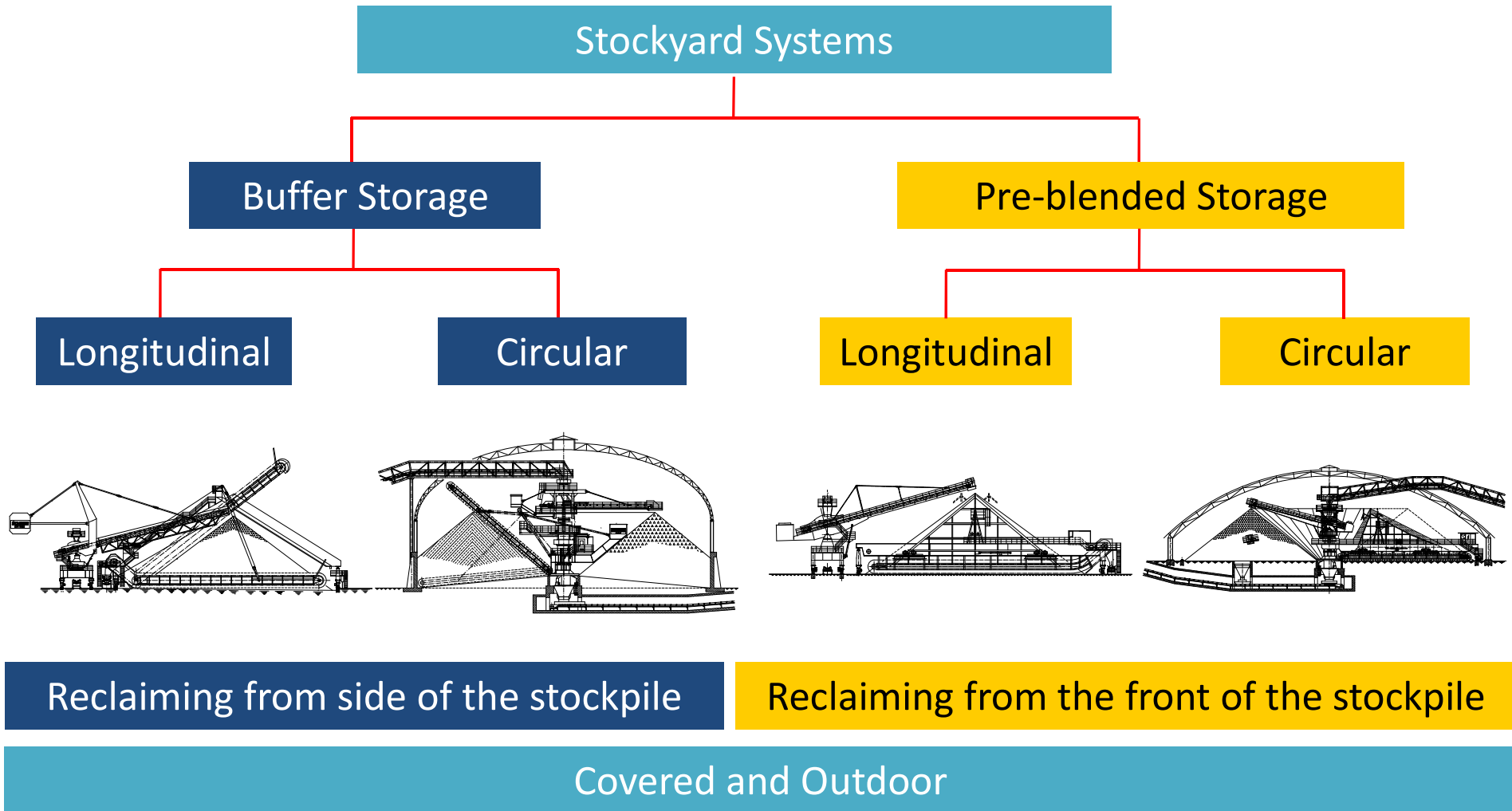
Reclaiming: 300 t/h

Developing reliable long-term stockyard solutions together with our customers

SCHADE Portfolio Overview



Classification of Stockyard Systems provided by SCHADE

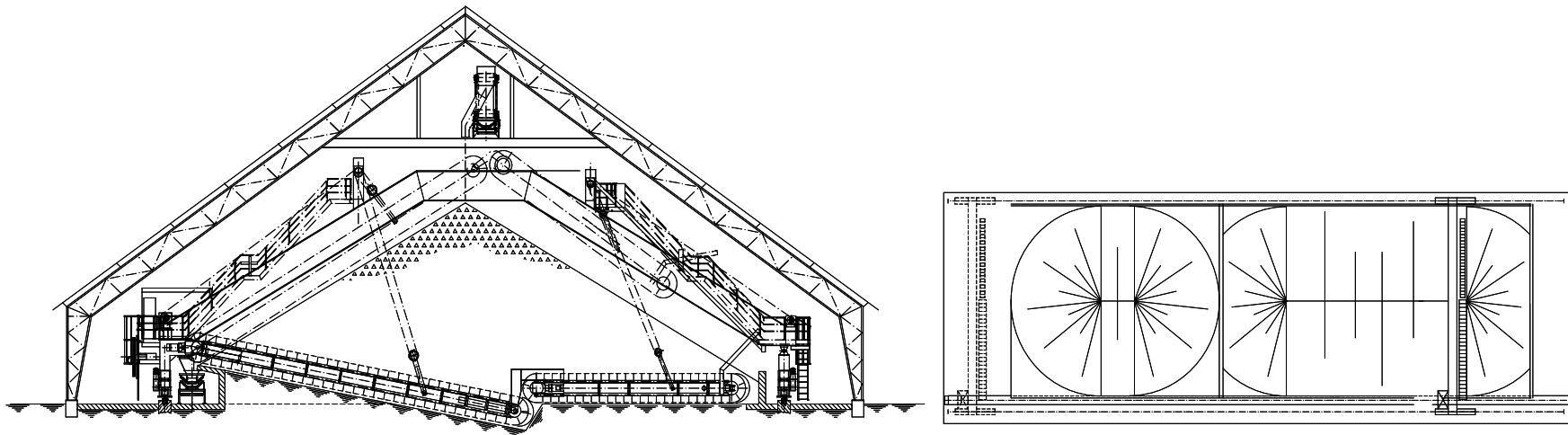


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Longitudinal Buffer Storage

Buffer Storage / Longitudinal Shape / Indoor

Typical Storage Arrangement with Portal Reclaimer



- Stockpile built up by Tripper Car
- Free sloping or compartmented by walls
- Reclaiming from the side slope of the pile by Portal Scraper Reclaimer
- Operating along the whole length of the stockpile or compartments or pre-selected sections
- **Reduced building height** due to Portal Reclaimer arrangement with two booms

Portal Scraper Reclaimer



**The Mosaic Co.
Big Bend Terminal**



Tampa, USA



2013

Technical Data:

- 2.100 tph MAP / DAP
- 51 m rail span
- 28,5 m main boom
- 12 m aux boom



Portal Scraper Reclaimer



**Neptune Bulk
Terminals**



Vancouver



1991

Technical data:

- 3.000 tph potash
- 53,5 m rail span
- 28 m 2 x main booms
- 16,7 m 2 x aux booms



Portal Scraper Reclaimer



Ultramar Terminal



Russia



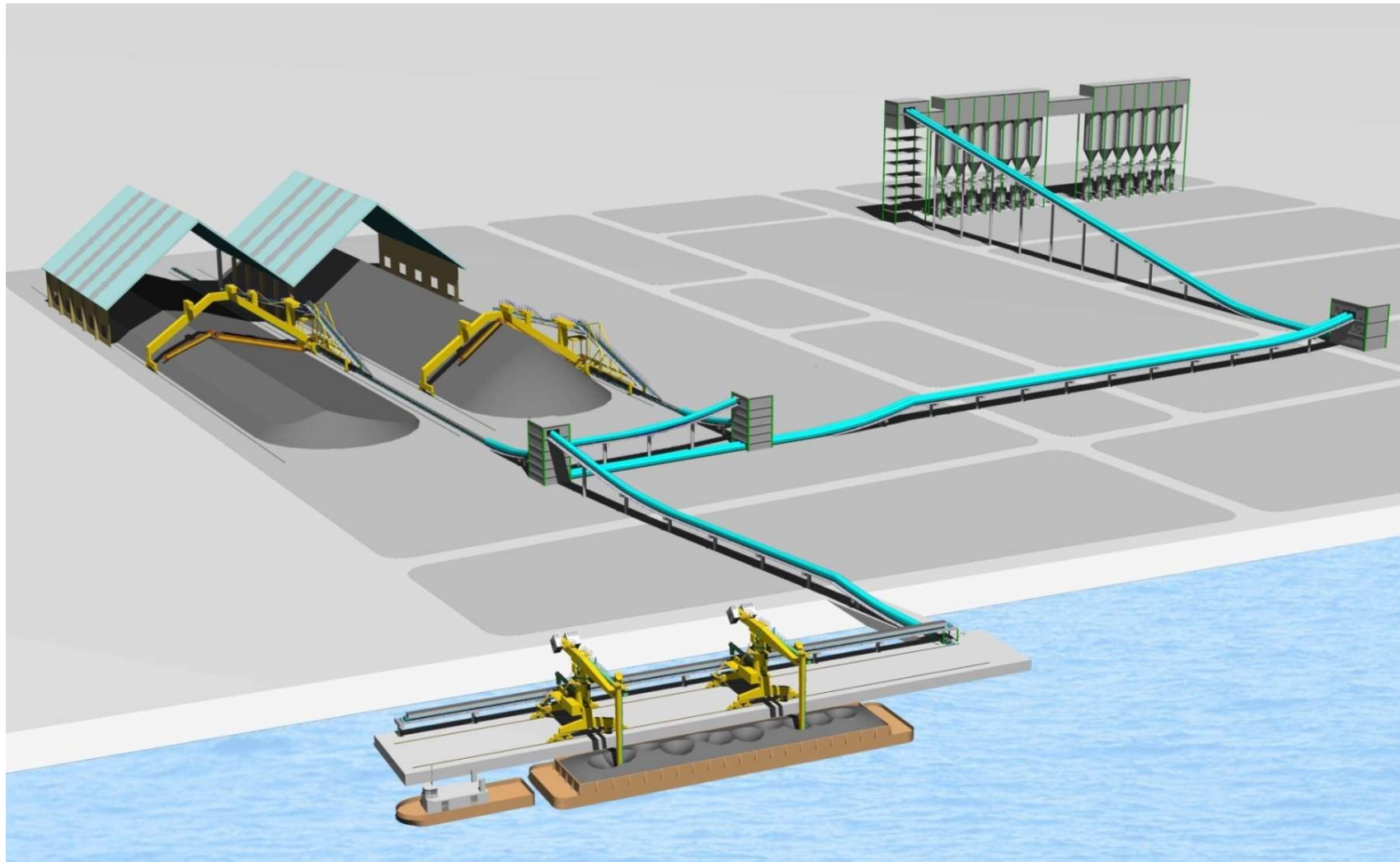
2022

Technical data:

- 2.500 tph
- iron ore pellets / coal
- 44 m rail span

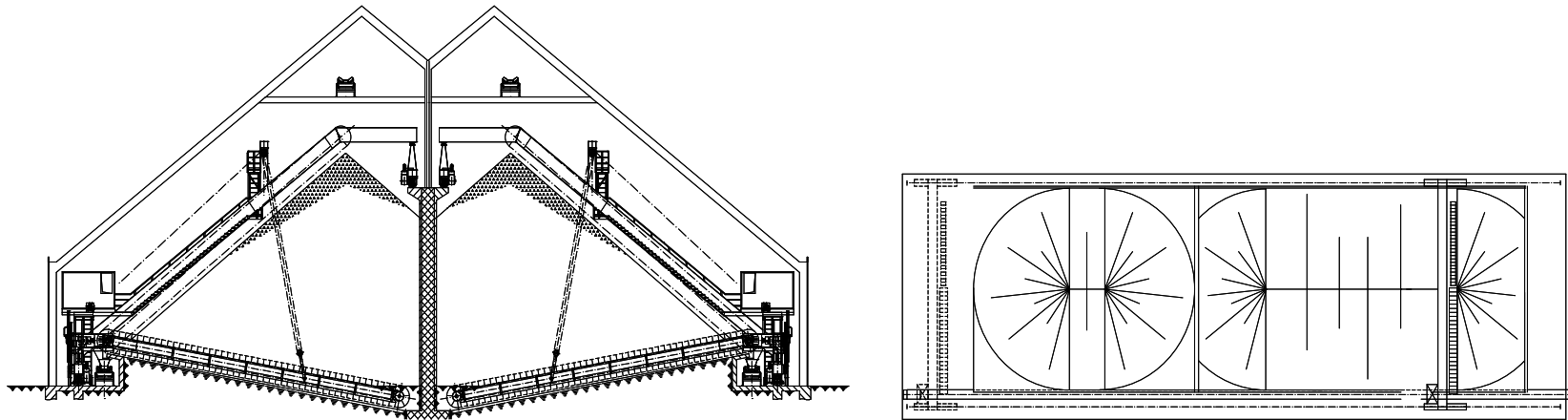


Buffer Storage / Longitudinal Shape



Buffer Storage / Longitudinal Shape / Indoor

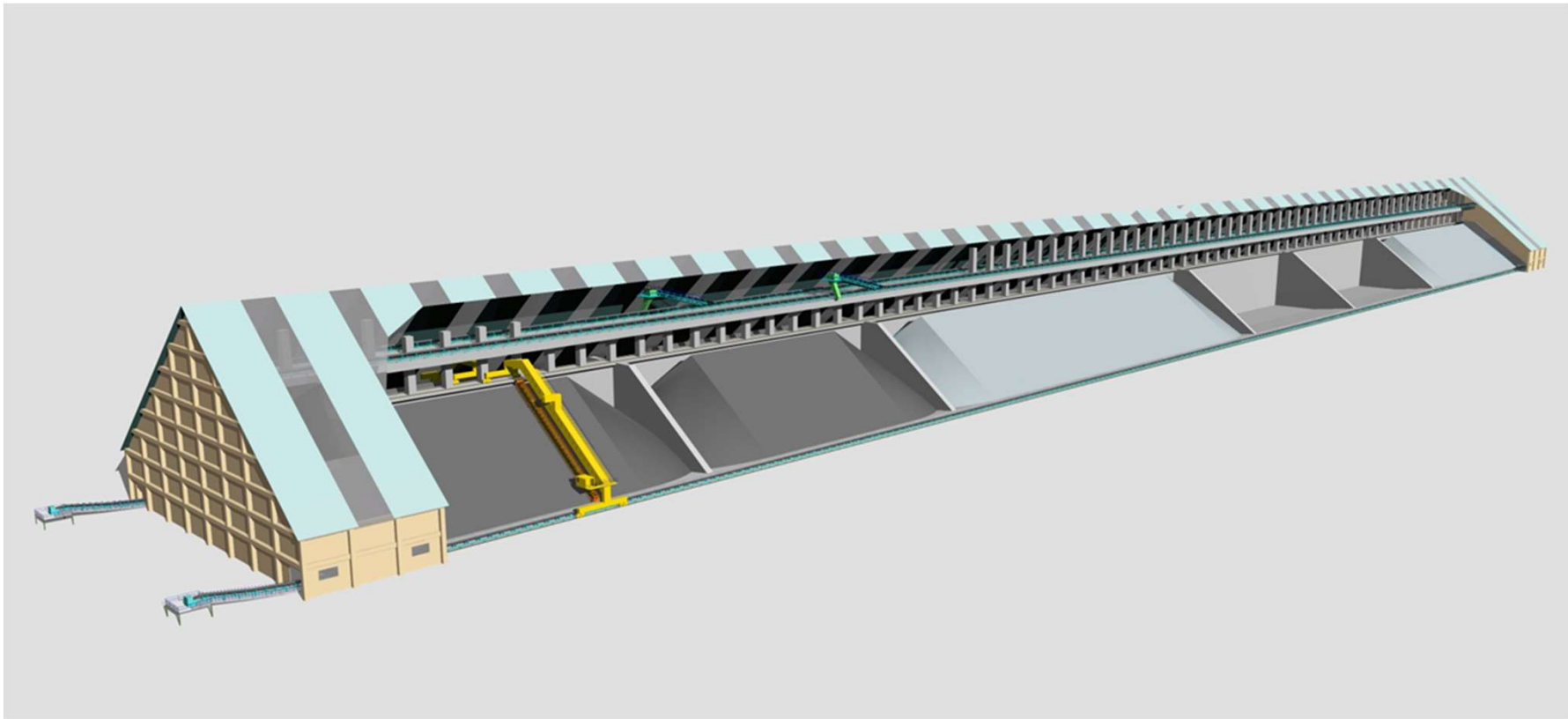
Typical Storage Arrangement with Semi-Portal Reclaimer



- Stockpile built up by Tripper Car
- Free sloping or compartmented by walls
- Reclaiming from the side slope of the pile by Semi-Portal Scraper Reclaimer
- Operating along the whole length of the stockpile or compartments or pre-selected sections
- Central Wall required

Buffer Storage / Longitudinal Shape / Indoor

Typical Storage Arrangement with Semi-Portal Reclaimer



Buffer Storage / Longitudinal Shape / Indoor

Dangjin Power Plant
Korea



1600 t/h

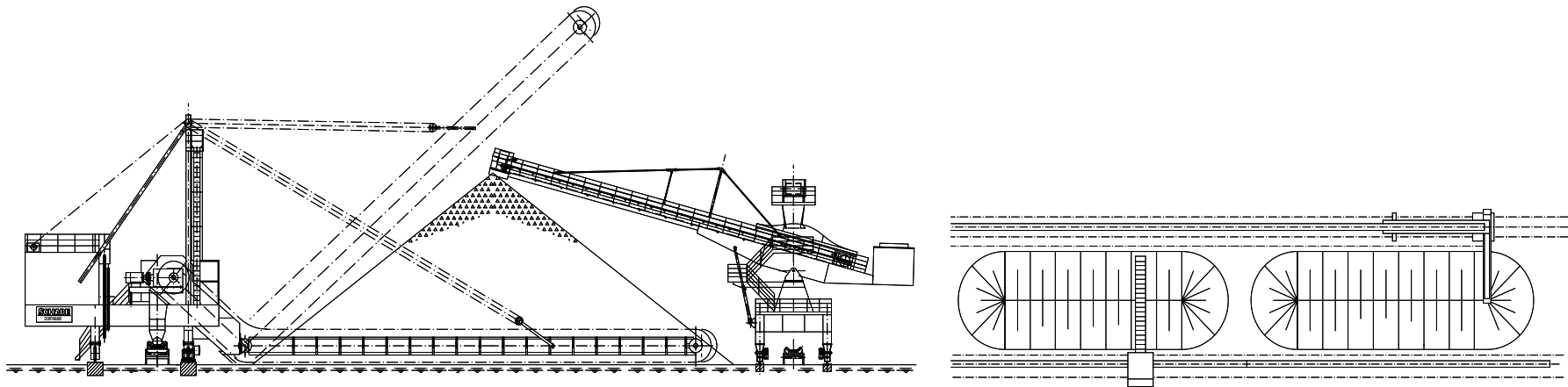
Semi-Portal Reclaimer coal handling
discharge via concrete ramp

SCHADE Reference in China



Buffer Storage / Longitudinal Shape / Outdoor

Typical Storage Arrangement with Cantilever Reclaimer



- Stockpile built up by travelling and luffing Stacker
- Reclaiming from the side slope of the pile by Cantilever Scraper Reclaimer
(for pile widths up to 30 m)
- Operating along the whole length of the stockpile or pre-selected sections
- Automatic operation
- Quick travelling between different working locations

Scraper Reclaimers (limestone handling)

Kawasaki for Celik Holding
TURKMENISTAN



200 t/h

Cantilever Reclaimer discharge via concrete ramp

Buffer Storage / Longitudinal Shape / Outdoor

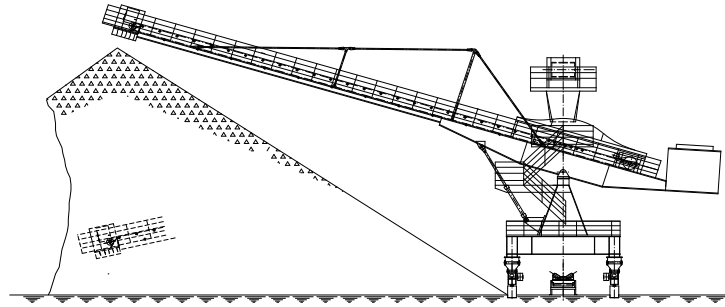


250 t/h

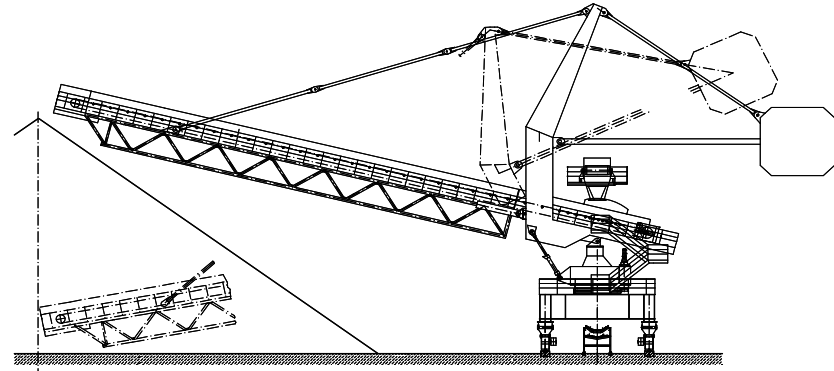
Steweag, Power Plant Mellach
AUSTRIA

Cantilever Reclaimer discharge via drag through

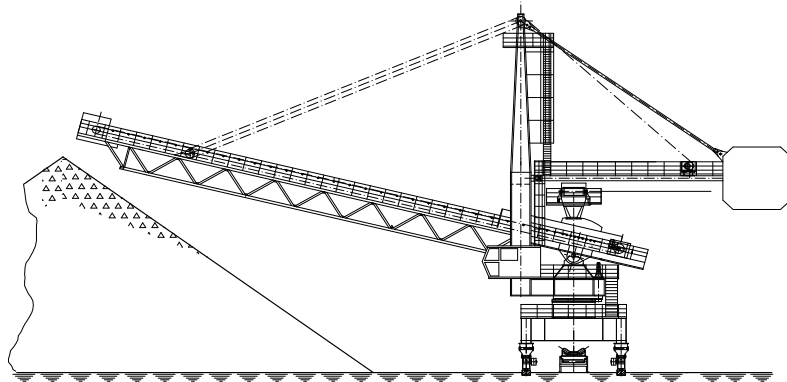
SCHADE Stacker



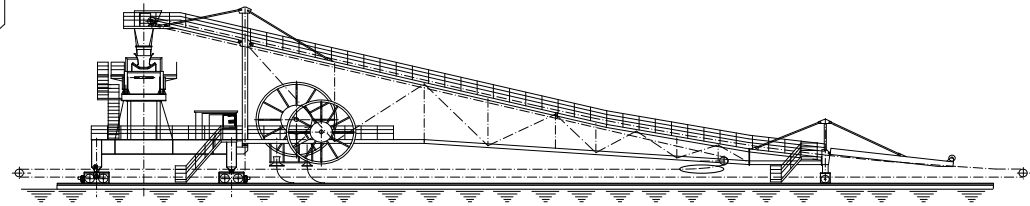
Boom type



Pylon type (hydraulic hoist)



Pylon type (rope hoist)



Tripper carriage

SCHADE Stacker / Boom type (additive storage)



Capacity: 400 t/h
Boom range: 15 m

Stacker (luffing)
Turkmenistan Cement Plant

SCHADE Stacker / Pylon type (coal handling)

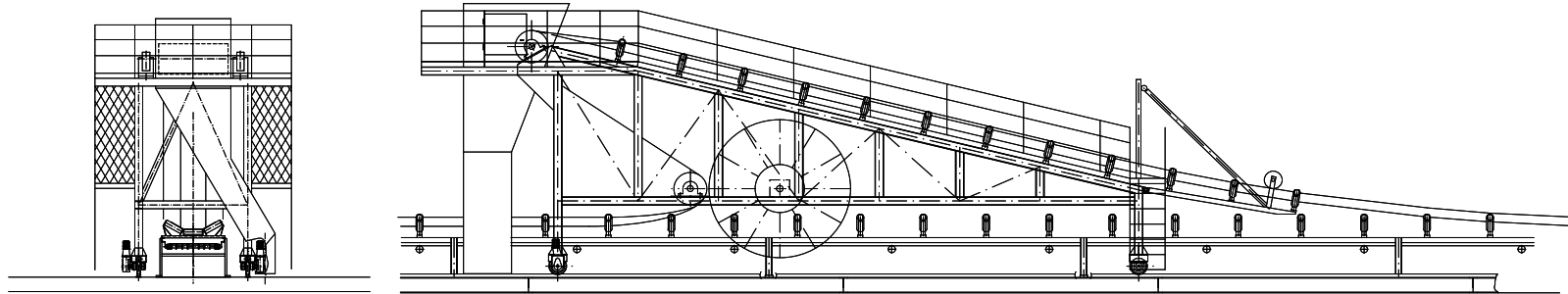
Anglo Coal, Dawson
AUSTRALIA



2400 t/h

Pylon type Slewing and luffing (hydraulic)

SCHADE Stacker / Tripper Car (coal handling)



Ha Tinh, Vietnam

19.03.2018

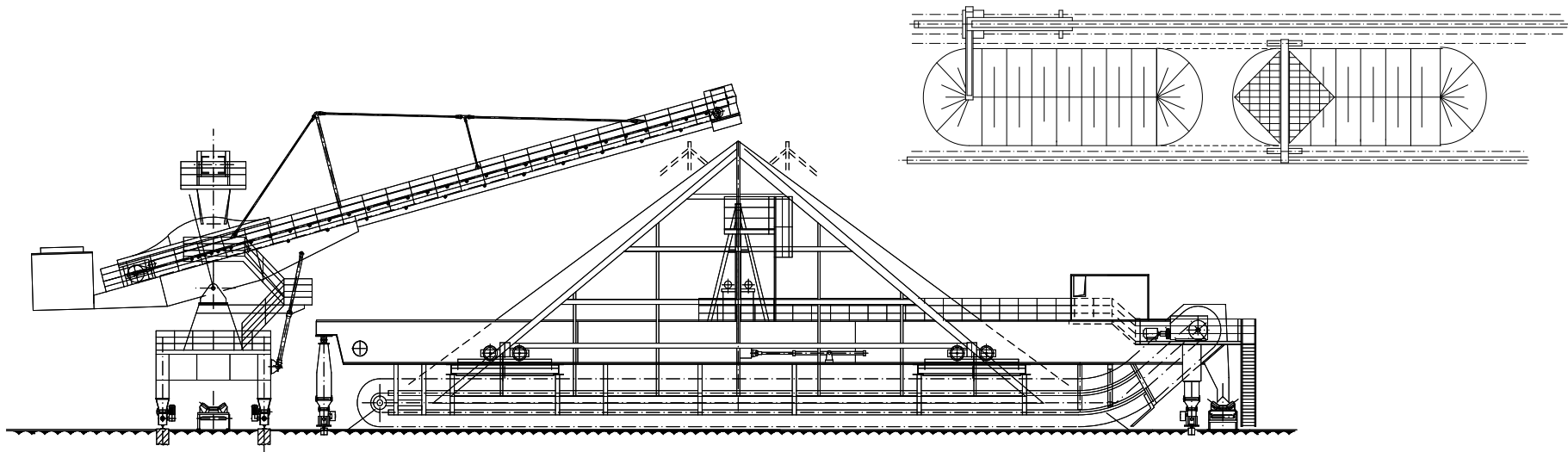
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Longitudinal Pre-blended Storage

Blending Bed Storage / Longitudinal Shape / Outdoor

Typical Storage Arrangement with Bridge type Reclaimer



- Stockpile built up by traveling / luffing Stacker in Chevron Method
- Reclaiming from the front of the pile by Bridge type Scraper Reclaimer
- Perfect homogenization and blending of segregated bulk material
- Simultaneous stacking and reclaiming by operating with two piles
- Automatic operation

Blending Bed Storage / Longitudinal Shape / Outdoor

Power Plant Gersteinwerk
GERMANY



Stacking 1000 t/h
Reclaiming 1125t/h

Blending Bed of longitudinal Shape

Blending Bed Storage / Longitudinal Shape / Indoor

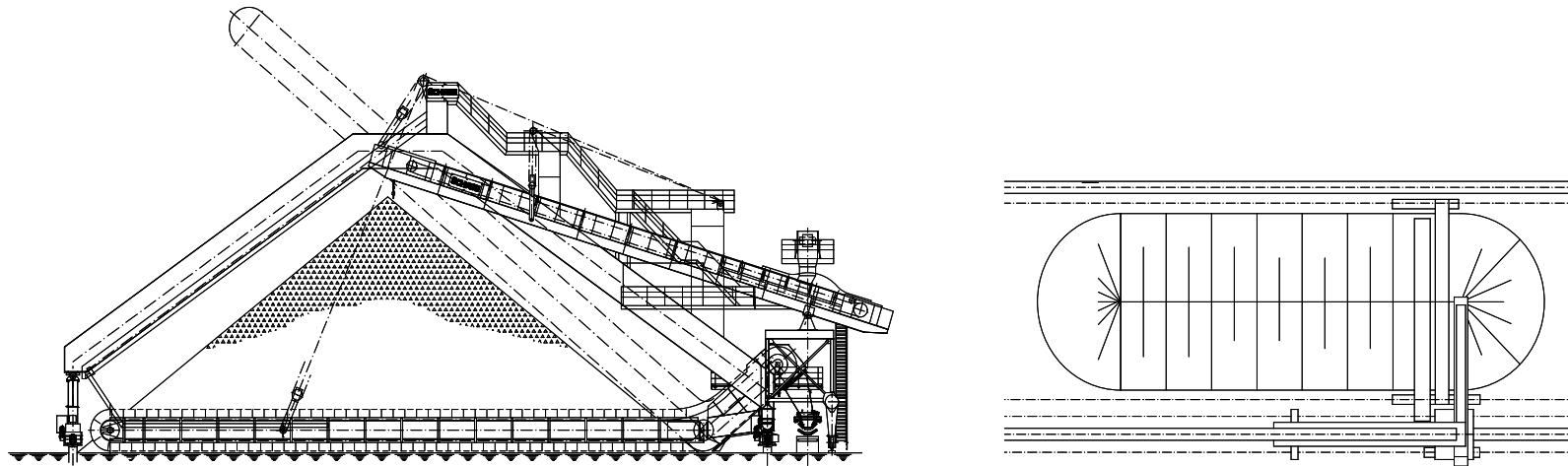


1.200 t/h

Bridge type Reclaimer for coal handling
Shin-Onoda power plant, Japan

Buffer Storage / Longitudinal Shape / Outdoor

Typical Storage Arrangement with combined Stacker / Reclaimer



- Stockpile built up by travelling and luffing Stacker
- Reclaiming from the side slope of the pile by Portal Scraper Reclaimer
- For applications where stacking and reclaiming will not occur simultaneously
- Stacking and reclaiming performed with **one machine only**
- Less space required
- Reduced Capital expenditure

Combined Stacker Reclaimer



Baoshan Iron and Steel Co.



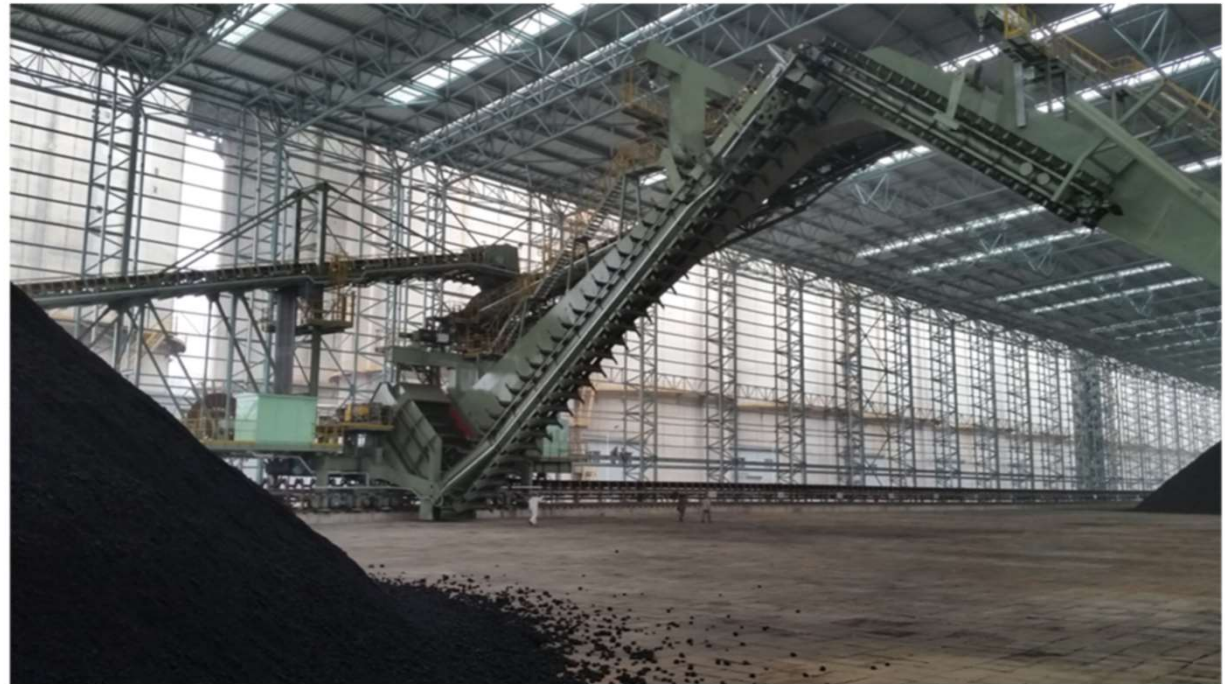
China



2018

Technical Data:

- **3.600 t/h stacking capacity**
- **1.200 t/h reclaim capacity**
coal, ore
- **51 m rail span**



Buffer Storage / Longitudinal Shape / Outdoor

World's biggest
in terms of rail span

Stacking 800 t/h
Reclaiming 350 t/h



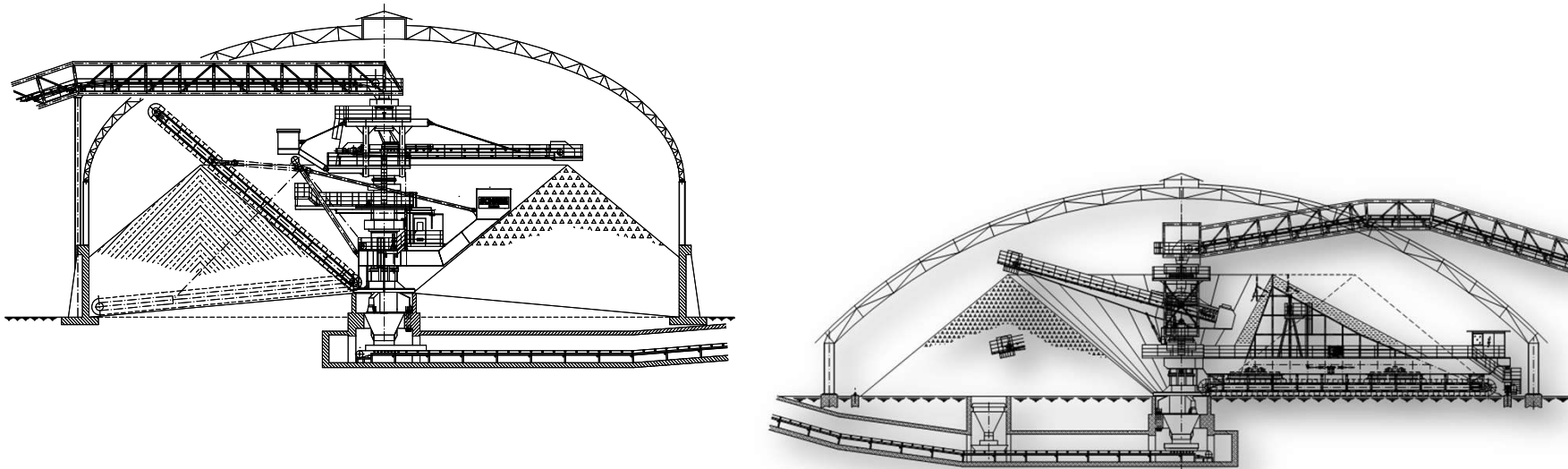
Portal Stacker / Reclaimer for salt handling
Rail Span 75m

RUSSALT, RUSSIA

Circular Buffer Storage

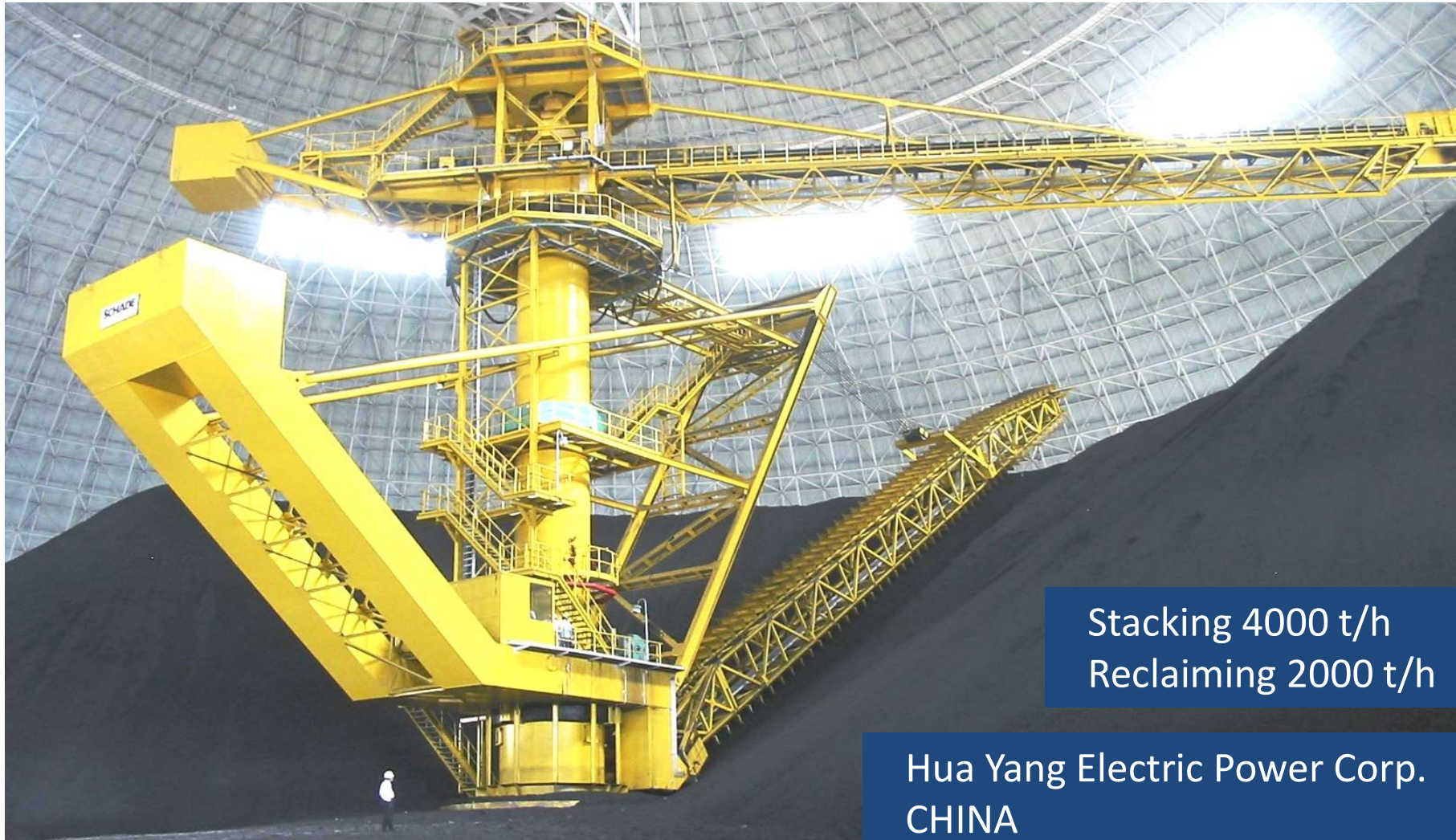
Buffer Storage / Circular Shape / Indoor

Typical Storage Arrangement with Cantilever Reclaimer



- Less space required as with storages of longitudinal shape
- Large storage capacities on small base area
- Stockpile built up by Slewing Stacker
- Reclaiming from the inner side slope of the pile by slewing / luffing scraper boom or bride reclaimer
- Automatic operation (also simultaneously)

Buffer Storage / Circular Shape / Indoor



Stacking 4000 t/h
Reclaiming 2000 t/h

Hua Yang Electric Power Corp.
CHINA

Buffer Storage / Circular Shape / Indoor

Stacking 3000 t/h
Reclaiming 1500 t/h



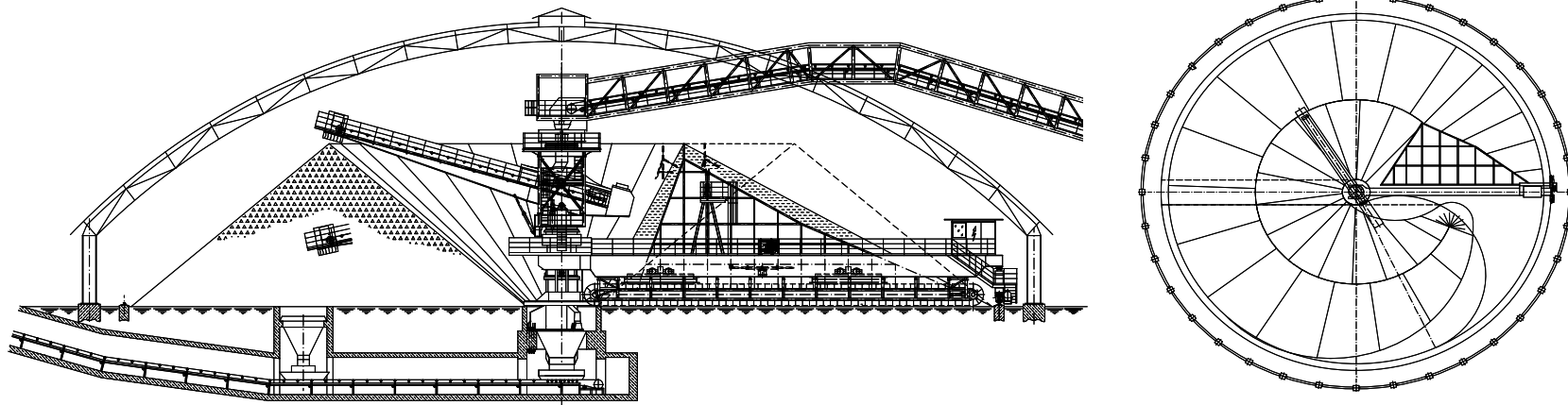
Zheneng Power Gen. Co. Ltd.
CHINA

Circular Pre-blended Storage

340
-10
300
-15
-12

Blending Bed Storage / Circular Shape / Indoor

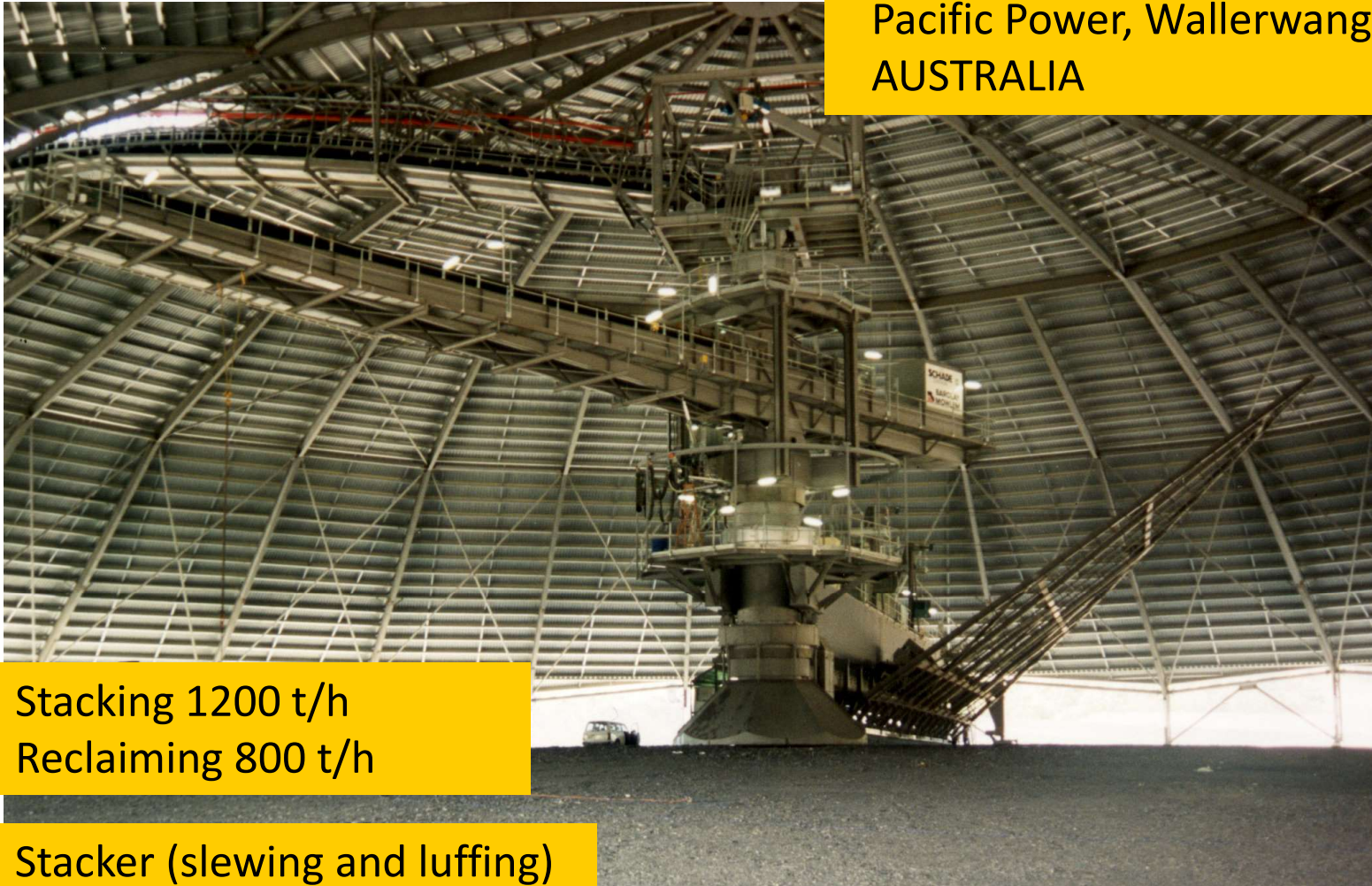
Typical Storage Arrangement with Bridge type Reclaimer



- One pile built up continuously by slewing / luffing Stacker in Chevcon Method
- Reclaiming from the front of the pile by Bridge type Scraper Reclaimer
- 360° rotation and endless pile
- Perfect homogenization and blending of segregated bulk material
- Automatic operation (also simultaneously)
- In enclosed buildings or outdoor operation

Blending Bed Storage / Circular Shape / Indoor

Pacific Power, Wallerwang,
AUSTRALIA



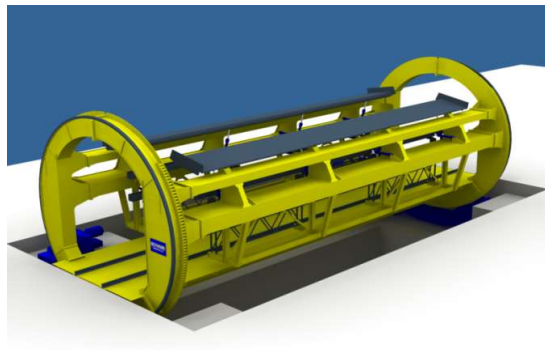
Stacking 1200 t/h
Reclaiming 800 t/h

Stacker (slewing and luffing)
With bridge reclaimer

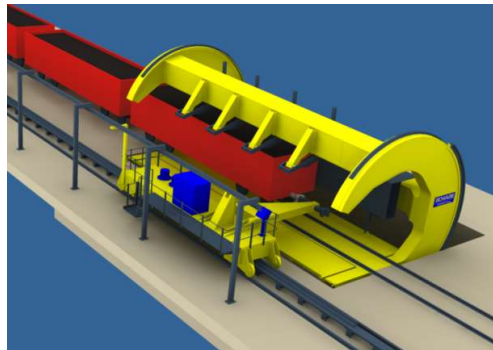
Wagon Unloading Systems

Wagon Tippler Types

Schade Wagon Tipplers can be considered as comprising three main types or design:



1. 'O' Frame or Rotary

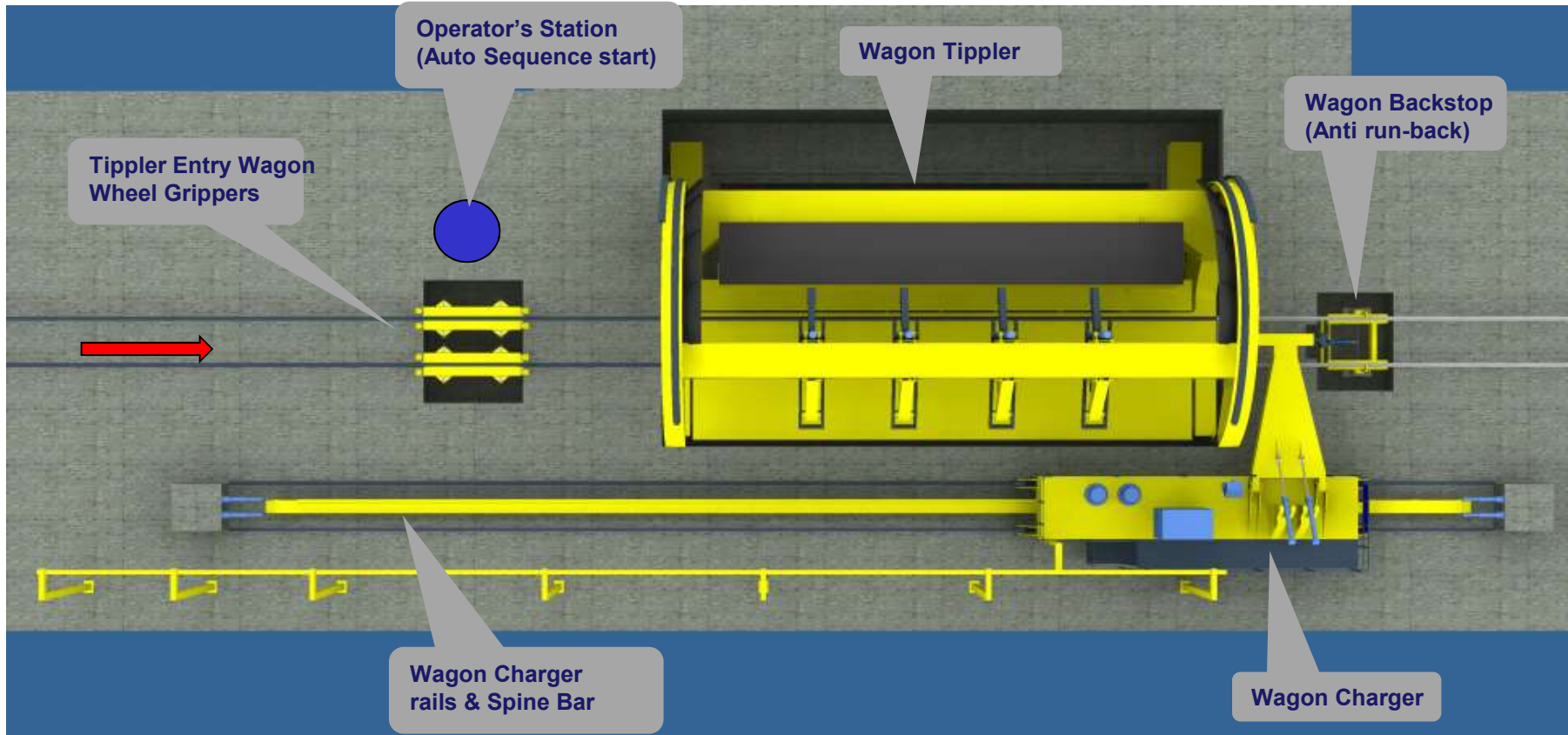


2. 'C' Frame or Crescent



3. 'Pivot' Frame or side tipping

Typical Wagon Unloading System / Plan View



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**Thank you for your
kind attention!**