Superior Engineering
Superior Performance

BIOMASS engineering & equipment

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PRODUCTS & SERVICES

CATALOG

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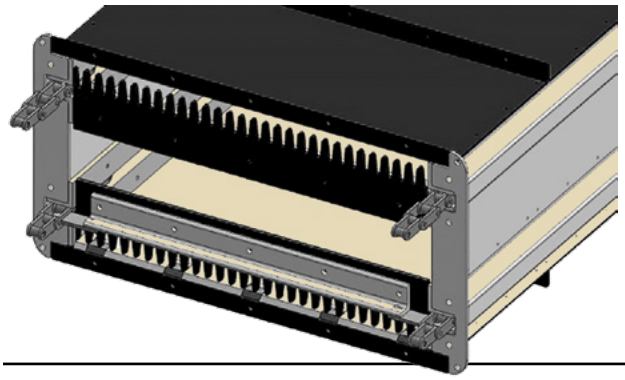
SMART CONVEYOR™

Designed for versatility, SMART Conveyors™ are available in three series with variable volumetric and load capacities. Conveyor widths range from 18-72". All are available with a variety of finishes and components. They allow for multiple inlets and outlets and can be configured as top-drag or bottom-drag units. Ash-handling configurations are also available.

01 UNIQUE CAPABILITIES

- High inclines up to vertical
- Change curve wear strips in just minutes (S Series)
- Modular construction allows for reconfiguration
- Replace sprockets and wear items without breaking the chain
- Relatively little power required for high volumes

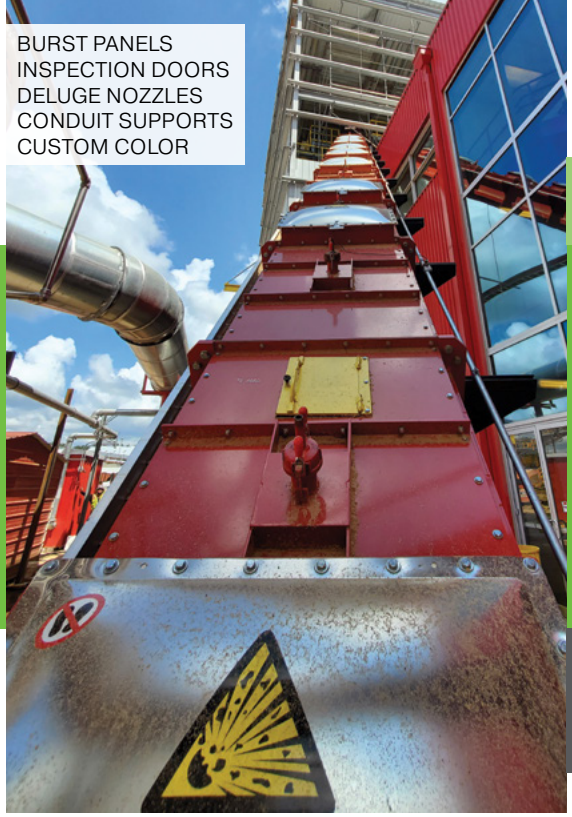


02 SUPERIOR DESIGN

- Paddles don't touch floors or sidewalls
- Chains run outside the material path
- Bolted construction
- Metal-on-metal contact occurs only at the sprockets
- Requires only one structural support every 40'
- Enclosed design contains dust
- Standard parts for easier maintenance
- Split head for faster maintenance (M/T Series)
- Multiple fail points to protect critical components

03 BUILT-IN SAFETY

- Fully enclosed / "dust tight"
- Shaft-mounted gearboxes with direct drive
- Available with automatic deluge with spark detection, explosion panels, and flameless explosion vents
- Meets NFPA standards for explosion hazards



BURST PANELS
INSPECTION DOORS
DELUGE NOZZLES
CONDUIT SUPPORTS
CUSTOM COLOR

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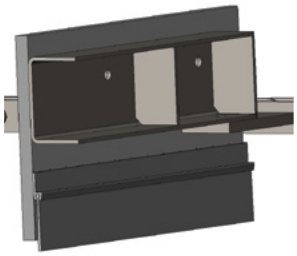
CONVEYOR OPTIONS

MORE **FUNCTIONS** | MORE **OPTIONS** | MORE **APPLICATIONS**

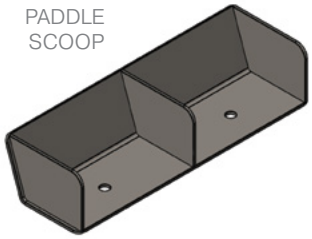
01 MORE FUNCTIONS

- Extended tops
- Tail scoops
- Paddle scoops
- Slide gates (electric or pneumatic)
- Sweep brushes
- Conduit mounts
- Manual sample ports
- Mid-floors

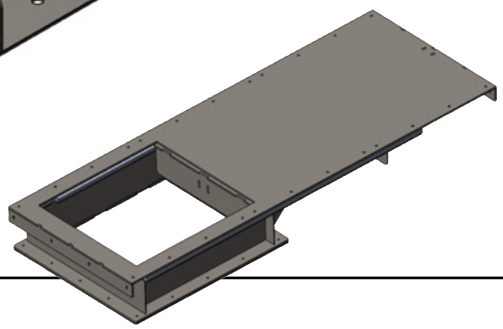
MANUAL SAMPLE PORT



PADDLE BRUSH



PADDLE SCOOP



SLIDE GATE

02 MORE OPTIONS

- Flop and diversion gates
- Explosion burst panels
- Flameless vents
- Automatic deluge with spark detection
- Sealed inspection doors
- Sealed access doors
- UHMW, Tri-Braze, and AR steel floor liners
- Powder coat, galvanized, and stainless steel finishes
- Custom colors

GALVANIZED FINISH

EXTENDED HOOD MID-FLOOR

FLOP GATE

03 MORE APPLICATIONS

- Stainless steel ash conveyor
- Single or multiple curves
- Top- or bottom-drag
- Three series with differing heights and capacities: S (standard), M (medium), and T (tall)

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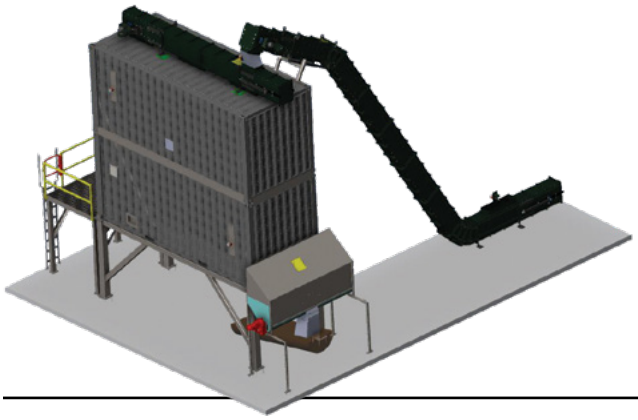
SMART CONTAINER

VERSATILE **DESIGN** | DISTINCT **VALUE** | SIMPLE **OPERATION**

01 VERSATILE DESIGN

- Available in 20' or 40' lengths
- 2,300 ft^3 base capacity (40')
- 1,025 ft^3 base capacity (20')
- Hydraulics require no sensors or limit switches
- Accurate discharge rate without large surges
- Can be made “dust tight”
- First-in, first-out material recovery



02 DISTINCT VALUE

STATIONARY CONFIGURATIONS

- Can be placed side-by-side for material segregation, blending, or redundancy
- Stack up to three units tall
- Installs quickly, often in 2-3 days
- Minimal civil work required
- Vertical walls resist bridging
- Available with devices to mitigate fires and explosions
- Available with closed or open top

03 SIMPLE OPERATION

MOBILE OPTION

- Use for on-site storage, transport, and feeding
- Sits on flatbed trailer
- Ready to operate upon delivery
- “No mess” receiving stations available

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SCREW-FEED BINS

NUMEROUS **APPLICATIONS** | SMART **FEATURES** | PROVEN **RELIABILITY**

METERING, TWIN SCREW

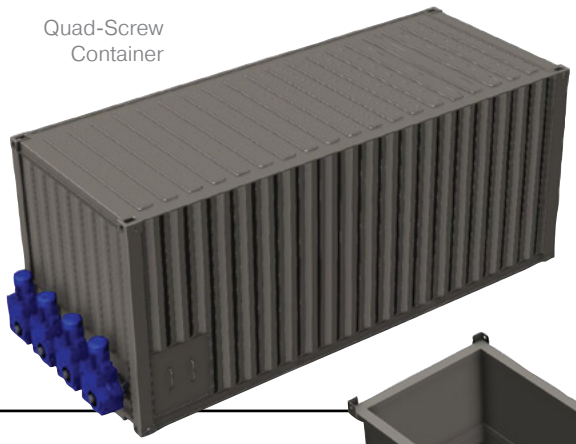
RECEIVING, SINGLE-SCREW

ENCLOSED, MULTI-SCREW

01 NUMEROUS APPLICATIONS

- Metering / surge protection
- Process infeed
- Moving-floor trailer receiving
- Wheel loader receiving
- SMART Container receiving

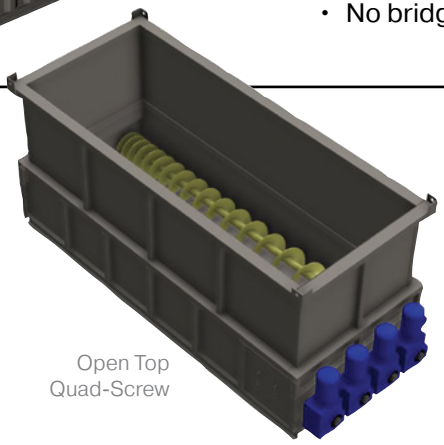
Quad-Screw Container



02 SMART FEATURES

- Shaft-mounted direct drive
- Individually powered shafts
- No drive chains, pulleys, or hanger bearings
- "Dust tight" when paired with our SMART Conveyors™
- Standard zero-speed sensors
- Optional explosion panels, spark detection, and deluge
- Vertical walls resist bridging
- Protects feed conveyor from damaging surges
- No bridging at the conveyor inlet

SMART CONTAINER RECEIVING



Open Top Quad-Screw

03 HIGHLY CUSTOMIZABLE

- Single-screw centering
- Open top (for wheel-loader and trailer receiving)
- Top hat (for moving-floor trailer receiving)
- Containerized with quad-screw outfeed
- Enclosed, multi-screw
- Custom solutions for unique needs

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SMART FLOORS

VERSATILE **DESIGN** | ROBUST **PERFORMANCE** | SIMPLE **MAINTENANCE**

01 VERSATILE DESIGN

- Contents can be blended at discharge
- Storage can be divided
- Trucks and wheel loaders can unload directly onto storage area
- Modular design allows for future capacity expansion

Storage building with SMART Floors

02 ROBUST PERFORMANCE

- Existing buildings can be converted to storage facilities
- Material flow is first-in, first-out
- Flights shear material off bottom of pile
- Accurate discharge rates
- Available for small, 20' bunkers or large buildings
- Available with “push” or “pull” hydraulics

03 SIMPLE MAINTENANCE

- No sensors or limit switches
- Overflow protection available
- Long-lasting wear materials
- Strokers are powered individually so crews can maintain the floors without shutting down the entire system

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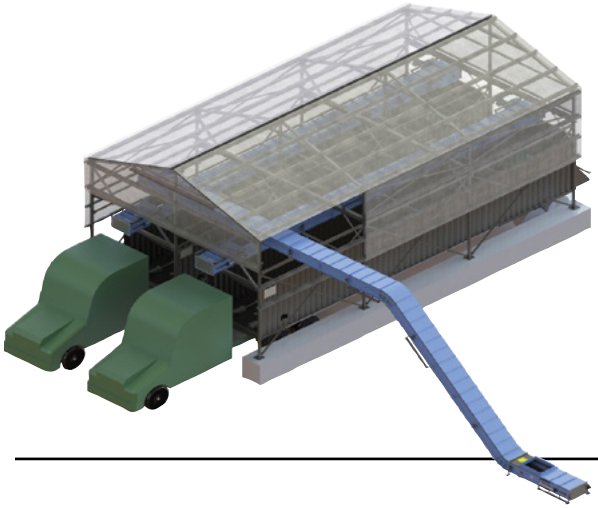
TRAILER LOADING

SMART **OPERATION** | MEASURABLE **ADVANTAGES** | EXCELLENT **VALUE**

01 SMART OPERATION

- Drops material directly into trailers
- Enclosed, conveyor-based system
- Full, even loads front to back
- Can be easily integrated into a chipping line or implemented as a self-contained process



02 MEASURABLE ADVANTAGES

- Requires no air permits to operate
- Drive-through convenience
- Eliminates need for loud, inefficient fans
- Eliminates the need for storage and its related maintenance costs
- Load times as fast as 20 minutes with BE&E's 48S SMART Conveyor™
- Modular design allows for expansion

03 EXCELLENT VALUE VS. CHIP BINS

- Less capital costs
- Far less dust
- Safer loading environment: no need to unplug material to encourage flow
- Less ground space required

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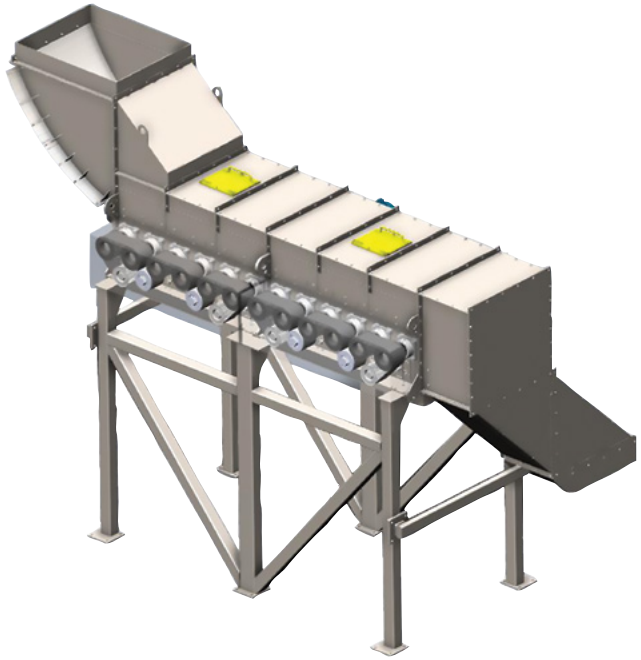
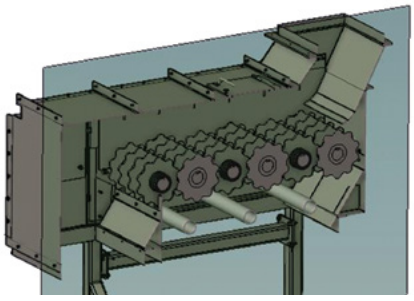
DISC SCREENER

SMART **FEATURES** | BETTER **ENGINEERING** | SIMPLE **MAINTENANCE**



01 SMART FEATURES

- Superior rock handing: thousands of shapes simulated to reduce jambs
- "Dust tight" enclosure
- Available with NFPA-compliant components for fire and explosion safety
- Discs not welded to shafts: can adjust spacing and swap discs
- Bolt-together construction
- Bolts directly to BE&E's SMART Conveyors™



02 BETTER ENGINEERING

- Cogged belt drive
- No chains or pulleys
- Quiet operation
- Direct drive, shaft-mounted motor
- No lubrication required
- No tensioning required

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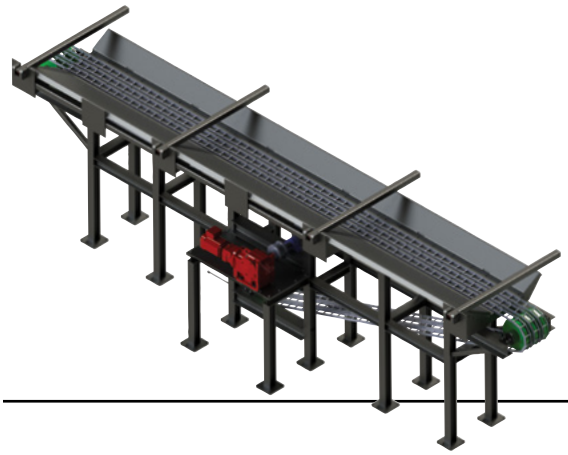
LOG HANDLING

SMART **DESIGNS** | INTELLIGENT **SORTING** | MANIFOLD **OPTIONS**

01 SMART DESIGNS

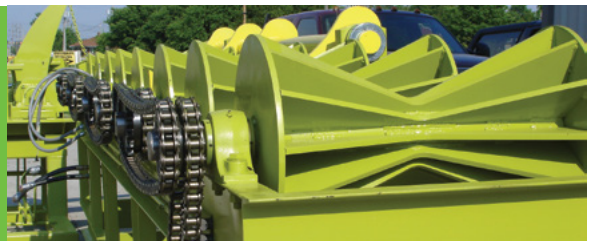
DECKS AND TROUGHS

- Easy-to-access bearings
- Modular, bolt-together sections
- Slots included for viewing tension
- Strands can be changed in less than an hour
- Individually driven strands reduce power requirements and decrease the size of shafts, bearings, and gearboxes
- Built to withstand years of abuse



02 INTELLIGENT SORTING

- 20' infeed deck with three or four strands
- Singulation with bull wheels (hardwood)
- Crosswise sorting (softwood)
- Three 10' bays (six sorts) for hardwood
- Ten 12' bays (ten sorts) for softwood
- Automatic length and diameter scanning (softwood)
- Waste conveyor under structure
- Walkways, stairs, and controls
- Three logs per minute sort rate for hardwood
- Eighteen logs per minute sort rate for softwood



03 MANIFOLD OPTIONS

- Automated grading
- Manual to fully automatic controls
- Metal detection with reject bin
- Hourglass conveyors
- Debarkers (rotary or rosserhead)
- Log conveyors (trough or hourglass)

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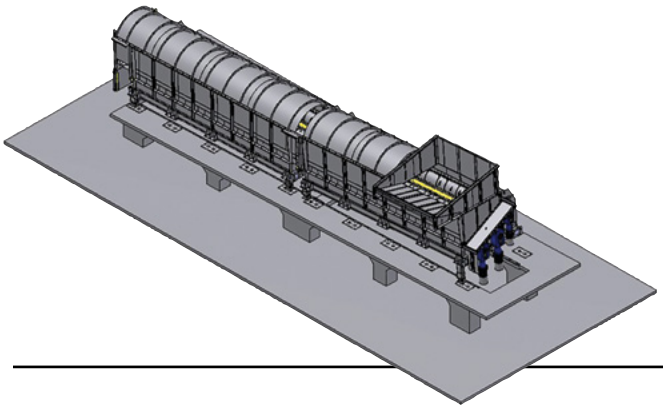
ROLLER DEBARKER

EXPANSIVE **ABILITIES** | SUPERIOR **PERFORMANCE** | SMART **OPTIONS**

01 EXPANSIVE ABILITIES

- Machine length: 131' with three modules, 42.6' per module
- Width: varies according to log length
- Log diameter range: 3-32"
- Log length range: 40" to 20'
- Capacity: Up to 150 tph with three modules
- Can be reconfigured for different species and conditions



02 SUPERIOR PERFORMANCE VS. DRUM DEBARKERS

- Less fiber and more bark removed
- Removable abraders
- Excels at removing frozen and stringy bark
- No heating required for debarking frozen wood
- Less power required to operate
- Smaller motors and drive components
- Easier access to components, less intensive maintenance
- Variable speed, independently driven rollers

03 SMART OPTIONS

- 1.1kW flow control gate
- Modular construction with up to three modules
- Various infeed configurations
- Available with bark reclaim conveyor

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BELT CONVEYOR

Belt conveyors from Biomass Engineering & Equipment are the premier choice for a horizontal or low-angle conveyance system. Built without catch points, our belt conveyors will transport your bulk materials without snags that slow production. They're safe and make for easier clean up.

LESS **MESS**

Rollers only used in tail section, so dust collects in one spot

NO **SNAGS**

Seamless tray:
Sections welded together and ground smooth

SAFE **OPERATION**

Powered by direct drive
No pulleys
No idler rollers

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DRAGBACK CONVEYOR

The Drag Back Conveyor from Biomass Engineering & Equipment is the most effective way to make your chain floor bin an accurate feeding device. Live chain conveyors tend to pack material along the top edge of the bin's discharge opening, causing strain on the wall of the bin. Our solution removes all the pressure against the exit wall. In fact, the exit wall can be removed entirely!

LESS **POWER**

Drive mechanism greatly reduces the horsepower required to operate the bin

LOWER **STRAIN**

Conveyor lowers the strain on the bin's components, thereby increasing their lifespans

ACCURATE **FLOW RATES**

Meters at discharge
Can handle large amounts of material

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BE&E SMART Conveyor™ at Pennsylvania pellet facility.

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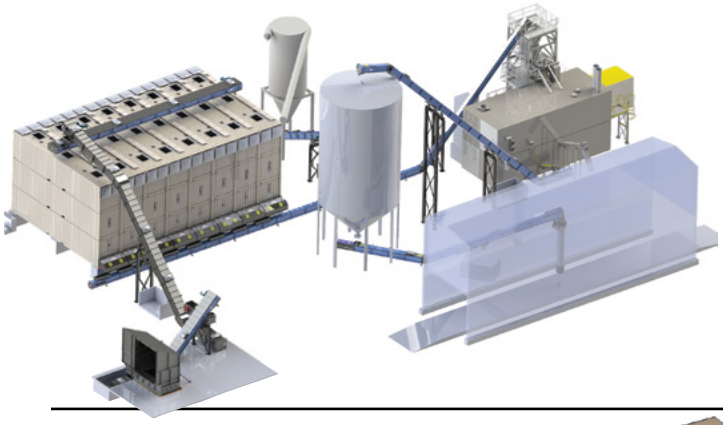
PELLET MILLS

BE&E offers complete service for turn-key pellet mills with outputs between 34,000-103,000 tons per year. Let us engineer, procure, and oversee the construction of a premium mill that will produce a consistent, value-added product.

BE&E SMART Conveyors™ at Georgia pellet facility.

01 ENGINEERING AND DESIGN

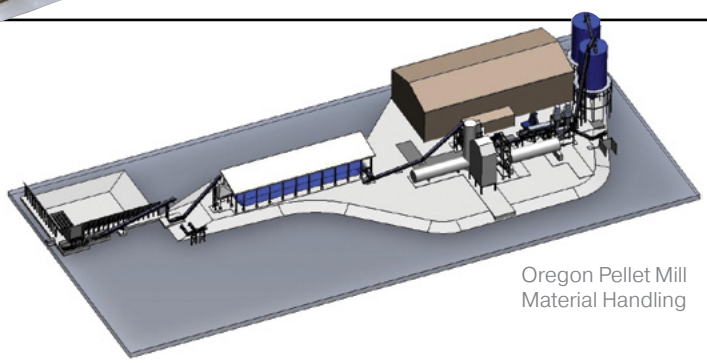
- Site civil engineering
- Electrical engineering
- Mechanical engineering
- Structural engineering
- Controls engineering
- Workload calculations



Drax pellet mill
Leola, Mississippi
Material Handling

02 INSTALLATION AND STARTUP

- Facility operations building
- Base rock and concrete for all machinery foundations
- Finished access roads and work area access pads
- Supply of all electrical components, controls, and machinery
- Electrical connections from the transformer
- Installation and startup for all the above



Oregon Pellet Mill
Material Handling

03 TECHNICAL SUPPORT

- Training on all supplied machinery
- CMMS maintenance program
- On-site technical support for the first month
- Quarterly technical visits for next year
- Assembly sections to save time during assembly

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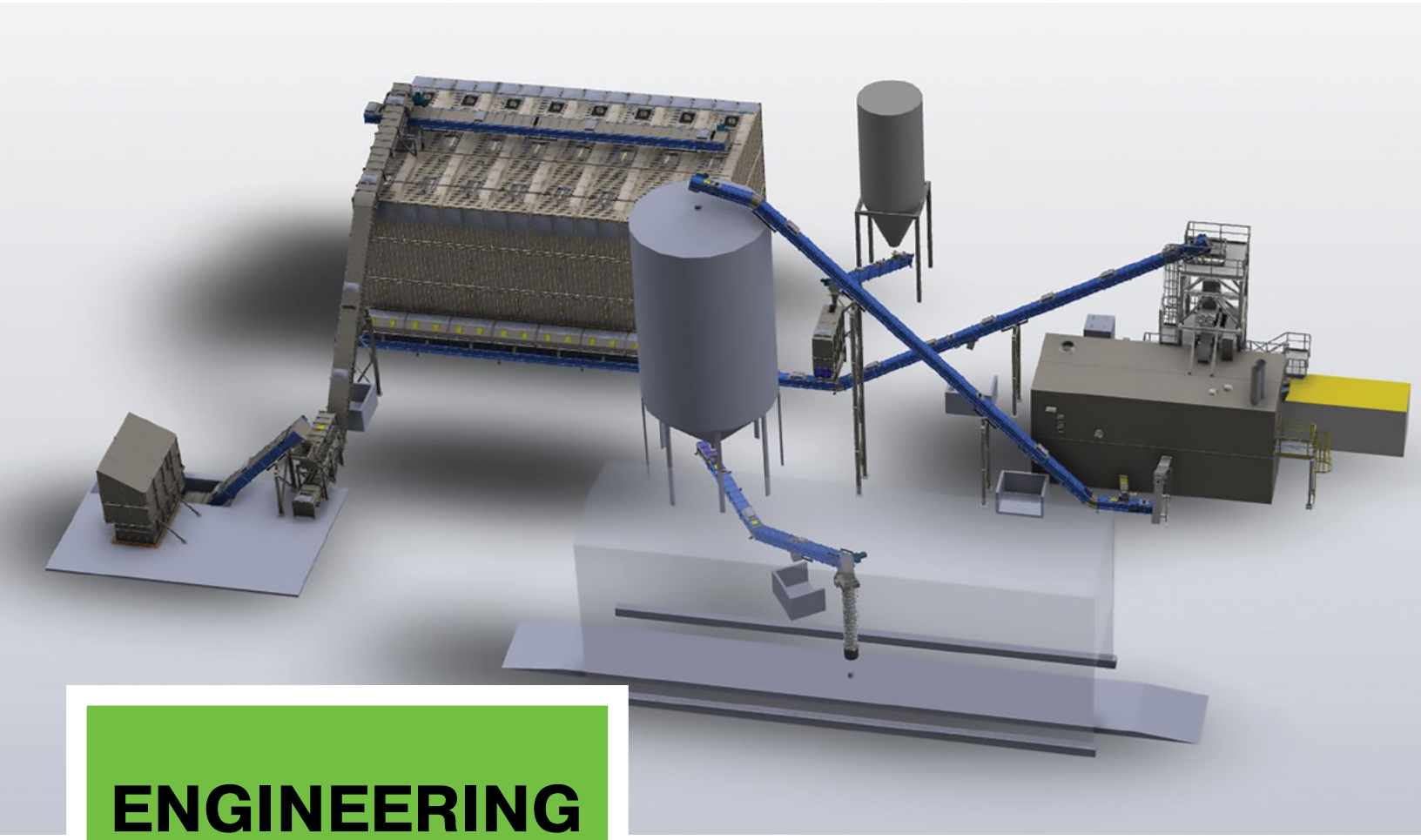

ENGINEERING & INSTALLATION

Far more than a machine manufacturer, Biomass Engineering & Equipment offers modeling, layout design, construction management, and turn-key services for its customers. We design everything in 3D to precisely locate equipment and prevent misunderstandings than can occur with 2D modeling.

ACCURATE **DESIGNS**

Engineering completed in 3D

TURN-KEY **SOLUTIONS**

Pellet mills
Material handling
Chipping lines
Log infeed
And more!

EXPERIENCED **CONSTRUCTION**

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