

# 扬州机誉机电技术工程有限公司

Yangzhou FusionBMH Engineering Co.,Ltd



## Bulk Material Handling System





Yangzhou FusionBMH Engineering Co.,Ltd specializes in the complete design, manufacture, installation and commissioning of bulk material handling systems. FusionBMH designs and manufactures bulk material handling systems and equipments for cement, power generation, mining, chemical, port and other industries.

FusionBMH can provide complete systems starting at the conceptual phase, and proceeding through the initial investigation, budgeting, engineering, design, manufacturing, erection and commissioning phases. FusionBMH has specialized capability to supply innovative, effective, reliable and maintainable bulk material handling system. FusionBMH has the flexibility to work with our clients on many levels:

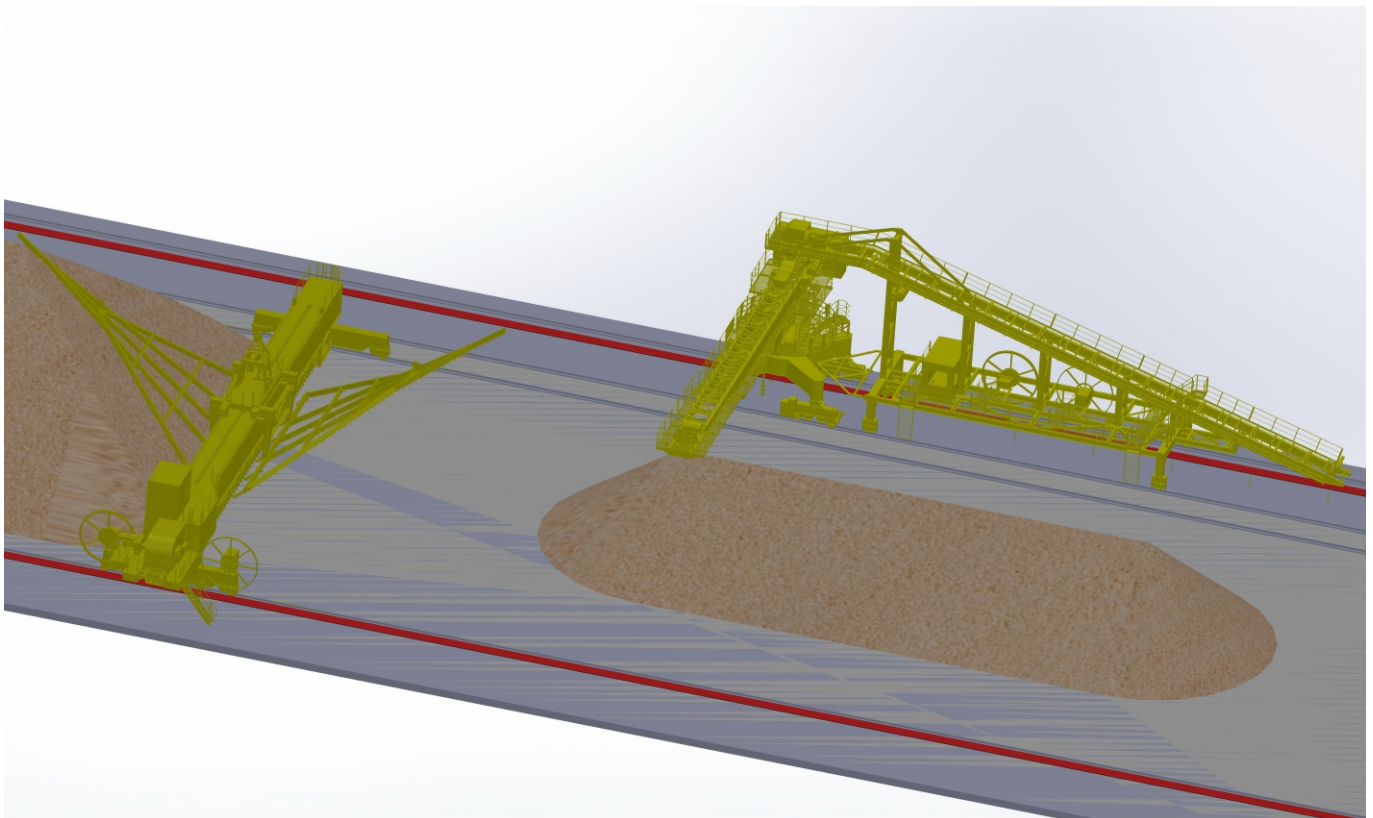
- Complete system design, furnish, construct and commissioning on a turnkey approach
- Complete system design, furnish and commissioning
- Furnish the equipment for system that have been designed by our client or by our client's engineer

With passion, perseverance, credibility, technical know-how and the dedication to satisfy customers' demands, FusionBMH provides worldwide clients with quality solutions, equipments and services.

## Stacker and Bridge Scraper Reclaimer

The maximum blending effect is achieved with the bridge scraper reclaimer combined with the relevant chevron stacking method.

The longitudinal traveling luffing stacker is used to build longitudinal stockpiles with chevron stacking method. According to chevron method material received from the incoming belt conveyor is deposited by the stacker moving to and fro over the centerline of the pile. To ensure proper blending effect the chevron pile must be reclaimed from the entire cross section of the pile by bridge scraper reclaimer. The sweeping movement of raking harrow mounted on the reclaimer bridge cause the material to slide down to the pile base. A scraper chain system conveys the material to the outgoing belt conveyor.



## Stacker and Bridge Scraper Reclaimer



### Advantage

- High homogenizing effect
- Store capacity can easily be expanded

### Disadvantage

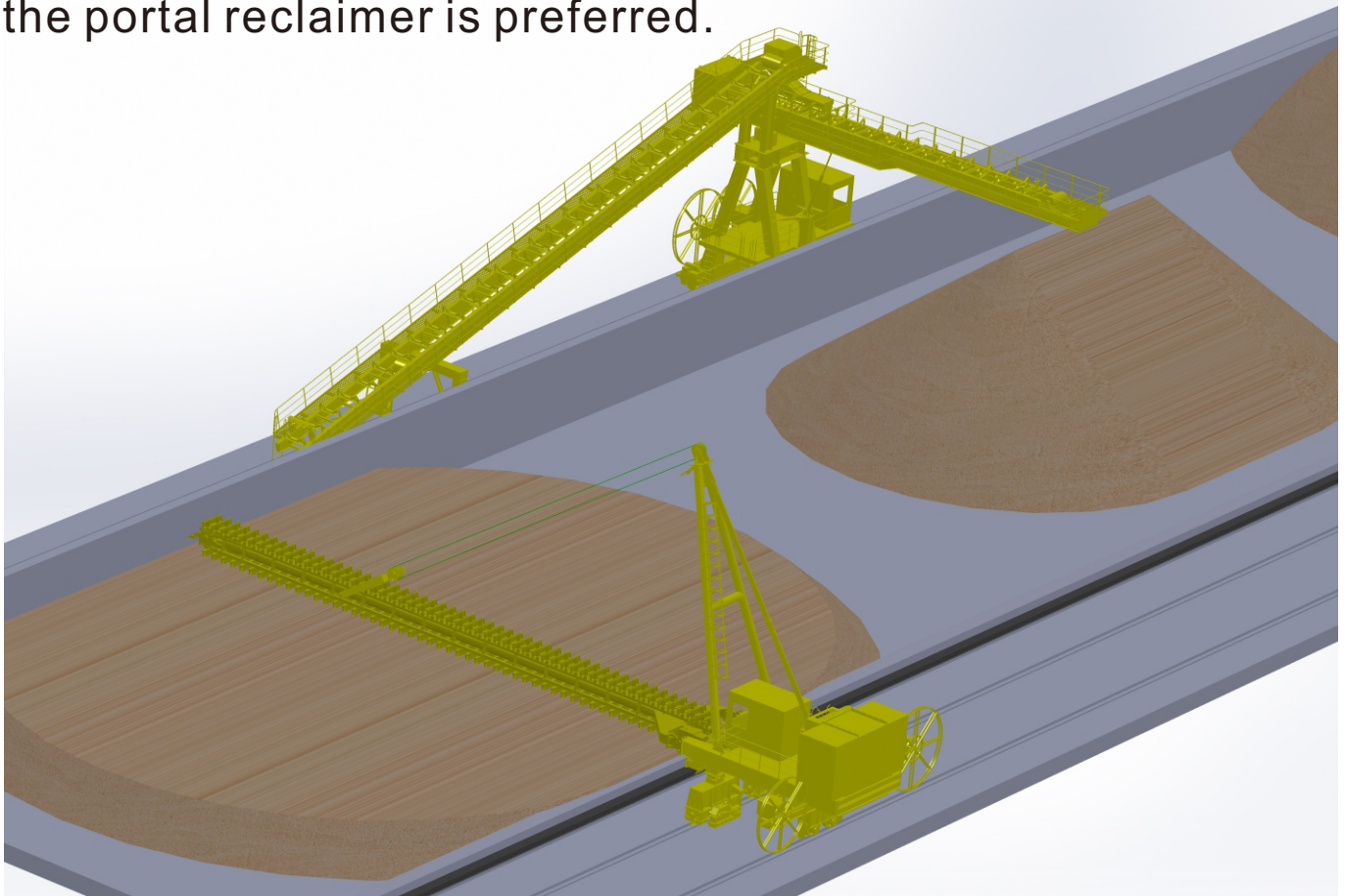
- Bridge reclaimers reclaim material from the end face of the stockpile and therefore have the disadvantage of being trapped between stockpiles and must completely reclaim one pile before moving to the next.



### Stacker and Side Scraper Reclaimer

When homogenizing isn't a criteria, side scraper reclaimer is used to reclaim material from the side face of the stockpile. The operator will use the reclaimer to trim the side face of the stockpile into an even angle prior to automatic operation. The reclaimer boom will then be lowered automatically by a preset depth of cut and the reclaimer will move along the pile scraping the material into the outgoing conveyor. The capacity of the reclaimer can be adjusted by variable travel speed control or changing the depth of cut.

For the non-blending stockpile the side scraper reclaimer is the most economical solution for small stockpile up to 30m. For the stockpile which width is larger than 30 meters the portal reclaimer is preferred.



## Stacker and Side Scraper Reclaimer



### Advantage

- Suitable for all kinds of materials including sticky material
- Different types of material can be stacked and reclaimed from separate piles
- Store capacity can easily be expanded
- Optimum utilization of building when using overhead tripper

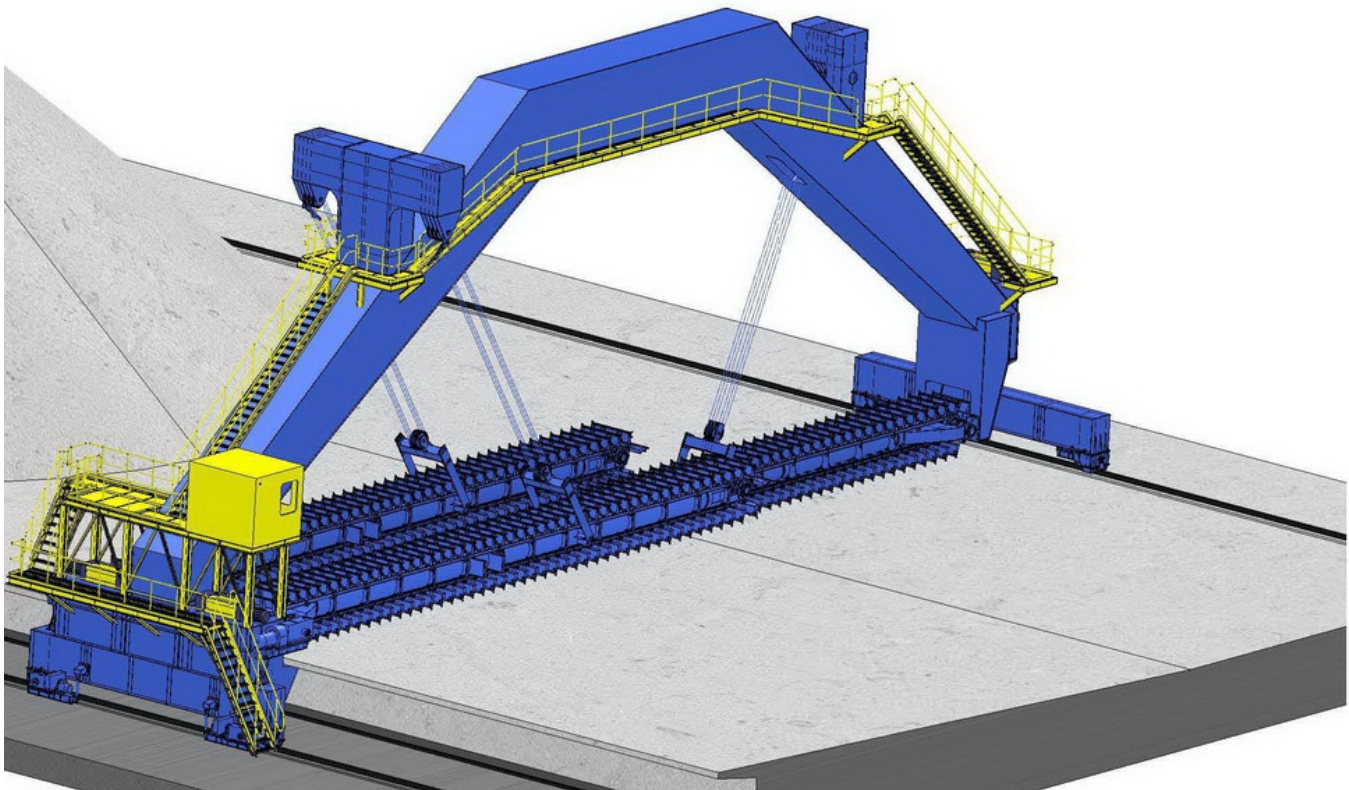
### Disadvantage

- Limited blending effect



## Stacker and Portal Scraper Reclaimer

For the non-blending stockpile which width is larger than 30m the portal scraper reclaimer is the most economical solution. The material enters the store on a rubber belt conveyor either running along one side of the store or supported by a frame structure above the pile. The portal scraper reclaimer consists of a portal frame with one or two scraper chain systems. The portal scraper reclaimer with one scraper chain system is suitable for open store and the portal scraper reclaimer with two scraper chain systems is suitable for covered store. The secondary scraper system lift the material to the crest of the pile, feeding the primary scraper chain system. The primary scraper chain system conveys the material to the outgoing belt conveyor.



## Stacker and Portal Scraper Reclaimer

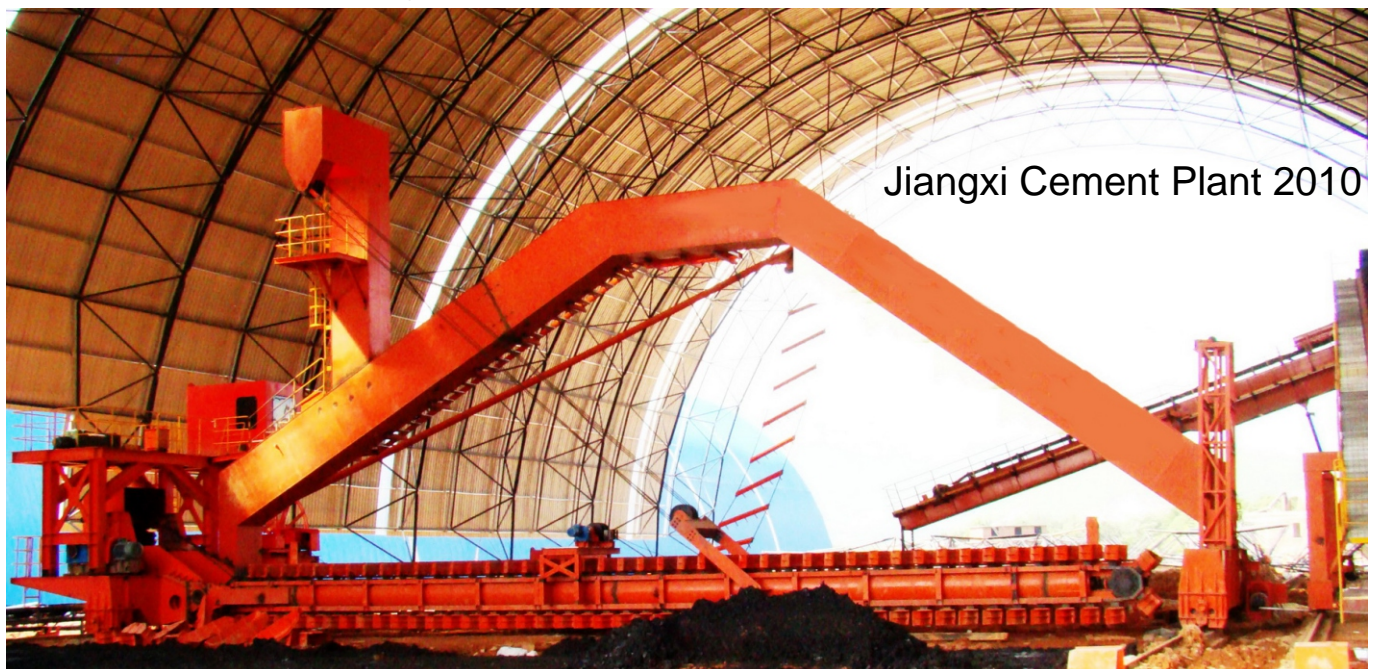


### Advantage

- Suitable for all kinds of materials including sticky material
- Different types of material can be stacked and reclaimed from separate piles
- Store capacity can easily be expanded
- Optimum utilization of building when using overhead tripper

### Disadvantage

- Limited blending effect

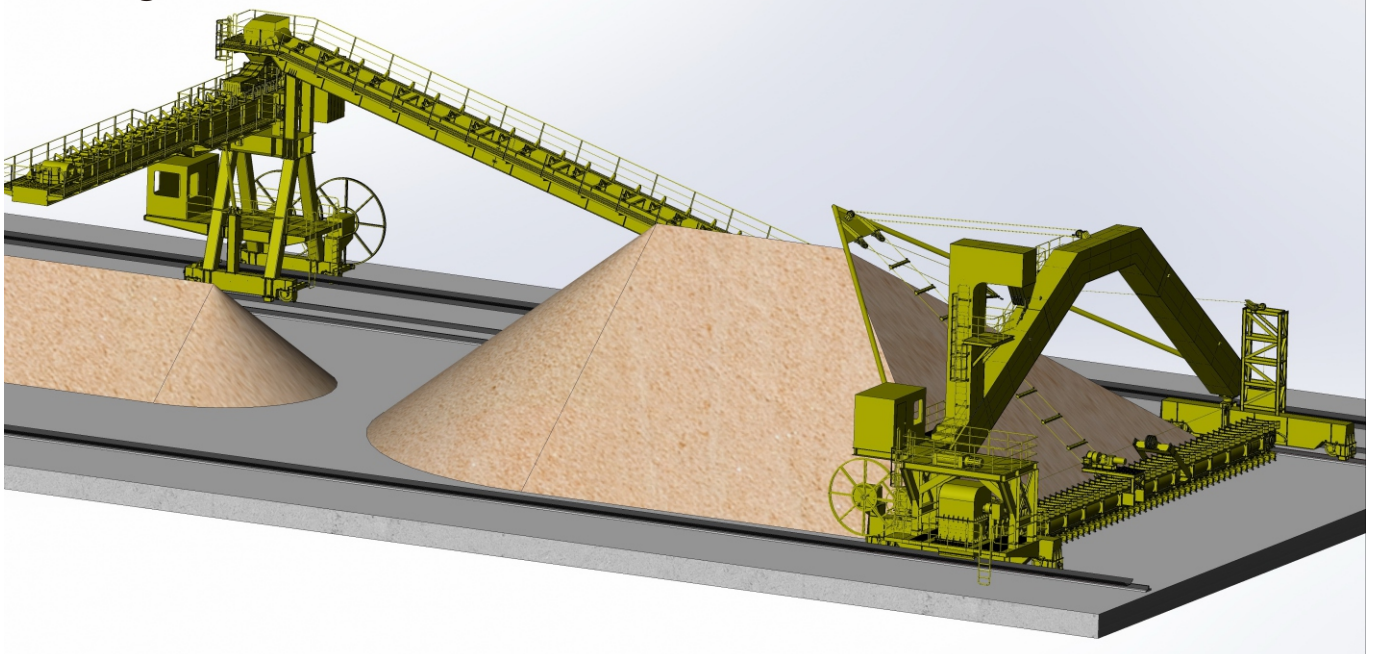




## Stacker and Compound Portal Scraper Reclaimer

The compound portal scraper reclaimer consists of a portal structure with a liftable scraper boom as for the portal reclaimer. On one side of the portal an inverted vee harrow frame is hinged with the portal and positioned at the correct angle by a winch. The frame supports the upper end of two parallel wire ropes with light scrapers mounted between them. The lower end of the wire rope is connected with the shuttle mounted on the scraper boom. The back and forth movement of the shuttle drags the wire harrow like a wiper across the end face of the stockpile. As a result the compound portal reclaimer ensures good blending effect by reclaiming from the full end face of the chevron stacked stockpile.

The compound portal scraper reclaimer combines the benefits of the bridge scraper reclaimer and the portal scraper reclaimer. It has the advantage of reclaiming and blending several stockpiles of various bulk materials arranged in line.



## Stacker and Compound Portal Scraper Reclaimer

### Advantage

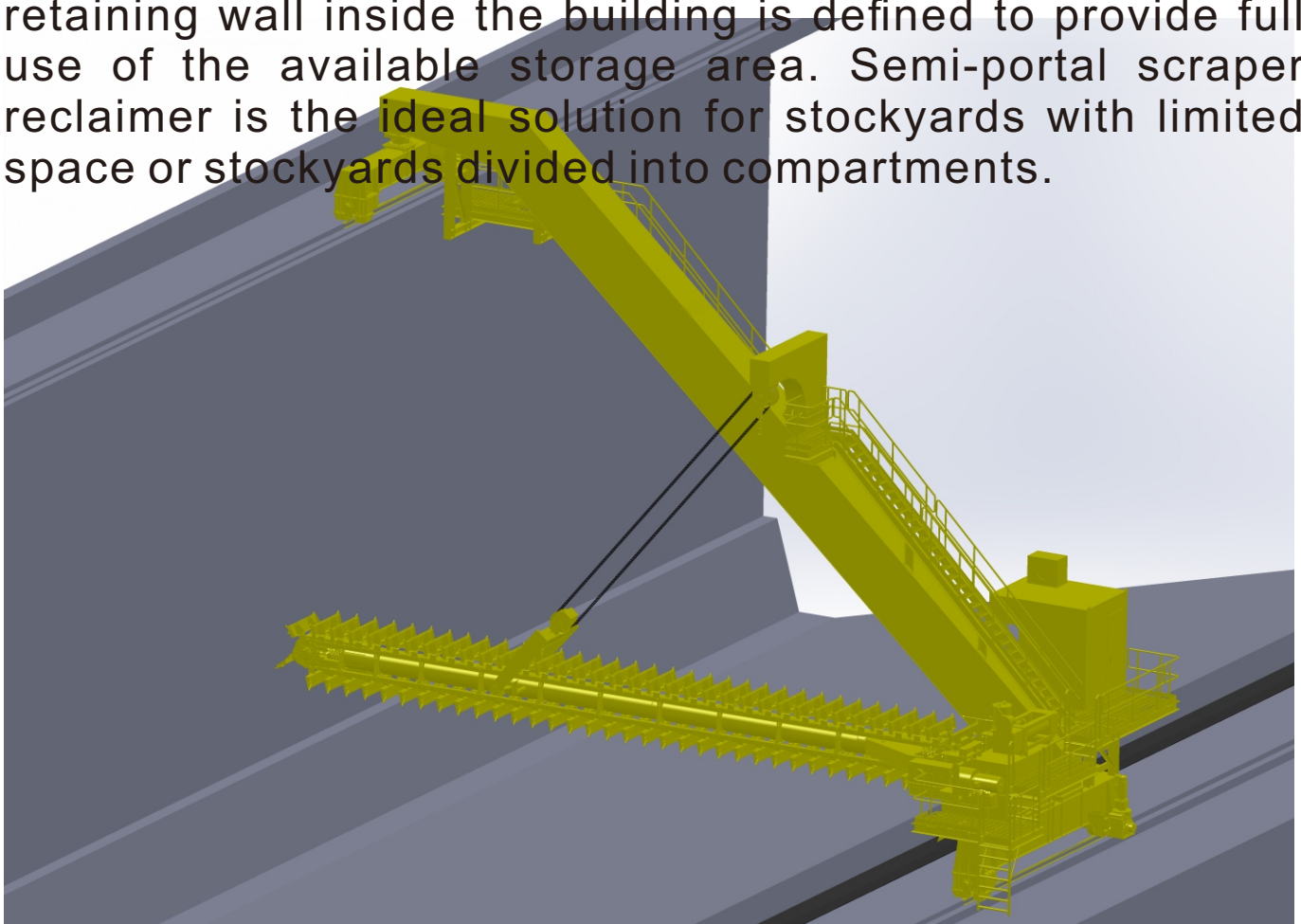
- Suitable for all kinds of materials including sticky material
- Different types of material can be stacked and reclaimed from separate piles
- Store capacity can easily be expanded
- Optimum utilization of building when using overhead tripper
- Low initial cost
- High blending effect



### Tripper and Semi-portal Scraper Reclaimer

The semi-portal scraper reclaimer is designed for operation in a closed storage area which is divided by a longitudinal wall and in the center with box walls as well. The material enters the store on a belt conveyor supported by a frame structure above the pile and it's discharged into the store by using a tripper. While reclaimer running along the side of the stockpile the material is reclaimed by the scraper chain system and in a constant flow transported onto an outgoing belt conveyor.

For indoor operation, in most cases the best ration between the building section and the stockpile section is achieved with a semi-portal scraper reclaimer. The height of the retaining wall inside the building is defined to provide full use of the available storage area. Semi-portal scraper reclaimer is the ideal solution for stockyards with limited space or stockyards divided into compartments.



## Tripper and Semi-portal Scraper Reclaimer

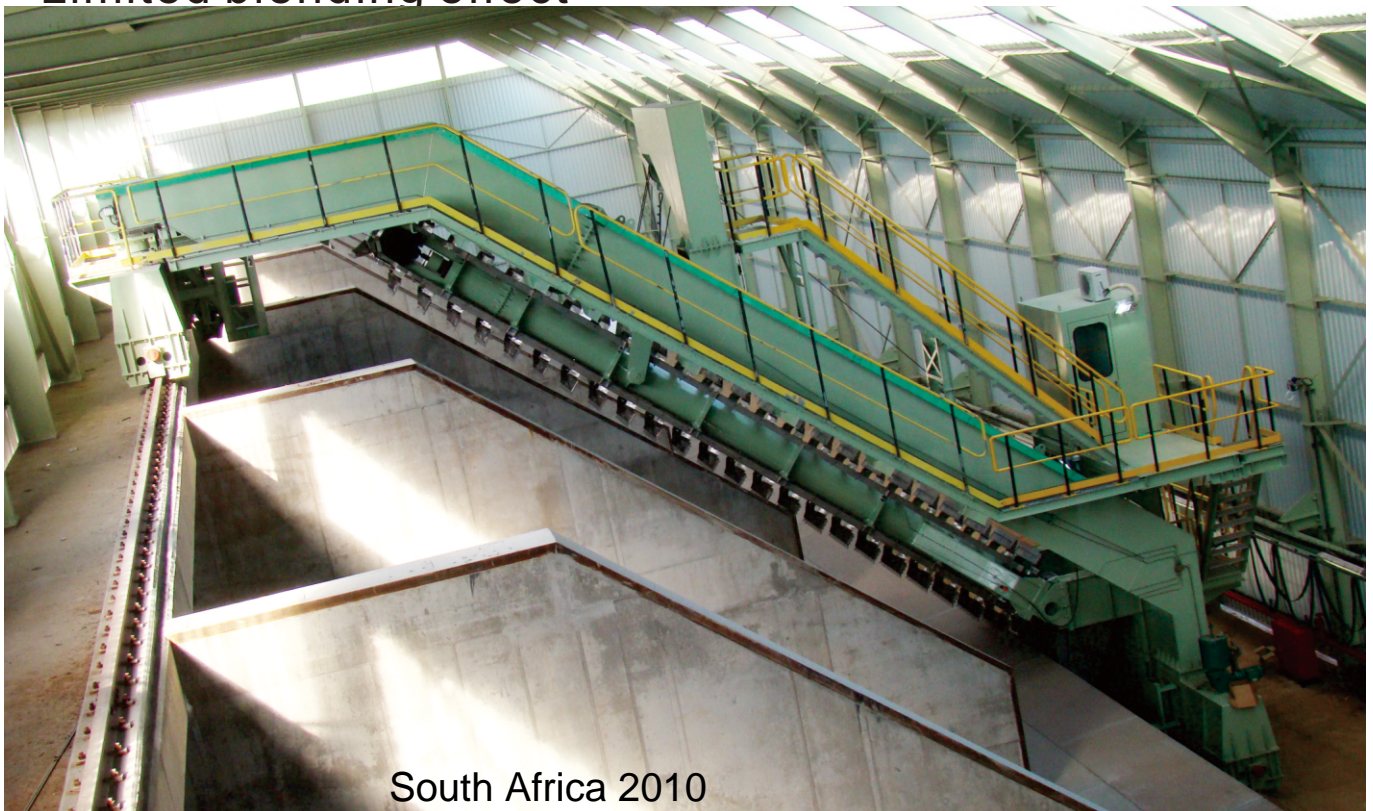


### Advantage

- Suitable for all kinds of materials including sticky material
- Different types of material can be stacked and reclaimed from separate piles
- Store capacity can easily be expanded
- Optimum utilization of building
- Low initial cost

### Disadvantage

- Limited blending effect

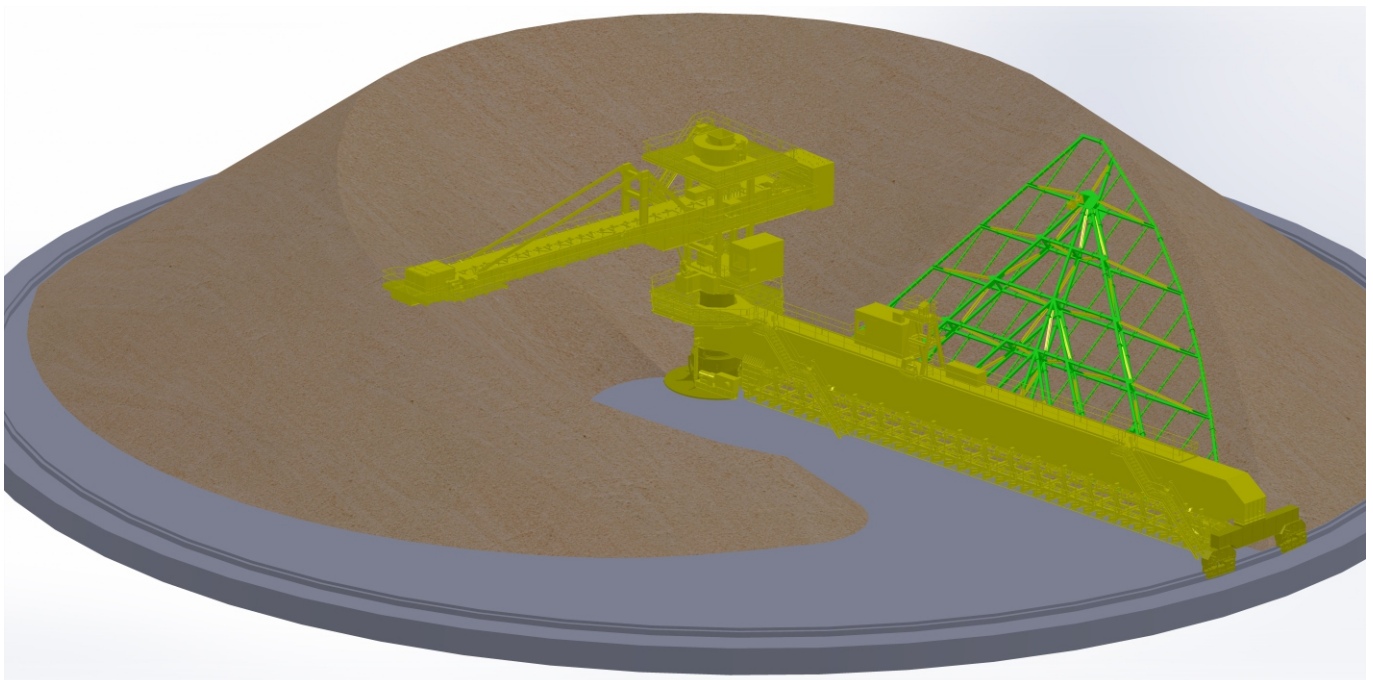


South Africa 2010

### Circular Stacker Bridge Scraper Reclaimer

The circular blending system comprises a luffing/slewing stacker and a bridge type reclaimer rotating around central column. Continuous chevron stacking method was developed for circular blending system.

The stacker boom slews back and forth over the curved stockpile ridge in a fan shape arc-typically  $120^\circ$  to ensure appropriate homogenization. At the same time the stacker boom luffs to keep a minimum distance above the crest of the pile for reducing dust emission. Reclaiming at the other end of the pile is effected by a bridge reclaimer working parallel to a radius line. A raking harrow is mounted on the bridge reclaimer which rotates anticlockwise around the center column. The sweeping movement of the harrow system cause the material to slide to the base, where the chain system then conveys it to the centrally placed outlet hopper. The homogenized material leaves the store by an underground belt conveyor below the outlet hopper.



## Circular Stacker Bridge Scraper Reclaimer



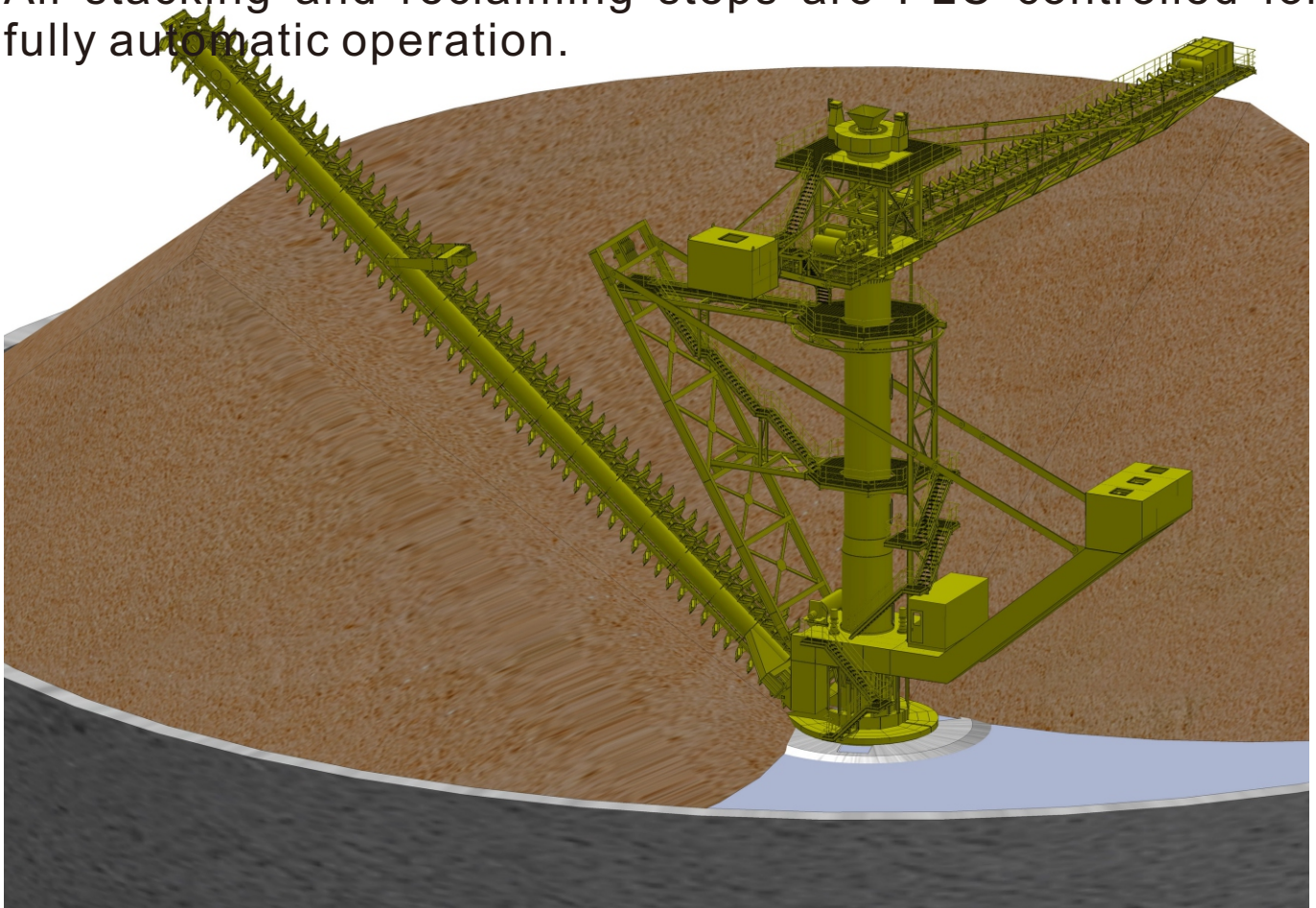
### Advantage

- High continuous homogenizing effect
- No end cone problems
- Optimum utilization of space
- Fully automatic continuous operation (no change of pile)



### Circular Stacker Side Scraper Reclaimer

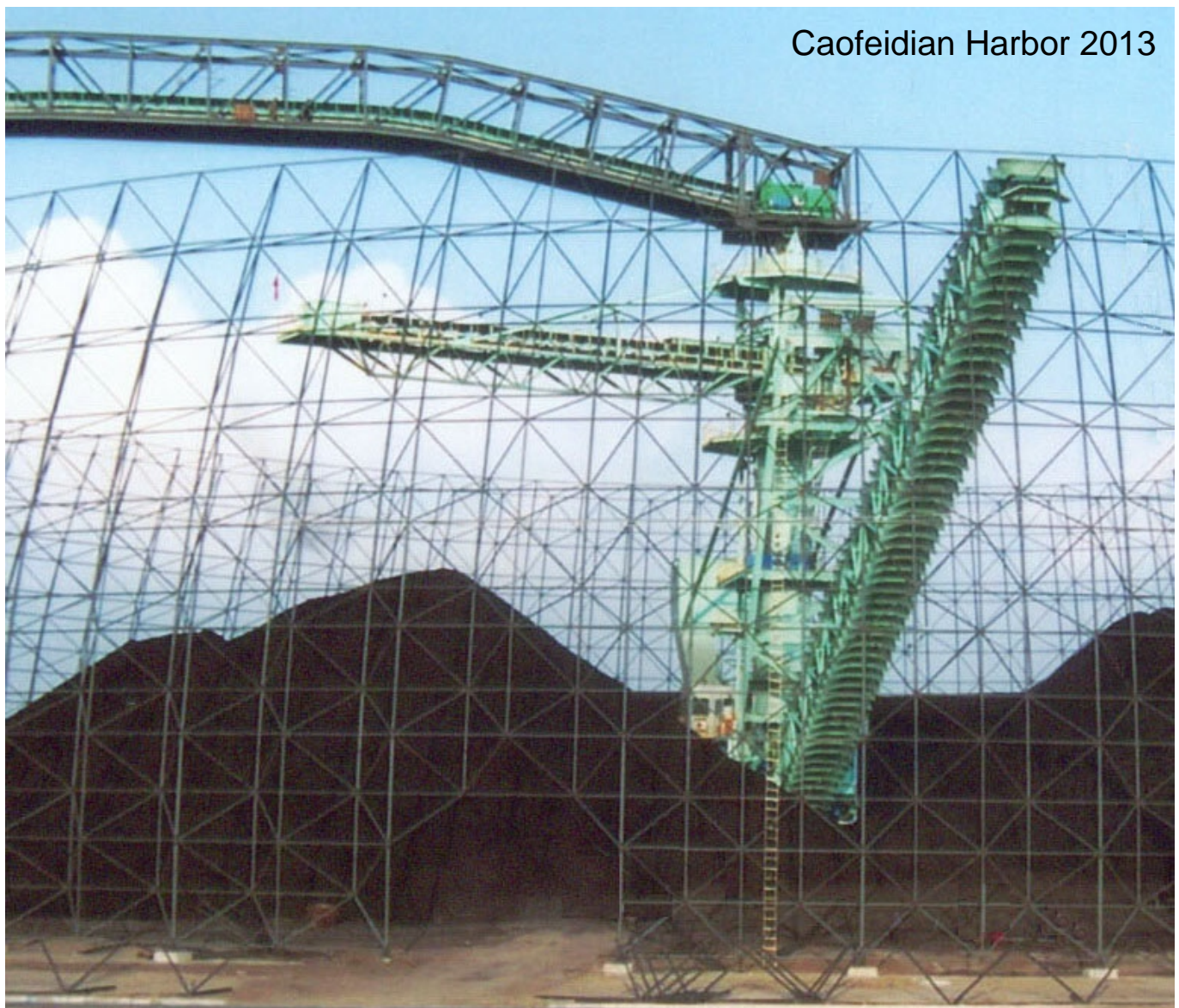
The circular stacker side scraper reclaimer meets the need for system requiring less space for large storage quantities. In circular stockpiles the pile is built up automatically at one end by means of a slewing stacker using the cone-shell stacking method for 360 degrees of rotation. The stacker could be luffing or non-luffing type. Reclaiming is made at the other end by a slewing side scraper reclaimer. The scraper boom advances in a circular movement scraping the inner slope of the pile and conveys the material into a central hopper located under the central column. The side stacker/reclaimer allows for simultaneous stacking and reclaiming and both functions operate independently. All stacking and reclaiming steps are PLC controlled for fully automatic operation.



### Circular Stackers Side Scraper Reclaimer

#### Advantage

- Maximum storage capacity on the minimized space
- Fully automatic operation
- The circular storage with covered doom can meet the stringent environment regulations

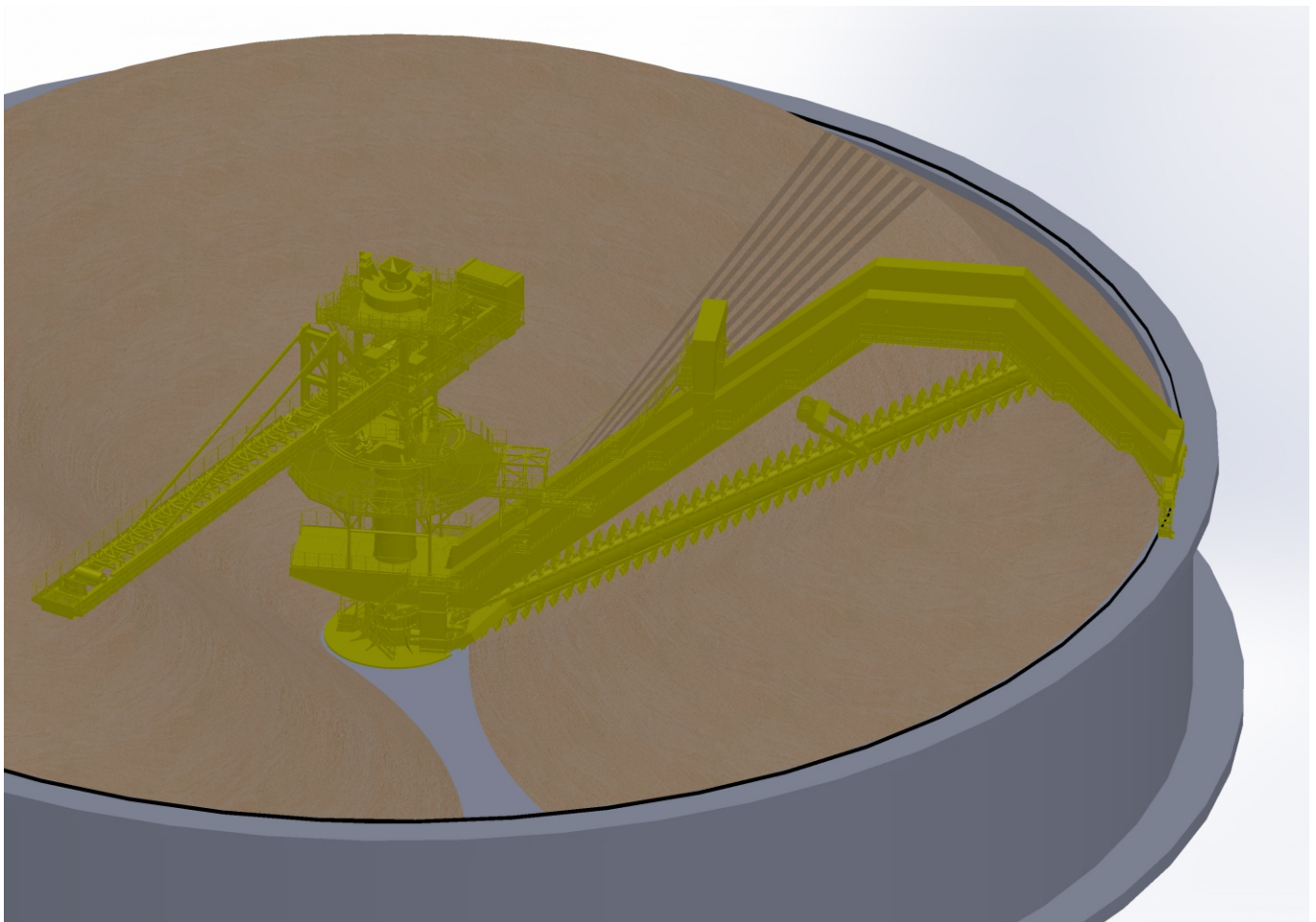




### Circular Stacker Portal Scraper Reclaimer

Depending on the application, circular storages with ring walls are also built with portal or semi-portal scraper reclaimers. If equipped with ring walls circular storages offer a maximum of storage capacity on a minimized space.

The circular stacker portal scraper reclaimer comprises a slewing stacker and a portal scraper reclaimer rotating around central column. Feeding of the storage as per the cone-shell method is being done by the slewing stacker while reclaiming is achieved from the inner slope of the pile by a portal reclaimer. The scraper blades guide the material to the central chute.



## Circular Stacker Portal Scraper Reclaimer

Ordos SinoCoal Plant 2010



### Advantage

- Large storage quantity in the limited space
- Fully automatic operation
- The circular storage with covered doom can meet the stringent environment regulations

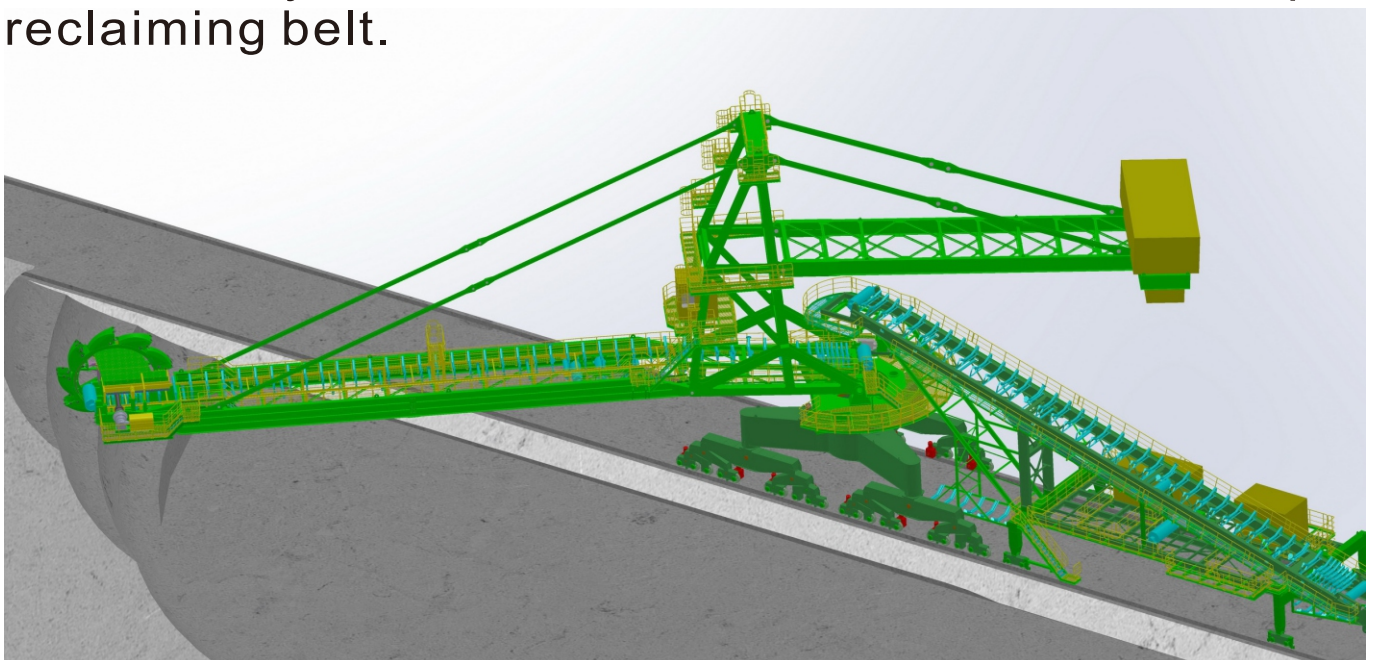


Ordos SinoCoal Plant 2010

## Bucket Wheel Stacker Reclaimer

Bucket wheel reclaimers or combined bucket wheel stacker reclaimers are used for high capacity stacking and reclaiming of bulk materials. Bucket wheel stacker reclaimers are stacker and reclaimer combined in one machine with bucket wheel boom. It offers a possibility for selective stacking and reclaiming of materials on both sides of the track. The minimization of the total number of machines on a stockyard as well as the reduction of conveyors and trails constitute a great advantage of the stacker reclaimer.

When bucket wheel stacker reclaimer works as stacker the belt conveyor in the boom conveys the material received from the incoming belt conveyor to the stockpile. When it works as a reclaimer, as the bucket wheel revolves material is scooped up by the buckets and deposited onto the belt conveyor running in the boom. Then the belt conveyor in the boom transfers the material by means of a chute onto the stockpile reclaiming belt.



## Bucket Wheel Stacker Reclaimer

### Advantage

- Combination of stacker and reclaimer in one unit
- Stacking and reclaiming materials on both side of the track
- Low capital cost
- High stacking and reclaiming capacity
- High efficient and low consuming energy

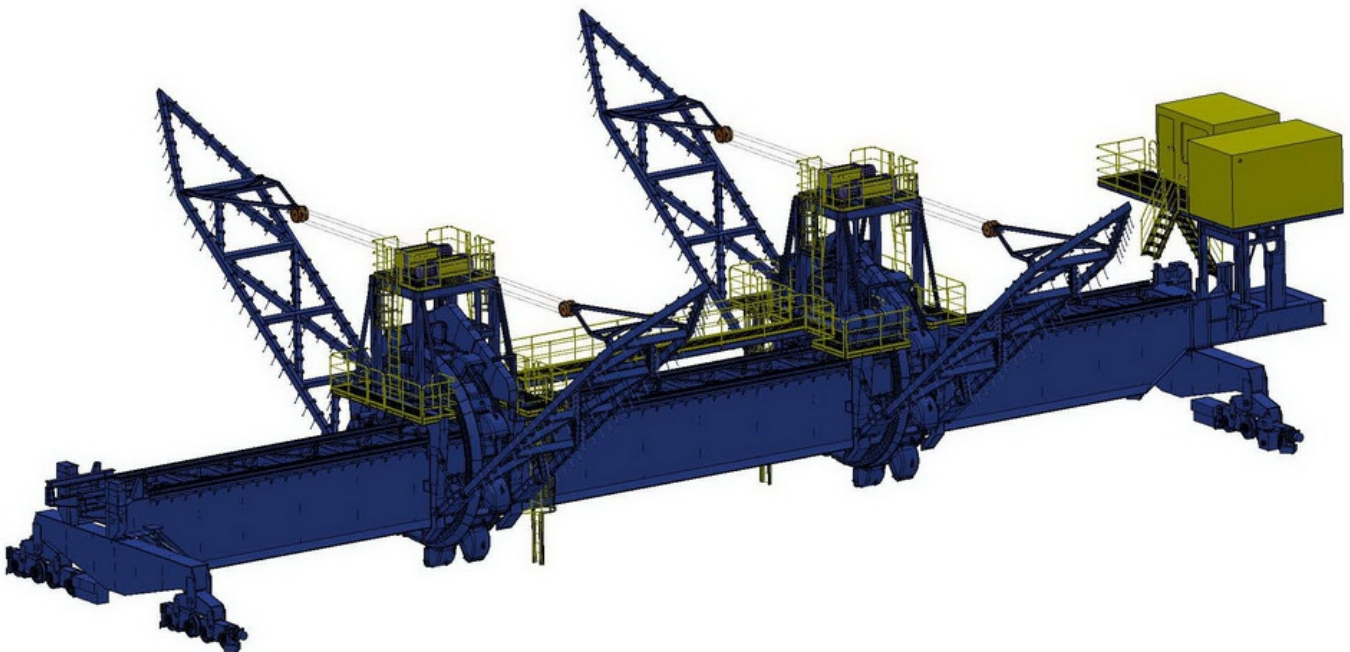


Zhangjiagang Steel Plant 2012

## Bridge Type Bucket Wheel Reclaimer

Bridge type bucket wheel reclaimers are ideally suited for applications that require high storage width, high reclaiming rates and high homogenization levels.

Bridge type bucket wheel reclaimer utilizes one or two bucket wheel trolleys with bucket wheel on a bridge which travels alongside the stockpile to reclaim material across the face of the stockpile. The bucket wheel trolley travels to and fro along the bridge. Each bucket wheel is fitted with an oscillating harrow. The harrows are designed to direct the flow of material to the base of the pile, where it is scooped up by the buckets and discharged onto a transverse belt conveyor which deliver it to the outgoing conveyor running alongside the stockpile.



## Bridge Type Bucket Wheel Reclaimer



### Advantage

- Homogenizing effect
- High reclaiming capacity

### Disadvantage

- Bridge reclaimers reclaim material from the end face of the stockpile and therefore have the disadvantage of being trapped between stockpiles and must completely reclaim one pile before moving to the next.



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