

STORAGE:

1. pile
2. bin/silo

Table 1: Examples of maximum values of storage facilities, based on a bulk density of 1.2 t/m³

	Max built storage capacity [t]	Footprint [m ²]	Capacity/Area [t/m ²]	Stacking rate [t/h]	Reclaiming rate [t/h]
Open longitudinal stockpiles*	3,000,000	450,000	7	4,500	4,500
Dome silos	60,000	3,600	17	2,000	2,000
Dome silos (cover)	180,000	11,310	16	2,300	2,300
Mammoth silos of the Eurosilo type	75,000	3,600	21	1,500	2,500
* Variable, this is an example of an iron ore stockyard in Rotterdam [8]					

1. PILE

Gambar system loading:

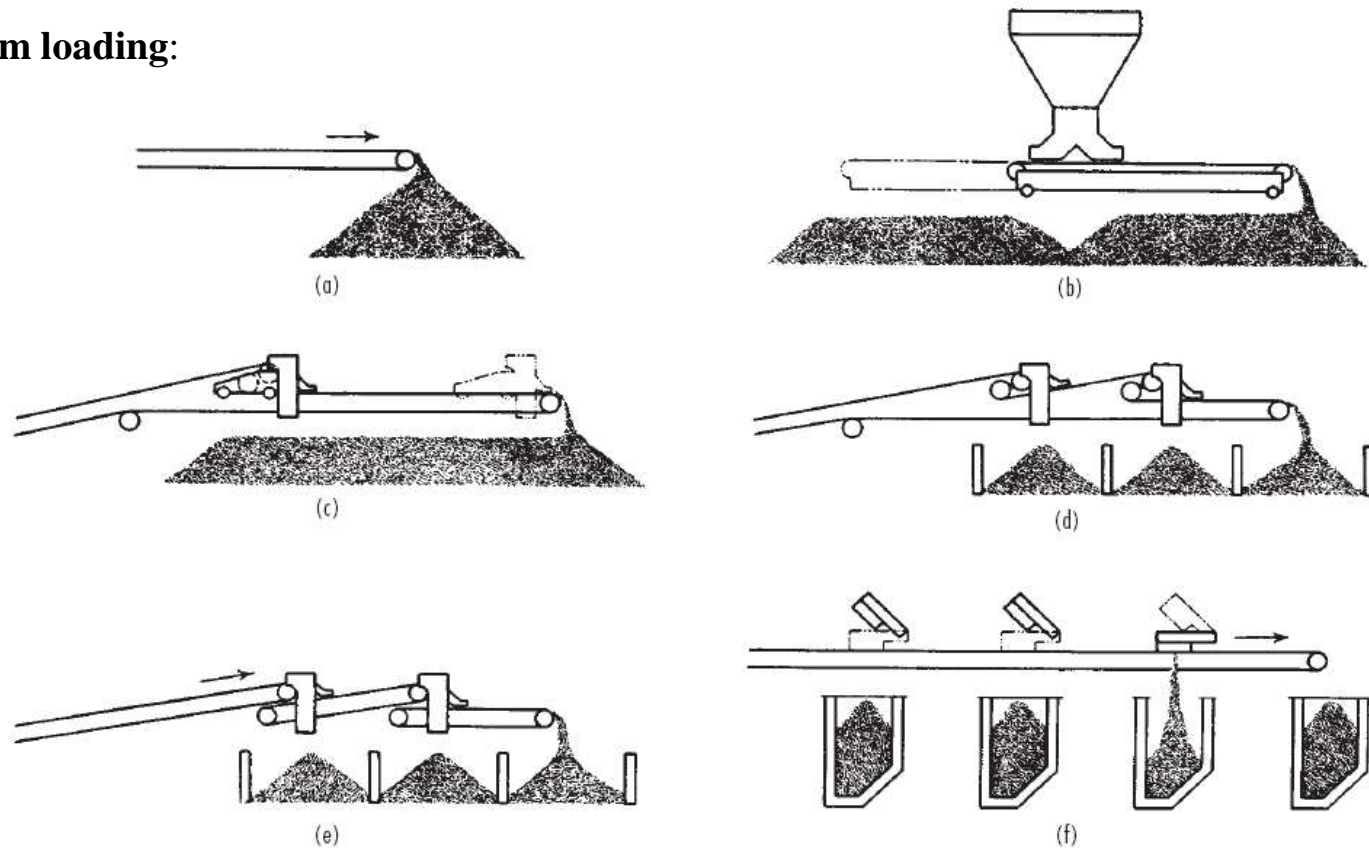


FIG. 21-14 Belt-conveyor discharge arrangements. (a) Discharge over an end pulley forms a conical pile at the end of the belt. (b) Discharge over either end pulley to distribute lengthwise by a reversible-shuttle conveyor. (c) Discharge through a traveling tripper, with or without a cross conveyor, to distribute material to one or both sides of the conveyor for the entire distance of tripper travel. Trippers can be propelled by a conveyor belt or by a separate motor. Motor-propelled trippers can also be automatically reversing to distribute material evenly or can be manually controlled to discharge at any desired point. (d) Discharge through fixed trippers, with or without a cross conveyor to one or both sides of the belt, to fixed bin openings or pile locations. This can also be done with multiple conveyors as shown in (e) or by stopping traveling trippers in the desired position. (e) Discharge from multiple conveyors through fixed discharge chutes, with or without a cross conveyor to one or both sides of the belt, to fixed bin openings or pile locations. (f) Discharge by hinged plows to one or more fixed locations along one or both sides of the conveyor. Plows may be adjusted to divide the discharge in several places simultaneously in the proportion desired. (FMC Corporation, Material Handling Systems Division.)

Sistem loading dan discharge:

a. Discharge menggunakan belt conveyor

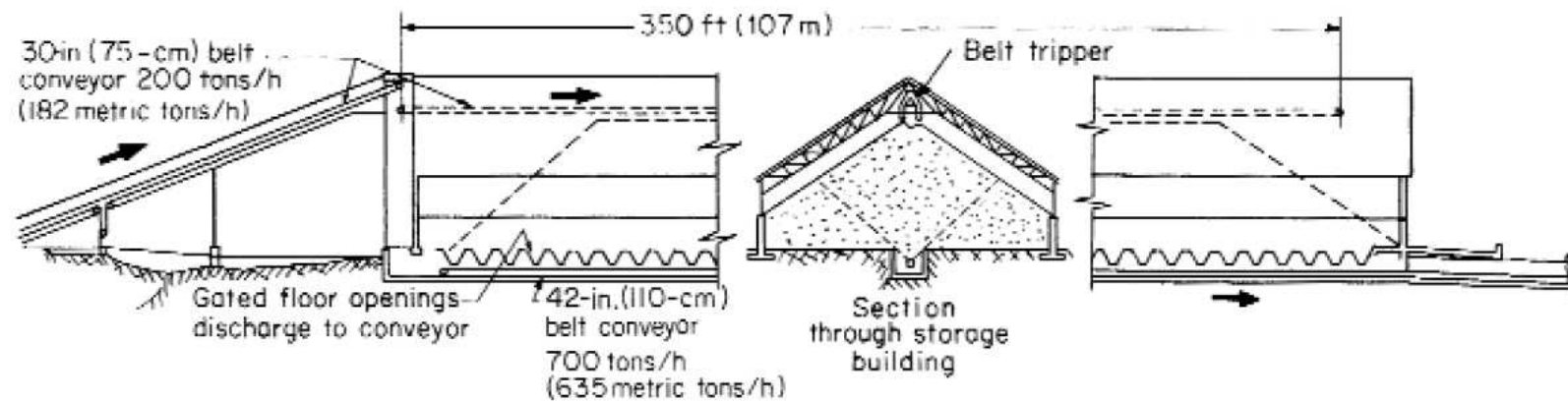
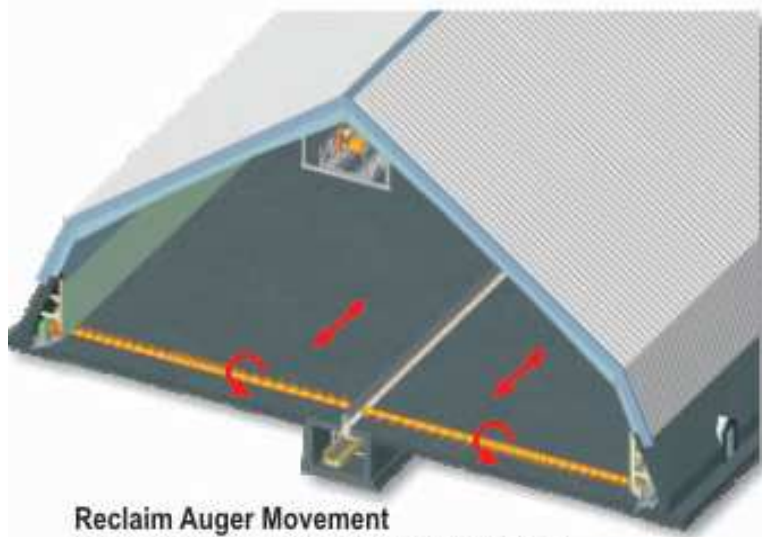
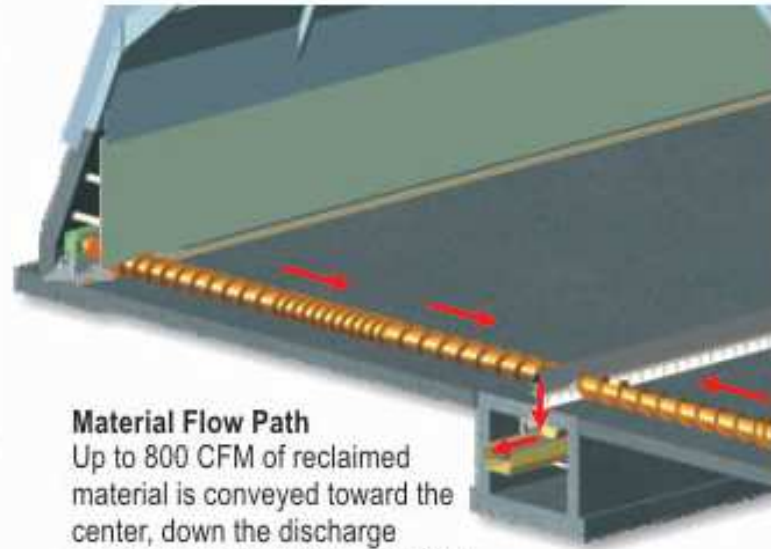


FIG. 21-15 Belt-conveyor storage and reclaiming in a flat-floor building. (*Stephens-Adamson Division, Allis-Chalmers Corporation.*)



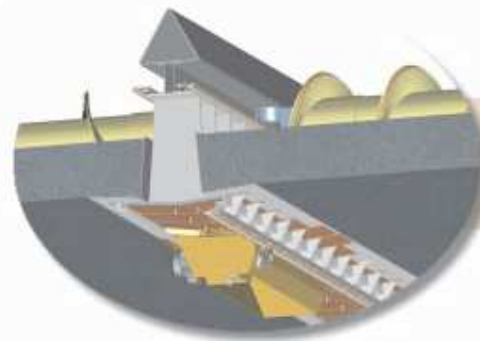
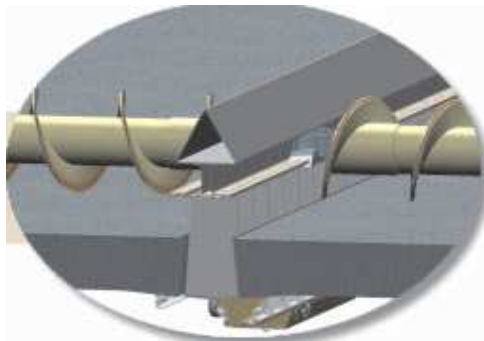
Reclaim Auger Movement

Variable-speed, reversible augers traverse the length of the warehouse while rotating to convey the material.



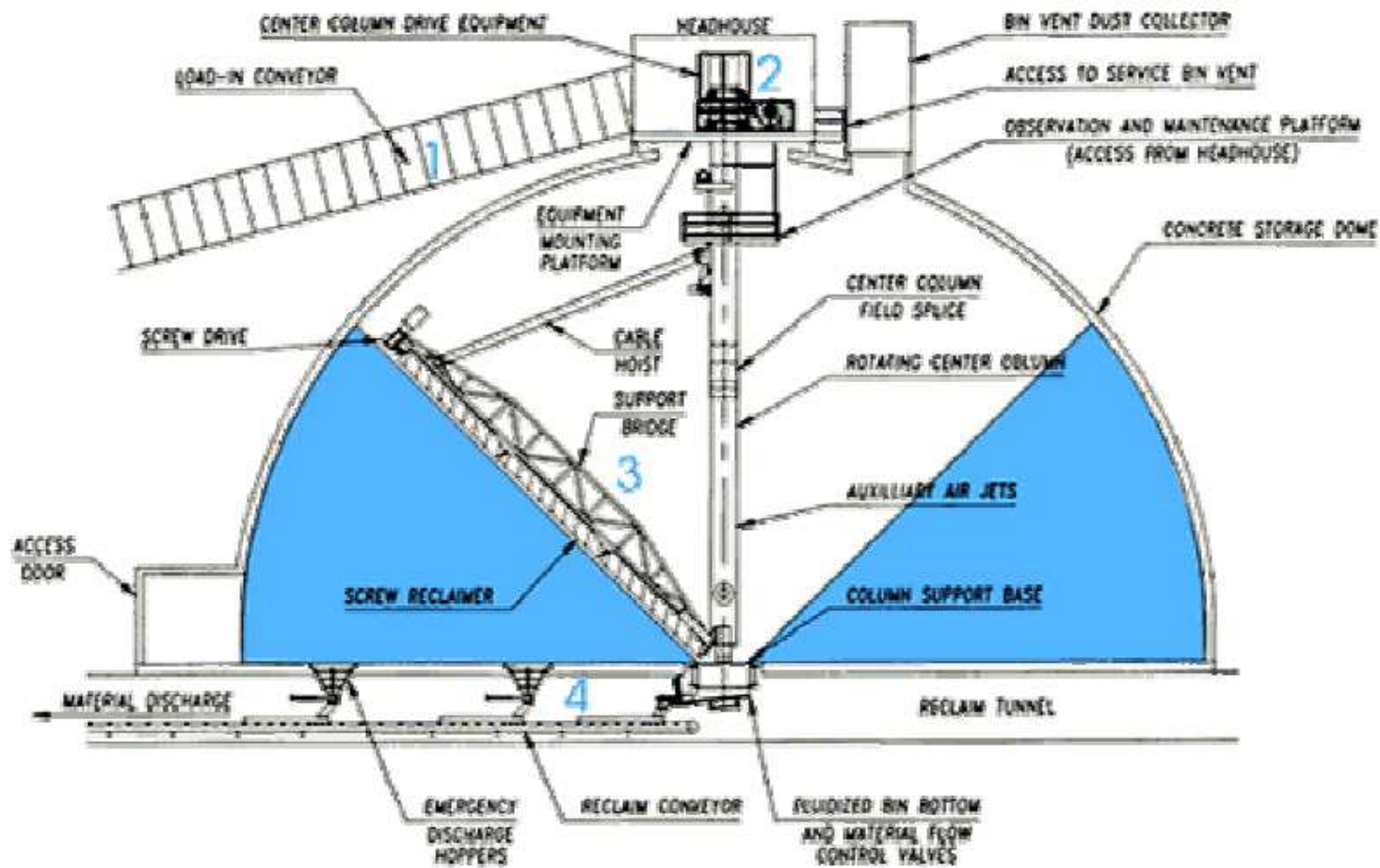
Material Flow Path

Up to 800 CFM of reclaimed material is conveyed toward the center, down the discharge openings, and out of the building on the discharge conveyor.

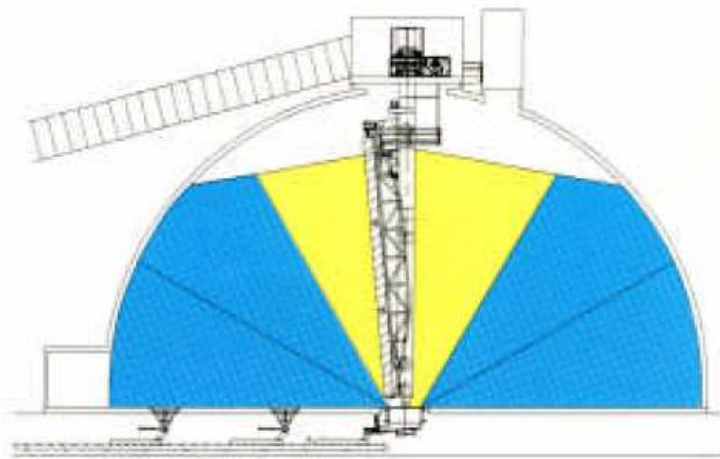




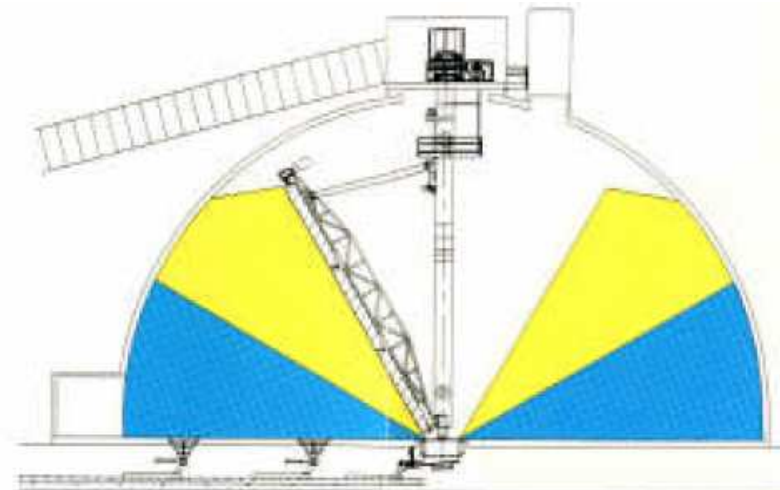
United States Borax & Chemical Corp. – Boron, California



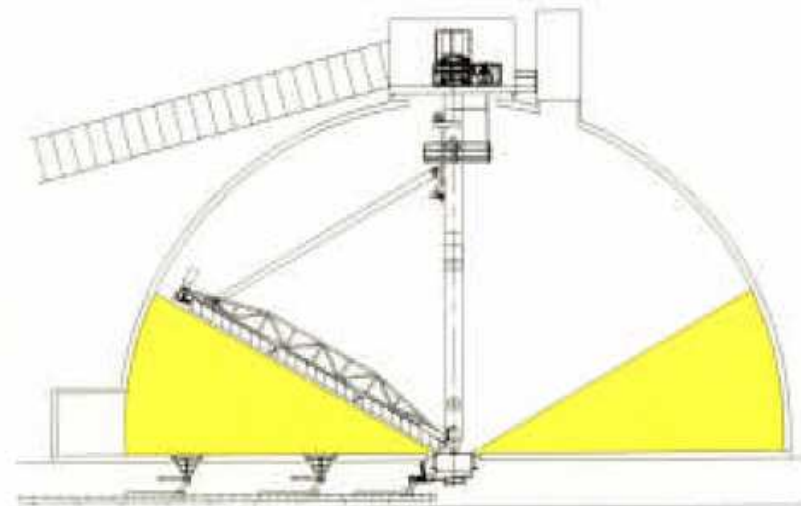
TYPICAL RECLAIMING SYSTEM



Phase 1- Gravity Reclaiming



Phase 2 – Gravity and Screw Reclaiming



Phase 3 – Screw Reclaiming to Dome Floor
Alternate Loading and Unloading System used for
storing materials that are not free flowing.

b. Sistem discharge menggunakan bucket wheel:

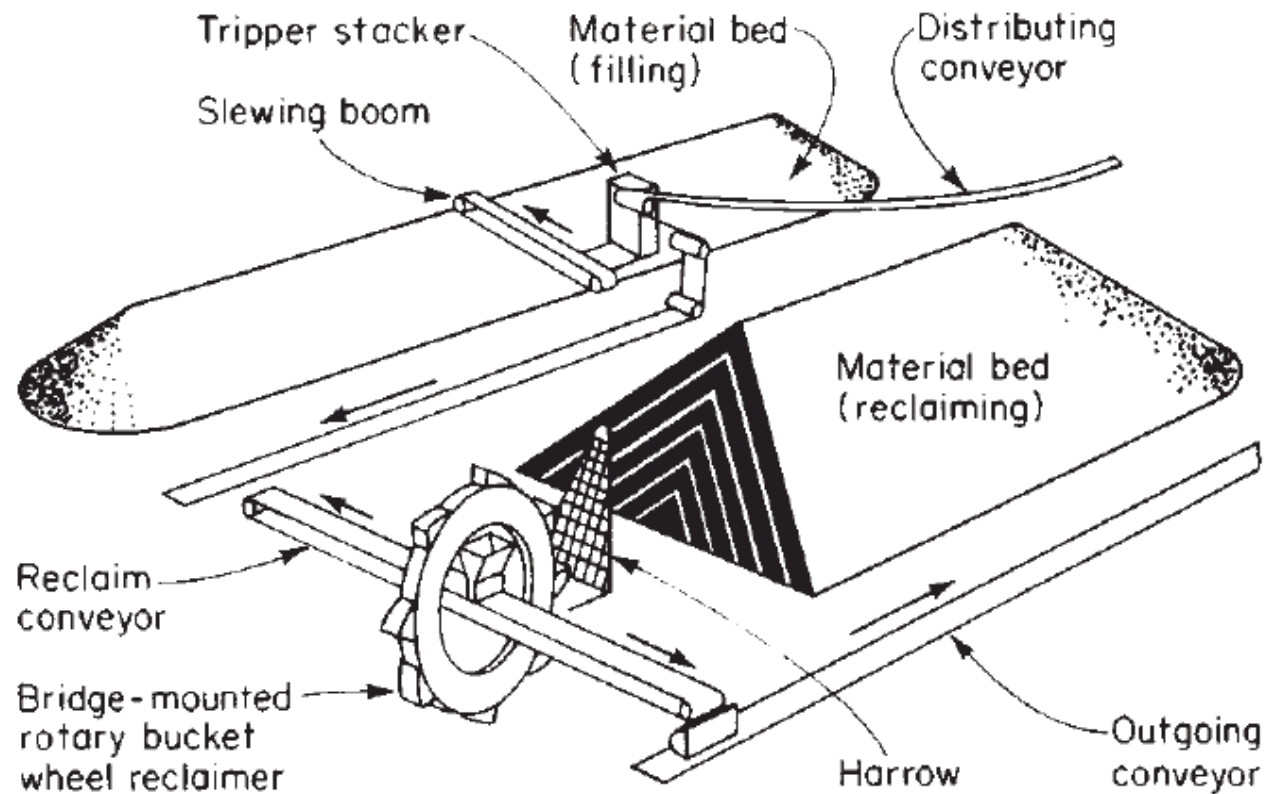
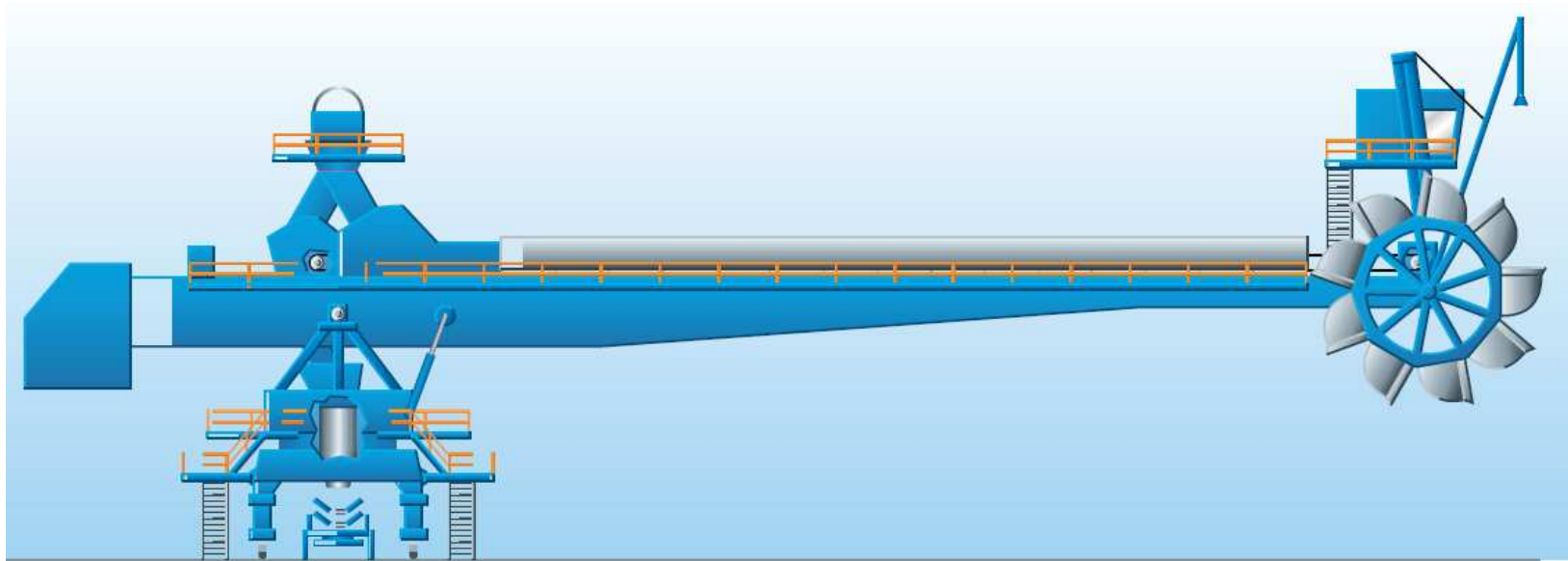


FIG. 21-16 Bucket-wheel reclaimer. Digging buckets mounted on wheel discharge on a belt conveyor for material transfer. (*Courtesy of Mechanical Engineering.*)

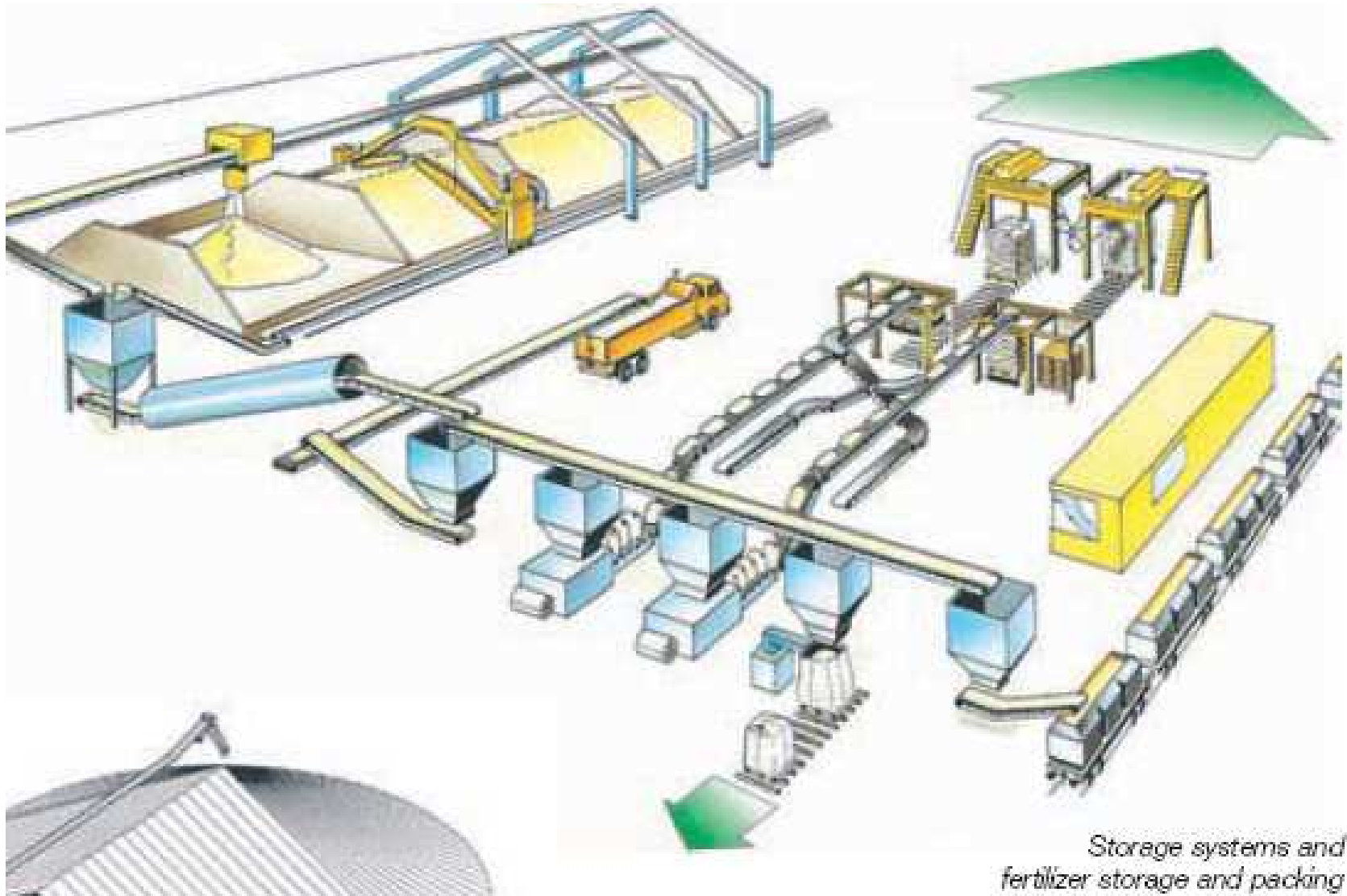


c. Sistem discharge menggunakan portal:



Longitudinal stockyard with twin-boom portal reclaimer





*Storage systems and
fertilizer storage and packing*

BIN :

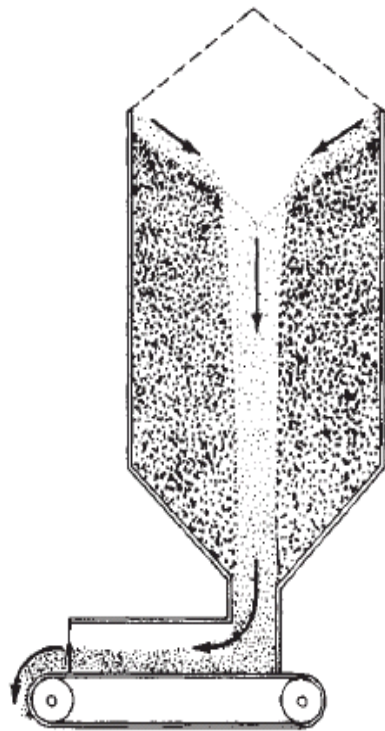


FIG. 21-18 Funnel-flow bin. The material segregates and develops ratholes.
(*Courtesy of Chemical Engineering.*)

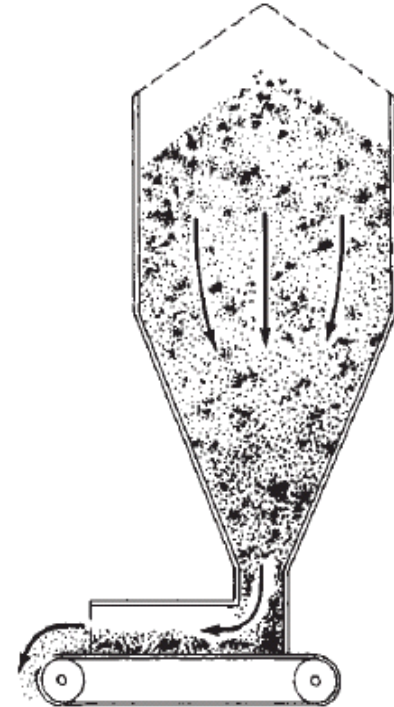


FIG. 21-17 Mass-flow bin. The material does not channel on discharge.
(*Courtesy of Chemical Engineering.*)